

# Regional Dimensions of Poverty and Vulnerability in Nepal

## Background Reports



Department  
for International  
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## Background

Although there is some evidence that poverty has been falling in Nepal over the last two decades there are still signs of large geographical variation with much higher levels of poverty in rural and mountainous areas, especially the Mid-West and Far-West (M&FW) regions. People living in these regions are mainly self-employed in subsistence agriculture with little cultivable land and hence low productivity. Food shortage is a chronic problem and there is high prevalence of under-nutrition, both underweight and stunting in children, as well as anaemia. These regions, being remote, also lack access to basic services and amenities. Temporary migration of adult men to India is commonplace but wages are low, as are remittances.

The UK Department for International Development (DFID) commissioned this study to better understand the regional dimensions of poverty in Nepal. The study had three main parts. The first set out to establish a measure of chronic poverty and vulnerability based on indicators included in existing major datasets in Nepal. The second used these measures to explore the trend at the regional and sub-regional level. The third set out to better understand the underlying cause(s) of chronic poverty and vulnerability in the Mid- and Far-West (M&FW) regions. These background reports provide the detailed working and analysis undertaken during this study, that was implemented by HPSPE International Programme Management. The lead statistical adviser and main author for this report was Prof. Nicholas Mascie-Taylor (University of Cambridge). The study was managed by Simon Lucas, Ben Powis and Natasha Mesko (DFID-Nepal).

The analysis in these reports does not reflect the views of DFID, and responsibility for errors in data or interpretation rest with the authors.

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# Report 1 – Defining chronic poverty and vulnerability

## 1.1 Introduction

The objective is to prepare and agree a definition(s) of chronic poverty and vulnerability in Nepal. This definition will provide the framework and the basis for the study methodology, more particularly the identification of key indicators for the measurement of chronic poverty and vulnerability. It is noted that in trying to define chronic poverty and vulnerability that it should include, but not be confined by issues such as social, economic, food, nutrition and climatic vulnerabilities, access to productive resources, markets, services and infrastructure<sup>1</sup>, and should also take into account the presence, distribution, depth and changes over time for chronic poverty and vulnerability. In the context of Nepal and this study it is considered important to link food security to chronic poverty and vulnerability, as many of the districts which are poverty stricken and at risk have huge food availability problems, particularly in the Mid-West and Far-West regions of the country.

## 1.2 Chronic Poverty and Vulnerability

### Heterogeneity and chronicity

To speak of chronic poverty is to acknowledge that there are important differences among those who experience poverty. Put briefly, to define poverty as chronic is to highlight the intensity or severity of poverty experienced over a prolonged period of time and often across generations; and manifested in multiple as opposed to single deprivations. However even when speaking of chronic poverty, it is important to remember that this is neither a homogenous nor a static category. To help locate the category of chronic poverty, Hulme and Shepherd's (2003) five-tier categorization of poverty is useful:<sup>2</sup>

- **Always poor** refers to those whose poverty score (income, consumption, nutritional status, human deprivation index, etc.) in each period is below a defined poverty line.
- **Usually poor** refers to those whose mean poverty score over all periods is less than the poverty line but are not poor in every period.
- **Churning poor** refers to those with a mean poverty score around the poverty line but who are poor in some periods but not in others.
- **Occasionally poor** refers to those whose mean poverty score is above the poverty line but have experienced at least one period in poverty.
- **Never poor** refers to those with poverty scores in all periods above the poverty line.

These categories can then be further aggregated into the **chronic poor** (always poor and usually poor), the **transient poor** (churning poor and occasionally poor) and the **non-poor** (the never poor, continuing through to the always wealthy). By definition, the transient poor fail to fully escape from poverty and therefore can be said to have much in common with the chronic poor. However we would argue that the distinction between transient and chronic poor is important in policy terms. Unless an individual or group therefore churns around the

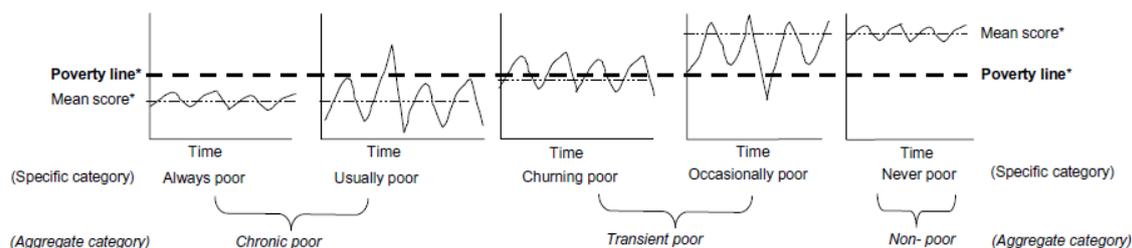
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<sup>1</sup> Note is taken of the need to consider the six parameters of the rural livelihoods framework (capital or assets), namely: human, natural, physical, financial, social and "voice".

<sup>2</sup> This categorization is linked to the drawing up of poverty lines. In principle however these can be extended to other indicators (assets or nutrition) or combinations of indicators (household level human deprivation index). They can also incorporate qualitative as well as quantitative indicators.

poverty line for a prolonged period of time, they should not be given the same policy priority as the chronic poor.

**Figure 1.1 The chronic poor, transient poor and non-poor – a categorisation**



Depending on data availability poverty could be assessed in terms of household expenditure, income, consumption, a nutritional measure, a poverty index, a poverty scale or an assessment of assets/capitals.

Source: Adapted from Jalan and Ravallion (2000)

### Poverty Measurements

There are a number of established frameworks which are used to understand and illuminate the dynamics of poverty. Here it is not necessary to go into detailed discussions of the frameworks<sup>3</sup> and so we will highlight those that are more relevant to our understanding of chronic poverty.

**Absolute poverty** reflects a state of subsistence normally below a pre-determined amount of per capita income or consumption deemed necessary to achieve an adequate standard of living. The international absolute poverty line currently stands at USD 1.25 per day (Ravallion et al., 2009). The enduring attraction of income poverty measures is that they lend themselves to precise analysis over time and across groups or regions. National statistics in developing countries use absolute poverty indicators to draw their poverty lines. These differ significantly from the international absolute poverty threshold of USD 1.25 per day. National poverty lines are normally considered to be more accurate measures of what it means to be poor in a country. This is more so the case when national statistics allow for regional disaggregation.

One of the weaknesses of absolute poverty lines is that they imply a 'break off point' in welfare functions. Thus those below the line are considered poor and those just above are not poor and somehow have an adequate standard of living. A corollary is that it may make sense to define more than one poverty line. Some countries for example have upper and lower poverty lines to distinguish between the poor and the extreme poor. Another approach is to construct a food poverty line which estimates the minimum amount of money required so that a household can purchase a basic needs food bundle. The cost of basic non-food needs can also be estimated in a similar way. The food poverty line together with the non-food line equals the overall poverty line.

All of the above approaches are essentially monetary based measures of welfare and have been criticised because they fail to capture the full range of deprivations that constitute

<sup>3</sup> For a succinct review of these frameworks and approaches see World Bank (2000).

poverty (DFID, 2001: 180). A more expanded understanding of absolute poverty was captured by the definition which emerged from the 1995 World Summit on Social Development, stating that absolute poverty is "a condition characterised by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. It depends not only on income but also on access to services." (Ravallion et al, 2009). The importance of including different deprivations into our measure of poverty is that they can paint a very different and more robust picture of what it means to be poor.

**Multidimensional poverty.** It is now increasingly accepted that poverty is a multidimensional concept (ADB, 2006, Alkire and Santos, 2010). So although a lack of income may adversely affect livelihoods, people can still suffer acute deprivations even if they possess adequate incomes. Multidimensional approaches therefore set out to capture a fuller range of deprivations (physical, economic, social, cultural etc) that constitute poverty, and also to incorporate key life capacities such as agency, participation and voice which conventional poverty measures overlook. The main challenge for multidimensional approaches is that they deal with a greater number of attributes, some of which may be quite context specific (greater variability in non-monetary indicators); and that it is not always easy to establish the relative weight of the different dimensions. For some therefore, multidimensional approaches lack the precision and comparability of income/consumption measures.

**Vulnerability.** By definition, poor people are exposed to higher levels of risk in life and normally have less resources to cope with shocks and hazards Vulnerability refers to the likelihood (actual and perceived) that individuals, households or communities will fall into a situation in which they are no longer able to cope. Vulnerability manifests itself externally (risk and shocks) as well as internally (sense of powerlessness or insecurity), and concerns itself with both the immediate and longer term impacts of risk exposure (Wagle, 2005).

### **Defining Chronic Poverty**

Chronic poverty is commonly defined as a state of poverty where individuals, households or regions are trapped in severe and multi-dimensional poverty for an extended period of time, perhaps even across generations. Duration, multi-dimensionality and severity are therefore the key characteristics of chronic poverty, and these are mutually reinforcing characteristics (Hulme et al., 2001). To this established set of chronic poverty characteristics, we want to add and highlight a fourth characteristic which is highly relevant to Nepal: space or location (Bird et al., 2010). Most national household survey data show a significant geographical dimension to the prevalence of poverty, with greater proportions of poorer households living in remote or less favoured areas. Chronic poverty therefore tends to be spatially concentrated, rather than evenly spread (Bird et al., 2010). Below we offer brief summaries of our four key characteristics.

- **Long/extended duration** is often referred to as the distinctive and defining feature of chronic poverty. Poverty that is both severe and multi-dimensional, but does not last over an extended period, is likely to be transient but not chronic. There has been some discussion about the length of time required for someone to be considered in a state of chronic as opposed to poverty. Research carried out by the Chronic Poverty

Research Centre<sup>4</sup> initially suggested a period of five years but this is a completely arbitrary cut off point (CPRC, 2004). Poverty can be chronic in shorter timeframes (during particular seasons of the year) and of course in longer ones (attached to life cycles). The key point about duration is that over time poverty eats into and may completely erode assets and networks, thus undermining people's livelihoods profile, their resilience and their voice. Finally it is important to note that chronic poverty may be transmitted over and across generations. Not only do the livelihood strategies of one generation have an impact on the strategies of future generations but given the persistent nature of chronic poverty, it may be the case that any prospect of upward mobility can only realistically be experienced by future generations.

- **Multi-dimensionality.** Poverty is a multifaceted and multidimensional experience, which is only partially captured by income measures of welfare. To the extent that poverty is chronic, the number of dimensions in life that are affected, the extent to which they are affected, and the negative impact the depletion of one dimension can have on others, are likely to increase. The task of developing adequate multidimensional indicators for chronic poverty is not easy but should be prioritised. There is evidence for example that the overlap between income and non-monetary indicators is actually quite modest (Baulch and Masset (2003), while others have found that non-income indicators (e.g. food poverty) are more reliable and meaningful measures of chronic poverty (Kabeer, 2010).
- **Severity.** Technically severity is measured by poverty gaps (i.e. the distance of poor people from national poverty lines) but there is no reason why this can not be equally applied to multidimensional indicators. Understanding the severity of poverty is important because it allows insights into the various trade-offs people make between the different dimensions of their poverty (e.g. chronically poor may forego health treatment in order to satisfy household food consumption needs), as well as time preferences (e.g. for the chronically poor the task of satisfying immediate needs restricts options related to future planning such as saving). Both of these aspects are as much indicators as they are determinants of chronic poverty.
- **Remoteness.** Chronic poverty tends also to have its own spatial characteristics, often reflecting high levels of covariant risk and compound disadvantage. Poverty can be triggered or worsened because people find themselves in geographically remote areas (e.g. far from the centres of political and economic activity), low potential or marginal locations (e.g. ecologically vulnerable areas that have low agricultural potential or few natural resources), less favoured areas (e.g. in politically disadvantaged or conflict zones), or poorly integrated locations (e.g. where market linkages are weak or the quality of social services is poor and expensive) (Bird et al., 2010). Importantly, areas where there are higher concentrations of poor people are also more likely to have higher concentrations of chronic poor. Physical remoteness is often matched by policy remoteness so that those living in chronically poor areas are also more likely to be marginalised from policy decision making. This political remoteness increases people's overall vulnerability to chronic poverty.

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<sup>4</sup>

See <http://www.chronicpoverty.org/>

## Defining Vulnerability

Like chronic poverty, vulnerability is a multi-layered and multidimensional phenomenon which refers to the risk or exposure of an individual or group of individuals to events that threaten or damage one or more aspects of wellbeing. For the chronic poor, life can be one long risk. A common way of conceptualising vulnerability is to distinguish between external threats to livelihoods (shocks, hazards, risks) and internal coping capacity (resilience or the ability to manage the threat) (McCulloch and Calandrino, 2003).

There are a number of external livelihood threats including natural shocks such as droughts, or economic shocks such as currency depreciation or shifts in marketability of commodities (Devereux et al., 2006). Resilience instead relates to 'coping strategies' which again can be found at the individual, household, community and national levels. People therefore protect themselves against livelihood risk in a number of ways including diversifying income, building a mixed portfolio of assets, managing money by saving or reducing expenditures, building social networks, and so on. If these risk coping mechanisms fail, the threat of chronic poverty becomes stronger.

Although vulnerability and poverty have traditionally been treated as distinct concepts, there is now a resurgent interest in the links between vulnerability and chronic poverty (Hulme and Shepherd, 2003; Prowse, 2003). Or to be more precise, it is now recognised that reducing vulnerability is an effective way of helping people lift themselves out of poverty. Vulnerability therefore can be seen as cause (e.g. living in ecologically fragile areas increases vulnerability and may result in longer term poverty), symptom (e.g. those living in chronic poverty are by definition more vulnerable than the non-poor), and a constituent element of poverty (e.g. higher levels of vulnerability increasingly seen as part of the very definition of poverty). The latter two understandings of vulnerability in particular highlight the mutually reinforcing nature of vulnerability and chronic poverty, and invite a more nuanced understanding of vulnerability.

## Defining Food Security

Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (World Food Summit, 1996). This widely accepted definition captures the following four dimensions of food security (FAO, 2006):

- *Food availability:* The availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports (including food aid).
- *Food access:* Access by individuals to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet. Entitlements are defined as the set of all commodity bundles over which a person can establish command given the legal, political, economic and social arrangements of the community in which they live (including traditional rights such as access to common resources).
- *Utilisation:* Utilisation of food through adequate diet, clean water, sanitation and health care to reach a state of nutritional well-being where all physiological needs are met. This brings out the importance of non-food inputs in food security.
- *Stability:* To be food secure, a population, household or individual must have access to adequate food at all times. They should not risk losing access to food as a consequence of sudden shocks (e.g. an economic or climatic crisis) or cyclical

events (e.g. seasonal food insecurity). The concept of stability can therefore refer to both the availability and access dimensions of food security.

Food insecurity is for the sake of this study treated as cause and symptom of chronic poverty, and depending upon duration and recurrence, food insecurity can be chronic or transitory. Chronic food insecurity is a long-term lack of secure access to enough food whereas transitory food insecurity is a temporary loss of access to food caused by a relatively unexpected loss of production like drought, flood, or crop pest infestation, price hike of food commodities, and inability to get nutrients due to health problems. Although chronic poverty is mostly measured by income indicators, there is evidence that food insecurity may be a more robust indicator of chronic poverty (Kabeer, 2010).

### 1.3 Context of Chronic Poverty and Vulnerability in Nepal Poverty in Nepal and Mid-West and Far-West Regions

Nepal is one of the poorest countries in the world with stubbornly high poverty rates and low levels of human development. According to the 2010 Human Development Report, Nepal ranks 138<sup>th</sup> in the world with a HDI value of 0.428. From the South Asia region, only Afghanistan has a worse HDI ranking. Given the persistence and extent of poverty, it is surprising to find that there has been very little systematic work on poverty dynamics in Nepal, even less on chronic poverty.

In Nepal the absolute poverty line based on the cost-of-basic-needs (CBN) approach (in which a poverty line is drawn to mark the level of per capita expenditure required to meet basic needs), is NRs 7,696 per capita per year (in 2003/04 (i.e. USD 110 per year or 0.3 per day). This is far lower than the international poverty line currently set at USD 1.25 per day. As indicated earlier, the CBN captures a food poverty and non-food poverty measure. An alternative to CBN is the direct calorie intake which measures poverty based on the number of people that consume less than the established minimum calorie requirement. For Nepal, the requirement has been set at 2,144 kilocalories per person per day (CBS, 2004).

Poverty in Nepal is widespread with an estimated 31 percent of the population (8.5 million people out of a total population of 27.5 million) living below the national poverty line and 41 percent consuming less than the minimum calorie requirement, based on the 2003-04 NLSS II (NPC, 2010b). Table 1.1 provides an overview of key poverty measures in Nepal.

**Table 1.1: Headcount Poverty Rate and HDI**

|                         | Poverty headcount (%) |         | HDI   |
|-------------------------|-----------------------|---------|-------|
|                         | 1995-96               | 2003-04 | 2006  |
| <b>Nepal</b>            | 41.76                 | 30.85   | 0.509 |
| <b>Urban</b>            | 21.55                 | 9.55    | 0.630 |
| <b>Rural</b>            | 43.27                 | 34.62   | 0.482 |
| <i>Ecological belts</i> |                       |         |       |
| Mountain                | 57.0                  | 32.6    | 0.436 |
| Hill                    | 40.7                  | 34.5    | 0.543 |
| Terai                   | 40.3                  | 27.6    | 0.494 |

Source: NLSS II (CBS, 2004)

First of all the table shows that over time there has been a significant reduction in the numbers falling below the poverty line (from 42% in 1995 to 31% in 2003). Some caution is required when reading these figures because they occur at a time when the country was experiencing intense political upheaval and conflict. In such circumstances, poverty rates would be expected to increase not decrease. The most plausible explanation for the decline in poverty is that in the 1995/96 count, there were a significant number of households just below the poverty line. In such a scenario, small improvements could have resulted in large poverty rate reductions (Bhatta and Sharma, 2006). Another important observation is suggested by Hunzal et al. (2011) who examined separately the food poverty and non-food poverty lines that make up the overall poverty line. They found that the decrease in food poverty from 1995/96-2003/04 was greater (16%) than in non-food poverty (14% over same period), and indeed in the mountain and hill areas non-food poverty rates actually increased while the national average was marginally decreasing. This suggests that figures showing a reduction in overall poverty mask an increasing inequality in non-food poverty in Nepal

The Human Development Index provides useful insights into the multidimensionality of poverty which, as we have argued, helps better understand the dynamics of chronic poverty in Nepal. In the 2010 Human Development Report, Nepal is singled out as one of the countries in the world that has made greatest strides since 1980 in terms of improving human development. From 1980 until 2010, its HDI rose from 0.210 to 0.428 representing an impressive annual increase of 2.4% (UNDP, 2010). To put this in context however, the HDI of Nepal is still significantly lower than the South Asia regional average which saw an increase in HDI from 0.315 to 0.516 over the same 20 year period. The Human Development Report gives another important reason to be less optimistic about Nepal's overall performance. In 2010 the Report considered for the first time the unevenness in the distribution of human development indicators among a country's people to produce a new inequality-adjusted HDI (IHDI). This adjusts the index of countries according to the inequality of their development. When adjusted, Nepal's HDI is reduced by 32% suggesting very inequitable development progress<sup>5</sup>.

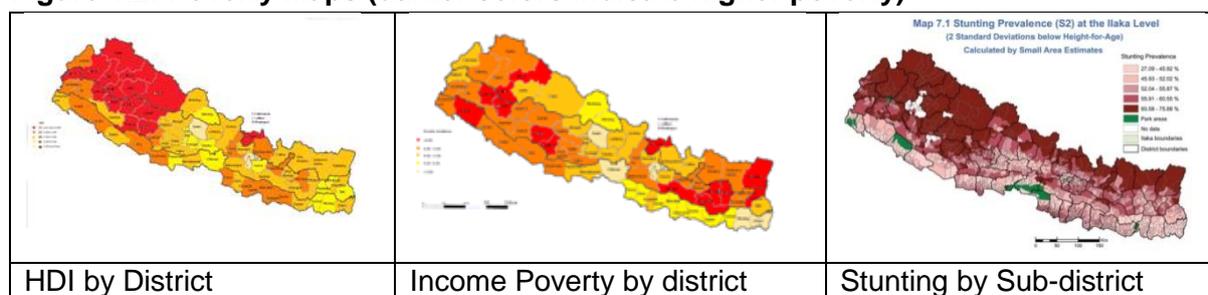
An important aspect of the inequity is captured in Table 1.1. Neither poverty reduction nor human development progress are evenly spread throughout the country. In both measures, there are significant differences between urban and rural locations. On the one hand this reflects the urban based nature of national growth in Nepal. On the other hand, it suggests that reliance on agriculture which dominates rural livelihoods in Nepal, may be an important determinant of poverty. Beyond rural and urban divides, it is clear that geography impacts on poverty in other ways. There are significant variations across the country by development regions with poverty rates reaching 45% and 41% in the Mid- and Far-Western Regions. This contrasts strikingly with the 9.6% rate found in urban locations. Poverty rates also show marked differences by ecological zone with 32.6%, 34.5% and 27.6% in Mountains, Hills and Terai respectively.

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<sup>5</sup> The IHDI calculated inequality using the same HDI indicators utilized for the 2010 report. In the case of Nepal, the data source was the 2003 Living Standards Survey II. See <http://hdr.undp.org/en/media/Sources-of-data-for-inequality-measures-in-2010.pdf>. IHDI technical notes can be found at [http://hdr.undp.org/en/media/HDR\\_2010\\_EN\\_TechNotes\\_reprint.pdf](http://hdr.undp.org/en/media/HDR_2010_EN_TechNotes_reprint.pdf) for the IHDI

Figure 1.2 provides further evidence to support the argument about uneven distribution of poverty in Nepal. The three maps show a strong convergence of disadvantage in particular areas of the country, with many of the Mountain districts particularly in the Mid-West and Far-West belonging to the poorest in the country. The maps therefore reinforce the view that spatially determined factors play a pivotal role in explaining the incidence and severity of chronic poverty in Nepal.

**Figure 1.2: Poverty Maps (darker colors indicate higher poverty)**



Data Sources: UNDP (2004); WFP/CBS (2006)

There are a number of core factors which have been identified as contributing to poverty in Nepal. In line with research in other parts of the world, it is likely that the same factors will feature strongly in discussions of chronic poverty determinants. However, as indicated earlier, the intensity, convergence and interlocking dynamics of the same factors may well differ in contexts of poverty and chronic poverty, and will almost definitely manifest themselves differently in different locations.

The economic status of a household both determines and reflects its poverty status. The predominance of poverty in rural areas is a function of the fact that returns to those working in agriculture is low<sup>6</sup>. According to the CBS, households headed by agricultural wage labours are the poorest followed by those households headed by people by self-employed in agriculture (CBS, 2005). Factors that contribute to the poverty status of those employed in the agricultural sector include small landholdings size, poor access to affordable technology and irrigation, poor quality land, and reduced employment options in the non-agricultural sector.

A lack of access to basic services and amenities is major determinant of poverty and has direct impact on other poverty determinants (Hunzal et al., 2011). There are three dimensions to this: poorer households are likely to have access to fewer amenities, which are of poorer quality and usually cost more. It is not surprising that most studies report less access and poorer provision of core services in remote and hard-to-reach areas (NPC, 2010a), leading some to argue that the lack of basic infrastructure and services is the single most important binding constraint on the development of the agricultural sector and those employed within it (ADB, 2002)<sup>7</sup>. Besides this, poor access to amenities such as water, sanitation and electricity can have negative impacts on other livelihoods aspects. Thus limited access to

<sup>6</sup> Over 80% of the entire population relies on agriculture for their livelihood

<sup>7</sup> There is widespread recognition by poverty researchers in Nepal that discussions on access and provision of services cannot be detached from a consideration of the broader institutional context and the impact of years of political conflict (NPC, 2010a)

electricity restricts access to modern technology, a lack of good sanitation and good quality water can result in poor health outcomes (Hunzal et al., 2011). Recently the WFP conducted a review of basic service delivery of Village Development Communities and found that generally across the country the quality of service delivery was unsatisfactory. However the quality of services in the Mountains and the Mid-West was deemed to be particularly challenging (WFP, 2010). Another recent diagnostic study suggested that infrastructural developments and social service provision in Nepal has benefitted the better off sections in society (ADB, DFID, ILO 2009)

Household composition contributes to the poverty status of a household. In the context of Nepal it is accepted that higher levels of poverty are to be found in cases where the dependency ratio in households is higher (Hunzal et al., 2010), where household sizes are larger (Bhatta and Sharma, 2006) and where the proportion of female headed households or widow headed households is higher<sup>8</sup>. Again these demographic characteristics have a direct impact on other livelihood aspects. For example children of larger poorer households or poorer female headed households are more likely to be involved in paid and household work in order to contribute to the household income. As a result, school attendance is likely to suffer. This increases susceptibility to deepening and entrenched poverty.

The relation between low literacy levels and poverty are well established with the former seen as depriving people from opportunities that may derive from economic growth. Drawing on the Nepal Living Standards Survey (1995/95 and 2003/04), Bhatta and Sharma (2006) argue that chronically poor households are particularly disadvantaged in terms of educational attainment. For example only 15% of chronically poor household adults can read and write while the percentage is 42 for non-poor households. Table 1.2 highlights the geographical variation in educational attainment: literacy rates are higher in urban areas and significantly lower in remote areas. Gender differences are also very apparent with males having higher educational attainment than women and with the difference widening in more remote areas and in successive levels of educational attainment.

**Table 1.2: Literacy Rates\* by Sex, region and Rural/Urban Area**

|                         | <i>Male</i> | <i>Female</i> | <i>Both</i> |
|-------------------------|-------------|---------------|-------------|
| <b>Nepal</b>            | 54.5        | 25.0          | 39.6        |
| <b>Urban</b>            | 78.0        | 54.8          | 66.9        |
| <b>Rural</b>            | 51.9        | 22.0          | 36.8        |
| <i>Ecological belts</i> |             |               |             |
| Mountain                | 50.2        | 16.5          | 33.2        |
| Hill                    | 60.2        | 28.2          | 43.9        |
| Terai                   | 49.8        | 22.7          | 36.5        |

Source: CBS (1996). Note: \* ratio of literate population of 6 years and above age group to the population of the same

<sup>8</sup> The relation between poverty and households headed by females in Nepal needs further research. There is evidence suggesting that households with female heads may not be poorer than those with male heads (ICIMOD, 2010). This may simply reflect the fact that female headed households are in receipt of higher levels remittances. Even if this is true, remittance patterns are likely to differ between the chronic, transient and non-poor. Also, it is important not to focus exclusively on income measures when discussing female headed households. In Nepal discrimination against women, particularly in rural areas, covers many domains including physical security, health, education and employment.

Nepal remains one of the most food insecure countries in Asia. A recent combination of food price hikes, natural disasters and low economic growth has exacerbated the level of food security in the country. Poverty causes food insecurity as people lack the means to produce sufficient food or purchase food in the market. Food insecurity can also lead to poverty when people have to borrow or sell assets in order to buy food. Continuous and seasonal food security monitoring by WFP (Vulnerability Analysis and Mapping (VAM) and Food Security and Market Monitoring) show that the most food insecure districts of the country are the Mountain districts of the Karnali zone, as well as the mountain areas of the Far-West and Mid-West Hill districts like Rukum and Rolpa. Selected food security variables for the three main ecological zones and Karnali are presented in Table 1.3.

**Table 1.3: Food Security Variables in Terai, Hill and Mountains and Karnali zone of Nepal**

| Category               | Variables   | Terai    | Hills     | Mountain | Karnali |
|------------------------|---|----------|-----------|----------|---------|
| Resources              | • Population growth rate                                      | 2.62%    | 1.97%     | 1.57%    | 1.90%   |
|                        | • Adult literacy  | 61.7%    | 76.0%     | 62.0%    | 31.8%   |
|                        | • Deforestation rate  | 1.3%     | 2.3%      | 0.1%     | 0.1%    |
| Availability           | • Average self-sufficiency (months)                           | 5-8      | 3-6       | 3-6      | 3-6     |
|                        | • Population/agriculture land (person/ha)                     | 6.6      | 9.5       | 8.8      | 4.3     |
| Access                 | • Poverty (headcount)   | 27.6%    | 34.5%     | 32.6%    | 54.5%   |
|                        | • Land ownership  | 87.1%    | 95.4%     | 94.2%    | 91.0%   |
|                        | • Average travel distance to roadhead /market (hours)         | 0.9      | 2.2       | 2.9      | 3.7     |
|                        | • Share of expenditure on food                                | 55.6%    | 68.3%     | 56.5%    | 67.1%   |
| Utilisation            | • Under nourishment   | 38.4%    | 41.8%     | 46.3%    | 48.0%   |
|                        | • Acceptable food consumption (%poor/borderline/acceptable)   | 5/36/59% | 12/28/60% | 7/39/54% | 5/49/46 |
| Vulnerability & coping | • Percentage of households with one or more members migrating | 46%      | 45%       | 36%      | -       |
|                        | • Coping strategy index <sup>9</sup> (average for Nepal 17.2) | 16.8     | 21.7      | 20.0     | 20.1    |

Source: NPC (2010a).

Malnutrition rates in Nepal are also among the highest in the world. A recent report by the National Planning Commission (NPC, 2010a) offers an overview of relevant indicators at national and regional levels. Almost 50% of children under five in Nepal are stunted with prevalence rates reaching 58% in the Mid West and 53% in the Far West. The incidence of wasting is equally high with a national prevalence rate of 13%. In the Far West the

<sup>9</sup> The coping strategy index is used as a quick and effective proxy of food security and is driven by a single question: "What do you do when you don't have adequate food, and don't have the money to buy food?". The index combines the frequency of the coping strategies with their severity. Frequency is measured by recalling the number of times a strategy was adopted during the 7 days prior to the interview date. Severity is a weight factor assigned to each coping strategy (the more severe the strategy, the greater the weight). A coping strategy index is then calculated for each household as the sum of the frequency times the severity of each adopted strategy.

prevalence rate rises to 17%, the highest in the country. More than 38% of children under five are underweight with the highest percentages recorded again in the Mid-West and Far West. If we consider maternal nutrition, 24% of women in Nepal have a BMI of less than 18.5. The situation in the Far West is particularly alarming with 33% of women undernourished (NPC, 2010a).

Low social status is also an important determinant of poverty in Nepal. Certain caste and ethnic groups have remained poor for generations because of socio-cultural norms which restrict or deny them access to resources and livelihood opportunities. Table 1.4 below draws on data from the CBS/NLSS report and shows that Dalits, Muslims and Indigenous People (IP) are twice as likely to be poor compared to Newar, Brahman, Chhetri and Terai middle caste. Moreover while poverty among the more disadvantaged ethnic or caste based groups has decreased from 1995/96 to 2003/04, the gap between them and the advantaged groups has only increased over the same time (e.g., while 46% of below poverty line Brahmin/Chhetris rose above the poverty line in ten years, only 6% of Muslims were able to do so). In her analysis, Bennett (2005)<sup>10</sup> also shows *inter alia* that per capita consumption levels in Dalit, Janajati and Muslim households are 25%, 21% and 20% lower respectively than Brahman/Chhetri households; health outcomes and educational attainment levels are significantly higher among the higher caste groups; and lower castes are far less represented in key political positions and score significantly less on the composite empowerment and social inclusion index.

**Table 1.4: Poverty Incidence Head Counts and Trends by Caste and Ethnicity**

| <b>Caste and Ethnicity</b>   | <b>1995/96</b> | <b>2003/04</b> | <b>Change in %</b> |
|------------------------------|----------------|----------------|--------------------|
| Nepal                        | 42             | 31             | -26%               |
| Newar (high caste)           | 19             | 14             | -28%               |
| Brahman/Chhetri (high caste) | 34             | 18             | -46%               |
| Terai (middle caste)         | 29             | 21             | -26%               |
| Terai IP                     | 53             | 35             | -34%               |
| Muslim                       | 44             | 41             | -6%                |
| Hill IP                      | 49             | 44             | -10%               |
| Dalits                       | 58             | 45             | -21%               |

Source: NLSS II (CBS, 2004)

One of the limitations of the poverty datasets used so far is that they mostly provide household level data and do not pick up on intra-household disparities. As a result they may hide important gender differences in consumption patterns, control over resources, access to services and employment, and economic security. Recent research by DFID and the World Bank used instead Nepal's census data to probe some of the intra-household disparities. The report finds that women had no autonomous access to land which is the primary means of production; little if any ownership of key assets (land, house and livestock); were mostly restricted to family-based unpaid work; and in cases of paid employment, their wages were lower than their male counterparts (DFID/World Bank, 2006). Again the report noted important geographical variations. While Nepal has a Gender-related Development Index

<sup>10</sup> This builds on the Nepal Gender and Social Exclusion Assessment (GSEA), a collaborative policy research study undertaken by World Bank and DFID.

(GDI) value of 0.545, ranking it 119 out of 155 countries, the difference between urban and rural areas is significant (13.2%) and indicates that the gender division is significantly more pronounced in rural areas than in urban areas (SIRF 2007 in NPC, 2010b). Furthermore, districts in the Far and Mid-Western Mountains and Hills lag even further behind with GDI values below 0.4 (DFID/WB, in NPC, 2010b).

Vulnerability exists in the presence of risk factors that jeopardize livelihood security, including those that affect coping abilities. Geographic, social, economic and cultural exclusion and inequalities heighten vulnerability to livelihood security. Vulnerability depends on the interplay of the severity of risk and the ability to cope. In the context of Nepal there are many risk factors which can contribute to the poverty status of households. These include natural disasters (droughts, floods, earthquakes, landslides, climate change etc.), political conflict, disease and illness, and employment security.

Nepal is one of the world's climate change hot spots and is prone to natural disasters, including floods, droughts and earthquakes. All of these disasters have immediate impacts on agricultural production but can also trigger other livelihood losses such as health deterioration caused by the onslaught of diseases, the destruction of property, food security, and forced displacement. Recent work into food security in Nepal (NPC, 2010a) highlights key regional differences in terms of vulnerability to natural disasters: the Terai is most at risk of flooding, the Far and Mid-Western Regions are more prone to localized droughts, the Hills and Mountains have more landslides and earthquakes.

Political uncertainty and violence have had a major impact on poverty in Nepal. Drawing on NLSS data, Bhatta and Sharma (2006) have shown that high levels of political violence strongly correlate with both chronic and transient poverty. Furthermore, the National Planning Commission (NPC 2010a) refers to a 2007 study by WFP/OCHA which developed a conflict impact assessment<sup>11</sup> and found that Far-Western region was most severely impacted during the conflict, followed by the Mid-Western region. The signing of the peace treaty in 2006 has changed the political landscape in Nepal and ushered in an era of relative political stability. However there remain concerns about the overall political situation with frequent incidences of *bandhas*, security threats, poor local governance and a collapse of law and order in some VDCs. Furthermore the delivery of social services has and is still suffering with government employees, health workers and teachers and so forth leaving their posts. While currently the most affected region in Nepal is Central and Eastern Terai, previously it was the Mid and Far West regions which suffered most. It is safe to assume that the impact of this on people's livelihoods in the Mid and Far West regions has been and continues to be negative.

Food security poses an important and on-going risk to chronically poor households. In recent years Nepal has felt the impact of global food and fuel price rises with consumer inflation increasing by 13.2% and 10.5% in 2008/09 and 2009/10 respectively. Driving this increase are significant rises in food and beverage items (MoF 2011). Within the country, we again

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<sup>11</sup> The assessment considered multiple indicators including food availability and livelihoods, access to markets and various services, and incidences of conflict (personal security, blockades and direct human impact of the conflict).

observe important regional variations with food prices higher in the Mountain regions and the West than in the Terai (IFPRI 2010)<sup>12</sup>. Higher food grain prices constitute an immediate risk to marginal farmers and the hungry poor. Distress sales are not uncommon (Ministry of Agriculture, 2008).

Faced with livelihood threats, households resort to different coping strategies (Devereux 1993). It is widely accepted that coping strategies differ in terms of reversibility and commitment of resources. Households can therefore make modest livelihood adjustments (e.g. eating less costly foods) that can be later reversed and therefore entail less of a longer term livelihood risk. These strategies are qualitatively different from other more extreme options (e.g. selling productive assets) which are less reversible and jeopardise longer term livelihood security (Watts 1983). Coping strategies are therefore important indicators of chronic poverty: as households experience greater poverty their need to revert to more extreme coping strategies is also likely to increase. The National Planning Commission (2010a) reports on coping strategy data collected quarterly by NeKSAP (Nepal Food Security Monitoring System)<sup>13</sup>. By region, the highest coping strategy index score is found in the Mid and Far Western Hills, and there are indications that coping has intensified recently especially in response to food price rises (WFP 2010, in NPC 2010a).

### Summary Tables

The final two tables offer overviews capturing some of the key discussions rehearsed above. Although we have attempted to establish preliminary definitions of chronic poverty and vulnerability in Nepal to then be used as a framework for subsequent analysis, it is important to reiterate that there are serious gaps in our understanding of chronic poverty in Nepal. This, as we have stated, is surprising given the prevalence of different poverties, including chronic poverty, in Nepal. Our overall assessment is that chronic poverty is qualitatively distinct from 'ordinary poverty' in Nepal, and as such demands differentiated policy responses. However more systematic research into chronic poverty is required. While there is some useful quantitative data with which we can begin to explore the specific characteristics of chronic poverty, there is a real lack of qualitative data. An obvious way forward is to promote research into chronic poverty which integrates both quantitative and qualitative data and is carried out longitudinally.

Table 1.5 offers an overview of key differences in chronic poverty and vulnerability between ecological zones. This reflects and serves to highlight the significance of spatial determinants of chronic poverty in Nepal. Table 1.6 instead provides an easy reference guide to key indicators for chronic poverty, vulnerability and food insecurity.

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<sup>12</sup> It is important to note that lack of infrastructure and remoteness play a key role in raising food prices (IFPRI 2010)

<sup>13</sup> See footnote 9 for details of the coping strategy index. A number of strategies are identified: opting for less expensive food, borrowing money, spend savings on food, reduce number of meals, out-migration, advanced consumption of seed stocks, households asset sales, remove children from school agricultural asset sales, collect wild food, collect/sell firewood, not eating in a day, begging, selling land. This list represents a continuum from milder to more extreme coping strategies.

**Table 1.5: Key Differences in Chronic Poverty and Vulnerability in Mid-West and Far-West Regions**

| <b>Ecological Zone</b> | <b>Key Criteria/Indicator</b>  |
|------------------------|--|
| <b>Terai</b>           | <ul style="list-style-type: none"> <li>• High population growth rate</li> <li>• Labour migration of men to India</li> <li>• Social exclusion linked to feudal cast system</li> <li>• Health –malaria, waterborne diseases, diarrhoea, respiratory infections, tuberculosis, HIV/AIDS Land tenure issues</li> <li>• Prone to natural disasters (flooding, drought, fire &amp; pest problems)</li> </ul>   |
| <b>Hill</b>            | <ul style="list-style-type: none"> <li>• Moderate to high levels of food insecurity</li> <li>• Semi-remoteness</li> <li>• High levels of income and non-income poverty</li> <li>• Poor infrastructure in more mountainous areas</li> <li>• Limited basic services</li> <li>• Labour migration of men to India and further afield</li> </ul>  |
| <b>Mountain</b>        | <ul style="list-style-type: none"> <li>• High levels of income and non-income poverty</li> <li>• Low levels of literacy particularly for women</li> <li>• High levels of food insecurity –</li> <li>• Under nutrition levels high</li> <li>• Health – waterborne diseases, diarrhoea, HIV/AIDS,<sup>14</sup></li> <li>• Remoteness</li> <li>• Poor infrastructure and limited access</li> <li>• Very limited basic services</li> <li>• Migration, predominantly young men to countries outside south Asia</li> <li>• Prone to natural disasters (landslides, drought, climate change)</li> </ul> |

Source: NPC (2010a).

<sup>14</sup>

According to Nepal's 2010 United Nations General Assembly Special Session (UNGASS) report, over 40% of people living with HIV are seasonal migrants (USAID 2010). Migration routes and night stop locations are therefore potential HIV/AIDS hotspots.

**Table 1.6: Long List of Indicators for Chronic Poverty, Vulnerability and Food Insecurity which are relevant to many countries and especially Nepal**

| IG Criteria     | Indicators   |
|-----------------|--|
| Chronic poverty | <p><b>Severity</b></p> <ul style="list-style-type: none"> <li>• Inflation</li> <li>• Prevalence of poverty (Incidence, density, gap)</li> <li>• Per capita expenditure to meet basic needs</li> <li>• Per capita income</li> <li>• Adult literacy rate(male/female ratio between different group)</li> <li>• Gross production of main crop</li> <li>• Assets(Land holding/ property/live stocks)</li> <li>• Road network</li> <li>• Population growth rate</li> <li>• Population density</li> <li>• Calorie intake</li> </ul> <p><b>Multidimensional</b></p> <ol style="list-style-type: none"> <li>1. Health <ul style="list-style-type: none"> <li>• Life expectancy(male/female ratio)</li> <li>• MMR</li> <li>• CMR</li> <li>• IMR</li> <li>• Immunisation of children U5</li> </ul> </li> <li>2. Nutrition <ul style="list-style-type: none"> <li>• Global hunger Index</li> <li>• Nutritional Status of Children Under 5 Years <ul style="list-style-type: none"> <li>• Stunting</li> <li>• Wasting</li> <li>• Underweight</li> </ul> </li> </ul> </li> <li>3. Access to basic public services <ul style="list-style-type: none"> <li>• Hospital/Health post</li> <li>• School</li> <li>• Functional agriculture/livestock service centre</li> <li>• Bank/cooperatives/saving credit group</li> </ul> </li> <li>4. Standard of living <ul style="list-style-type: none"> <li>• Safe drinking water facilities</li> <li>• Sanitation &amp; hygiene practices</li> <li>• Share of expenditure on food</li> <li>• Access to&amp; type of road</li> <li>• Assets (Land holding/property/live stocks)</li> </ul> </li> <li>5. Women Empowerment Index <ul style="list-style-type: none"> <li>• % women employment other than agriculture</li> <li>• % of girl enrolment in School</li> <li>• Female literacy rate</li> <li>• Female citizenship</li> <li>• Female headed households</li> <li>• Single mean age of female marriage</li> </ul> </li> <li>6. Gender disparity Index</li> <li>7. Employment</li> </ol> <p><b>Long duration</b></p> <ul style="list-style-type: none"> <li>• Trend analysis</li> </ul> <p><b>Remoteness</b></p> <ul style="list-style-type: none"> <li>• Average travel distance to motorable road head</li> <li>• Average travel distance to market (hour)</li> <li>• Distance from motorable roadhead to District Headquarter</li> </ul> |

|                                   |   |
|-----------------------------------|---|
| <b>Vulnerability</b>              | <p><b>Natural disaster</b></p> <ul style="list-style-type: none"> <li>• Frequency and occurrence of landslide, fire, floods drought</li> <li>• Death, injured, affected families</li> <li>• Total loss value in rupees</li> <li>• Climate change</li> <li>• Natural disasters (flooding, drought, landslides etc.)</li> </ul> <p><b>Risk and exposure to health hazard</b></p> <ul style="list-style-type: none"> <li>• Diseases (HIV/AIDS, TB,)</li> <li>• Epidemics (, measles , diarrhoea, fever, typhoid, )</li> <li>• Incidence of ARI among U5 children per 1,000 population</li> <li>• Incidence of diarrhoea among U5 children per 1,000 population</li> <li>• % of malnourished U5 children (Weight/Age)</li> <li>• Exclusion(ethnicity/caste,)</li> <li>• Family with having bonded labour, female headed(single/widow)</li> </ul> <p><b>Resilience (coping)</b></p> <ul style="list-style-type: none"> <li>• Borrowing(money lender, bank, cooperatives)</li> <li>• % of migrant HHs <ul style="list-style-type: none"> <li>• Migration status(within country, India and other)</li> <li>• Months Since Migration &lt;6 months</li> <li>• Months since Migration 6-12 months</li> </ul> </li> <li>• Cases of eating less preferred food, skipping meal,</li> <li>• No. cases of sale of lands and livestock selling</li> <li>• Individual/HHs involved in demeaning job</li> <li>• Social Protection programme(food/cash for work)</li> <li>• Coping strategy index</li> </ul> |
| <b>Food insecurity (security)</b> | <p><b>Food availability</b></p> <ul style="list-style-type: none"> <li>• Land holding size per HHs (or person/ha.)</li> <li>• % of irrigated area</li> <li>• No. livestock per HHs</li> <li>• Major food crop(maize, rice, wheat)</li> <li>• Cropping patterns</li> <li>• Average self-sufficiency months</li> <li>• Agriculture production (tons per ha)</li> </ul> <p><b>Food Access</b></p> <ul style="list-style-type: none"> <li>• Income and sources</li> <li>• Market centres/network</li> <li>• Social Protection programme(food/cash for work)</li> <li>• Private sector entities</li> </ul> <p><b>Food utilization</b></p> <ul style="list-style-type: none"> <li>• Access to safe drinking water</li> <li>• Access to sanitation practice</li> <li>• Feeding practice</li> <li>• Knowledge of basic nutrition and care</li> <li>• Change in food habits</li> </ul>   |

## References

- ADB (2002). Poverty Reduction in Nepal: Issues, Findings, and Approaches. Manila: Asian Development Bank Available at [http://www.adb.org/Documents/Reports/Poverty\\_Reduction\\_Nep/poverty\\_analysis.pdf](http://www.adb.org/Documents/Reports/Poverty_Reduction_Nep/poverty_analysis.pdf)
- ADB (2006). Poverty and Development Indicators: Statistics, Economics and Research Department. 2006.Glossary. Available at [www.adb.org/Statistics/Poverty/glossary.asp](http://www.adb.org/Statistics/Poverty/glossary.asp)
- ADB/DFID/ILO (2009). Country Diagnostic Studies Highlights. Nepal Critical Development Constraints. Available at <http://www.adb.org/Documents/Studies/Nepal-Critical-Development-Constraints/Highlights-Nepal-Critical-Development-Constraints.pdf>
- Alkire S, and Santos M. E. (2010). Acute Multidimensional Poverty: A New Index for Developing Countries. Oxford Poverty and Human Development Initiative (OPHI). Working Paper No. 38.
- Bhatta, S and Sharma, S. (2006). The Determinants and Consequences of Chronic and Transient Poverty in Nepal. CPRC Working Paper 66.
- Baulch, B. and Masset, E. (2003). Do Monetary and Non-monetary indicators tell the same story about chronic poverty?, *World Development*, 31 (3):441-453.
- Bennett, L. (2005). Gender, Caste and Ethnic Exclusion in Nepal: Following the Policy Process from Analysis to Action. Mimeo.
- Bird, K., et al. (2010). Chronic Poverty and Remote Rural Areas. CPRC Working Paper 13.
- CBS (1996). Nepal Living Standards Survey (NLSS 1) 1995/96, Central Bureau of Statistics, National Planning Commission, Kathmandu
- CBS (2004). Nepal Living Standards Survey (NLSS 2) 2003/04, Central Bureau of Statistics, National Planning Commission, Kathmandu
- CBS (2005). Poverty Trends in Nepal (1995-96 and 2003-04). Central Bureau of Statistics, National Planning Commission, Kathmandu
- Chronic Poverty Research Centre (CPRC) (2004) Chronic Poverty Report 2004-05. Manchester: CPRC, University of Manchester.
- Devereux, S. (1993). 'Goats before ploughs, dilemmas of household response sequencing during food shortages', *IDS Bulletin*, 24 (4)
- Devereux D. et al. (2006). Vulnerability to Chronic Poverty and Malnutrition in Malawi. A Report for DFID Malawi.
- DFID (2001). 'Poverty: Bridging the Gap – Guidance notes.' DFID Issues paper: Department for International Development, London.
- DFID/World Bank (2006). Unequal citizens, Gender, Caste and Ethnic exclusion in Nepal, Summary, DFID and WB, Kathmandu, Nepal. Summary available at <http://siteresources.worldbank.org/EXTSOCIALDEV/Resources/3177394-1168615404141/NepalGSEASummaryReport-part1.pdf>
- FAO (2006). Food Security. Policy Brief June 2006, Issue 2.
- Hulme D. et al. (2001). Chronic Poverty: Meanings and Analytical Frameworks. CPRC Working Paper 2.
- Hulme, D. and Shepherd, A. (2003). Conceptualising Chronic Poverty. *World Development* Vol. 31, No 3, pp 403-423.
- Hunzal, K., Gerlitz, J. and Hoermann, B. (2011). The Specificities of Mountain Poverty. Regional Analysis of Mountain Poverty in Bhutan, India and Nepal. Draft.
- ICIMOD (2010). Gender Perspectives in Mountain Development. Sustainable Mountain Development No 57. Available at [http://www.icimod.org/publications/uploads/tmp/icimod-gender\\_perspectives\\_in\\_mountain\\_development.pdf](http://www.icimod.org/publications/uploads/tmp/icimod-gender_perspectives_in_mountain_development.pdf)

IFPRI (2010). Food and Nutritional Security in Nepal. A Stocktaking Exercise. Kathmandu: USIAD.

Jalan, J. and Ravallion M. (2000). Is transient poverty different? Evidence for rural China. *Journal of Development Studies*, 36(6), 82–99.

Kabeer, N. (2010). Alternative accounts of chronic disadvantage: Income deficits versus food security. *What Works for the Poorest?: Poverty Reduction Programmes for the World's Extreme Poor* D. Hulme, Practical Action

Ministry of Agriculture and Cooperatives (2010). Report on Rapid Emergency Food Security Assessment (EFSA) Far and Mid-West Hills and Mountains, Nepal. Available at <http://home.wfp.org/stellent/groups/public/documents/ena/wfp185147.pdf>

McCulloch, N. and Calandrino M. (2003). Vulnerability and Chronic Poverty in Rural Sichuan. *World Development* Vol. 31, No 3, pp 611-628.

Ministry of Finance (MoF). (2011) Economic Survey 2010-2011. Kathmandu: Government of Nepal.

NPC (2010a). The Food Security Atlas of Nepal. Government of Nepal.

NPC (2010b). Poverty Measurement Practices in Nepal & Number of Poor, Government of Nepal.

Prowse, M. (2003). Towards a Clearer Understanding of 'Vulnerability' in Relation to Chronic Poverty. CPRC Working Paper No. 24.

Ravallion, M., Chen, S. and Sangraula P. (2009). Dollar a day Revisited, *World Bank Economic Review* Volume 23, Number 2-2009, pages 163-184

UNDP (2004). Nepal Human Development Report 2004. Kathmandu: UNDP,

UNDP (2010). The Real Wealth of Nations: Pathways to Human Development. New York: UNDP

USAID (2010). HIV/AIDS Health Profile. Available at [http://www.usaid.gov/our\\_work/global\\_health/aids/Countries/asia/nepal\\_profile.pdf](http://www.usaid.gov/our_work/global_health/aids/Countries/asia/nepal_profile.pdf)

WFP/CBS/WB (2006). Small Area Estimation of Poverty, Caloric Intake and Malnutrition in Nepal, Kathmandu.

Wagle, U. (2005). Multidimensional Poverty Measurement with Economic Well-being, Capability, and Social Inclusion: A Case from Kathmandu, Nepal. *Journal of Human Development* Vol. 6, No 3.

Watts, M. 1983. *Silent Violence: Food, Famine and Peasantry in Northern Nigeria*. Berkeley: University of California Press.

World Bank (2000). World development report 2000/2001 – attacking poverty. Washington D.C.: World Bank. (available online <http://www.worldbank.org/poverty/wdrpoverty>).

## Report 2 – Identification of indicators to measure chronic poverty and vulnerability in Nepal

### 2.1 Study Indicators

In determining which indicators are required for this Inclusive Growth study it is important to take into account the multidimensional nature of poverty and food security, and the influence of vulnerability. We have chosen to include indicators that are commonly used in many developing countries to quantify and qualify the amount and depth of poverty as well as ones which may be Nepal specific. We have grouped the indicators into chronic poverty, vulnerability and food insecurity following Table 1.6 but national data from Nepal were not available on all the indicators listed in that Table. So within chronic poverty we have differentiated headings of severity (10 indicators), health (2), nutrition (5), access to basic services (2), standard of living (9), women's empowerment (7), gender disparity (1) and remoteness (3). Vulnerability has been divided into natural disasters (5), risk and exposure to health hazard (8) and resilience/coping (2) headings. For analytical purposes because the number of indicators under some headings are small, chronic poverty headings have been organised under five dimensions of severity (n=10), health and nutrition (n=7), access to basic services and standard of living (n=11), women's empowerment and gender disparity (n=8) and remoteness (n=3). Vulnerability has been organised under two dimensions of natural disasters (n=5) and risk and resilience (n=11). Food insecurity (n=4) has been analysed separately as well as part of vulnerability. So, in total there are 38 chronic poverty indicators, 19 vulnerability indicators including 4 food insecurity indicators (see Table 2.1).

#### Chronic Poverty

- **Severity.** These include monetary indicators of household well-being, particularly food and non-food expenditure. These measures are primarily used by economists, but many NGOs and development agencies use a variety of consumption and income measures, including non-monetary proxies of household well-being such as ownership of productive assets or durables. Here we propose primarily using the Nepal poverty line (divided into food-poor and non-food poor) based on the cost of basic needs as well as the direct calorie intake method. Also included in this dimension are remittances, adult illiteracy, predicted population growth between 2001 and 2021 and population density
- **Health.** The health of household members has been examined through two indicators of child mortality and child immunisation which provide information on the longer term well-being of households
- **Nutrition.** Nutrition status of children was obtained from the extent of stunting (height-for-age, a measure of chronic malnutrition), wasting (weight-for-height, a measure of acute malnutrition) and underweight (weight-for-age, a measure of both acute and chronic malnutrition). In adults Body Mass Index (weight (kg)/height (m)<sup>2</sup>) <18.5 has been used to defined chronic energy deficiency and haemoglobin levels as a measure of anaemic status
- **Access to basic public services.** Two indicators are used here, the one a combined measure which includes presence of security and agricultural extension services and developmental activities and the other on access to health institutions

- **Standard of living and remoteness.** Chronic poverty is associated with lack of amenities and assets. We propose focussing on indicators, two of which (safe drinking water and sanitation) also relate to health and well-being
- **Women's empowerment.** Indicators used under this heading include literacy status and years of schooling, female headed households and women's occupations
- **Gender disparity index.** The gender disparity index has been included in these analyses
- **Remoteness.** Three remoteness indicators have been used involving the time it takes to reach a health post, road head and a market

### Vulnerability

- **Natural disasters.** Natural hazards such as landslides and earthquakes have been included as well as the climate vulnerability index
- **Risk and exposure to health hazards.** Eight variables have been used five of which cover infectious disease
- **Resilience (coping).** Information on loans and migration from abroad have been used

### Food Insecurity

Four variables were used including two variables on agricultural land and area of irrigated land.

**Table 2.1: List of Data Categories and Indicators**

| Chronic Poverty | Headings                        | Indicator                                      |
|-----------------|---------------------------------|--|
|                 | Severity                        | Poverty (cost of basic needs method) Total (%) |
|                 |                                 | Poverty (calorie method) Total (%)             |
|                 |                                 | Poverty – food poor (%)                        |
|                 |                                 | Poverty – non-food poor (%)                    |
|                 |                                 | Income male                                    |
|                 |                                 | Income female                                  |
|                 |                                 | Adult illiteracy rate (%)                      |
|                 |                                 | Remittances                                    |
|                 |                                 | Population growth (2001 to 2021)               |
|                 |                                 | Population density                             |
|                 | Health                          | Child mortality – all (%)                      |
|                 |                                 | Child immunisation – no (%)                    |
|                 | Nutrition                       | Child stunting (%)                             |
|                 |                                 | Child underweight (%)                          |
|                 |                                 | Child wasting (%)                              |
|                 |                                 | Maternal BMI <18.5 (%)                         |
|                 |                                 | Maternal haemoglobin – anaemia (%)             |
|                 | Access to basic public services | Health institutions/1000 population            |
|                 |                                 | Access to basic services                       |
|                 | Standard of living              | Electricity – no (%)                           |
|                 |                                 | Drinking water not MDG (%)                     |
|                 |                                 | Drinking water not MDG and > 30 minutes (%)    |
|                 |                                 | Sanitation not MDG (%)                         |
|                 |                                 | Floor construction – poor (%)                  |
|                 |                                 | Wall construction – poor (%)                   |
|                 |                                 | Roof construction – poor (%)                   |
|                 |                                 | Cooking – poor (%)                             |

|                      |  |  |
|----------------------|--|--|
|                      |  | Assets – none (%)                          |
| Chronic Poverty      | Women's empowerment & gender disparity | Literacy status female (%)                 |
|                      |  | Years of schooling female (years)          |
|                      |  | Female headed (%)                          |
|                      |  | Women participation in local elections     |
|                      |  | Women in professional occupations          |
|                      |  | Women in administrative occupations        |
|                      |  | Gender-related development index           |
|                      | Remoteness                             | Remoteness health post > 60 minutes (%)    |
|                      |  | Remoteness road head > 60 minutes (%)      |
|                      |  | Remoteness market > 60 minutes (%)         |
| <b>Vulnerability</b> | Natural disasters                      | Landslide                                  |
|                      |  | Drought                                    |
|                      |  | Earthquake (mean magnitude)                |
|                      |  | Flooding                                   |
|                      |  | Climate vulnerability index                |
|                      | Risk & exposure to health hazard       | Child (<5 years) ARI/1000 population       |
|                      |  | Child (<5 years) Diarrhoea/1000 population |
|                      |  | Malaria/1000 population                    |
|                      |  | Tuberculosis/1000 population               |
|                      |  | HIV hotspots                               |
|                      |  | Caste – Dalit (%)                          |
|                      |  | Rural (%)                                  |
|                      |  | Dependency ratio (%)                       |
|                      | Resilience (coping)                    | Loans (%)                                  |
|                      |  | Migrants – from abroad (%)                 |
|                      | Food insecurity                        | Agricultural land (persons per hectare)    |
|                      |  | Area of Irrigated land (%)                 |
|                      |  | Food insecurity summer                     |
|                      |  | Food insecurity winter                     |

## 2.2 Data sources used

The main data sources used are shown below:-

1. NLSS 2003/4 only database with expenditure so this is the main database.
2. The Food Security Atlas of Nepal provides information at the district level for many of the indicators and these have been obtained from a number of sources as detailed in Table 3.1.
3. DHS 2006 has no poverty line data and no mountain districts in Far-West (F-W) and Mid-West (M-W) so only 13 of 15 areas covered (5 regions x 3 ecological zones), but does have information covering nutritional status of child and mother and some socio-economic indicators.
4. UNICEF 2009 nutrition study from M-W and F-W regions, covering 3 districts in each. From M-W, Rolpa, Kalikot and Mugu all mountain, F-W, Bajhang (mountain), Kailali and Kanchanpur (both terai). Some district level comparisons have been made between results from this study and the other databases.

No database has information covering all the indicators referred to in Table 2.1.

## Report 3 – Description of the geographic and social distribution of chronic poverty and vulnerability in the Mid- and Far-West regions vis-à-vis other regions

### 3.1 Introduction and methods of analysis

In total 57 indicators have been used of which 38 deal with chronic poverty, 15 with vulnerability and 4 with food insecurity. Within chronic poverty the analyses have focussed on 5 dimensions of severity (10 indicators), health and nutrition (7 indicators), access to basic services and standard of living (11 indicators), women's empowerment and gender disparity (8 indicators) and remoteness (3 indicators). Vulnerability has been organised under two dimensions of natural disasters (5 indicators) and risk and resilience (11 indicators). Food insecurity (4 indicators) has been analysed separately as well as part of vulnerability (Table 3.1).

Given the heterogeneity in the compilation of the indicators, the analyses for Output 3 have used three approaches:-

- (a) ranking of regions with each region being ranked from 1 to 5 (0.5 if tied) with 1 being the best ranked region and 5 the worst ranked for each of the 57 indicators,
- (b) a zero-to-one transformation in which the original 5 regional values of each indicator were transformed into 5 scores (d values) ranging between 0 and 1 (where 0 is the best and 1 is the worst region). Where a higher value of the indicator refers to a less developed region (Group 1 in Table 3.2),  $d_{ij} = (x_{ij} - \min_j) / (\max_j - \min_j)$ , and where a higher value of the indicator refers to a more developed region (Group 2 in Table 3.2),  $d_{ij} = (\max_j - x_{ij}) / (\max_j - \min_j)$  where  $x_{ij}$  is the value of the  $j^{\text{th}}$  indicator in the  $i^{\text{th}}$  region, and  $\max_j$  and  $\min_j$  denote the maximum and minimum values respectively over the 5 regions of the  $j^{\text{th}}$  indicator. The advantage of the zero-to-one transformation is that all d values are free from the unit of measurement. Then mean composite indices for each region by dimension were calculated by summing up all the d values and a total mean composite index for all dimensions together was calculated for each region. These two approaches are complimentary, the ranking approach orders the regions while the d values and the composite indices reflect the magnitude of the differences between regions and
- (c) Poverty Gap, Poverty Index and Squared Poverty Gap Index. The Poverty Gap (PG) measures the shortfall in consumption of each household below the poverty line (defined by NLSS as the cost of basic needs, CBN) setting a zero gap for all those households above the CBN. It is usually expressed as the average amount per household. The Poverty Gap Index (PGI) expresses the PG as a percentage of CBN and provides a measure of the depth of poverty and PGI measures how far, on average, a household falls below the poverty line.

$$\text{PGI} = 1/n (\sum(\text{CBN} - y_i) / \text{CBN})$$

Where  $y_i$  is the actual consumption of each household. The larger the PGI the greater the poverty gap.

The Squared Poverty Gap Index (SPGI) is a measure of the degree of inequality among the poor themselves and is the weighted sum of the individual household poverty gap where the weights are the proportionate poverty gaps themselves (i.e. the square). The act of squaring the poverty gap gives greater weight to the poverty gap of the poorest houses since their poverty gap will be larger. The larger the SPGI the greater the degree of inequality.

Using NLSS, three PGIs were computed, the overall poverty gap index, the food PGI and non-food PGI, as well as the three squared indices.

## **3.2 Results**

### **3.2.1 Introduction**

Information on all 57 indicators is presented in Table 3.1 for the whole country as well as by each region separately. Most of the indicators were recorded in percentages but some, for example morbidity, were measured as the number of cases per 1000 population, while others (e.g. landslides) were recorded on an ordinal scale where 1 is low likelihood and 5 is high likelihood. Based on these 57 indicators, the picture for the country as a whole indicates that about 40% of households were living in poverty and over 50% of adults were illiterate. Long term undernutrition was evident and over 55% of children were stunted and 45% were underweight; over a third of mothers were anaemic. Over 55% of households did not have electricity and sanitation facilities did not meet the millennium development goals in over 54% of households; nearly 80% of households cooked using wood, dung or charcoal. Literacy status of women was only 30% and only 26% of women were in professional or administrative occupations; only 20% of women participated in local elections. The vast majority of the population live in rural areas many of which are in remote areas and over 40% lived more than 60 minutes from a market.

The risk of natural disasters such as landslides, drought and earthquakes was moderate to high. Acute respiratory infection and diarrhoea were very common in under 5 year old children. Nearly two thirds of households had some form of loan and about 10% of households received remittances. Food insecurity was higher in summer than winter.

There were highly significant regional differences for all these indicators and this inter-regional variation is examined in the next two sections.

### **3.2.2 Ranking**

The ranked data are presented in Table 3.3. Poverty as defined by cost of basic needs was about 20% higher in the Mid- and Far-West (M&FW) regions than in Central and Western regions. Food-poverty was highest in the Far-West (39.5%), while non-food poverty alone was highest in the Mid-West (46.5%). Adult illiteracy was between 5% and 10% higher in the M&FW regions while population density in these two regions was nearly half that found in the other regions. Childhood stunting and underweight was about 5% higher in the M&FW, while wasting was highest in the Central region. The prevalence of maternal anaemia varied by regions and was highest in the M&FW and lowest in the Eastern region (difference of about 10%). Standard of living was generally worse in the M&FW regions with, for example, about 75% of households not having electricity compared with 67% in the Eastern region and under 45% in Central and Western regions. Gender inequality was generally worse in the M&FW regions; women in the M&FW were twice as likely to be

illiterate than women living in the Western region and women in the M&FW regions only had, on average, only about 1 year of schooling compared with about 2 years in the other regions. The gender-related development index was generally worse for females in these two regions and fewer M&FW women were employed in professional or administrative positions. Households in the M&FW regions tended to be more remote and about 50% lived more than 60 minutes away from a health centre compared with 30% to 40% in other regions.

For all five dimensions of chronic poverty the M&FW regions were significantly worse, particularly so for the severity dimension. When the percentage of the maximum total rank for each dimension was calculated by region (higher percentages indicate greater chronic poverty), the M&FW regions both scored 84% on severity compared with 47%, 45% and 40% for Eastern, Central and Western regions, respectively (Figure 3.1). Remoteness was very high in the Far-West (97%) and less so in the Mid-West (83%) but well above remoteness values of 53%, 47% and 20% for Eastern, Western and Central regions, respectively. For each dimension the M&FW regions had much worse chronic percentages (range 78% to 97%) whereas in the other three regions the percentages ranged only between 20% and 66%.

Vulnerability was examined in two ways (a) just natural disasters and risk and resilience dimensions (n=15 indicators) and (b) with the addition of the four food insecurity indicators (n=19 indicators). When vulnerability was examined without food insecurity indicators the M&FW regions were worst (more so the Far- than Mid-West, Table 3.3 and Figure 3.2) but there was a 4% difference between the Mid-West (67%) and Central (63%) regions in the extent of vulnerability. Food security was worse in M&FW regions, especially in the Mid-West (85%) compared with 70% in the Far-West and 60%, 55% and 50% in the Central, Eastern and Western regions respectively. When food insecurity was included as part of vulnerability the M&FW regions had very similar percentages (about 72%) which were about 10% worse than the next region (Central).

When all 57 indicators were combined the M&FW regions were suffering from about 80% chronic poverty and vulnerability compared with about 50% in the Eastern and Central regions and 40% in the Western region (Figure 3.3). A post-hoc test on the total rank scores revealed that the M&FW regions were very significantly worse (mean of about 4) than the other three regions in chronic poverty (means range from 2.0 to 2.6) such that the 5 regions could be split into two homogenous groups of M&FW regions together and Eastern, Central and Western regions together.

### **3.2.3 Composite index**

Ranking orders the variables from best (rank 1) to worst (rank 5), but it does not reflect the magnitude of the difference between regions. For example the difference in poverty between the Mid-West and the other regions ranged from 4.2% (Far-West) to 24.5% (Western). For stunting, the Mid-West was again the worst region but the range was only from 2.2% (Far-West) to 8.2% (Eastern). In addition the ranking system forces a 1 unit difference between each rank whereas the actual difference between regions varied. This can be illustrated by comparing the difference between ranks 3 and 2 for poverty and

stunting; for poverty the difference was 9% (41.9% - 32.9%), whereas for stunting the difference was only 0.3% (53.6% - 53.3%).

| Indicator   | Eastern | Centra<br>l | Western | Mid-<br>West | Far-<br>West |
|---|---------|-------------|---------|--------------|--------------|
| Poverty (%)                                       | 41.9    | 32.9        | 32.6    | 57.1         | 52.9         |
| Ranking   | 3       | 2           | 1       | 5            | 4            |
| Difference between Mid-West and other regions (%) | 15.2    | 24.2        | 24.5    | -            | 4.2          |
| Stunting  | 52.1    | 53.3        | 53.6    | 60.3         | 58.1         |
| Ranking   | 1       | 2           | 3       | 5            | 4            |
| Difference between Mid-West and other regions (%) | 8.2     | 7.0         | 6.7     | -            | 2.2          |

The zero-to-one transformation (composite index) quantifies the magnitude of the difference between regions. It sets the best region a value of 0 and the worst region a value of 1. The poverty composite indices for the other three regions are calculated as follows:-

1. Mid-West = 1 and Western = 0 composite indices.
2. Difference between maximum (Mid-West) and minimum region (Western) = (57.1% - 32.6%) = 24.5.
3. Region – minimum region, Eastern - Western = 41.9 - 32.6 = 9.3, Central – Western 32.9 - 32.6 = 0.3, Far-West - Western = 52.9 - 32.6 = 20.3
4. Composite index for Eastern region = 9.3/24.5 = 0.38
5. Composite index for Central region = 0.3/24.5 = 0.01
6. Composite index for Far-West region = 20.3/24.5 = 0.83

| Indicator       | Eastern | Centra<br>l | Western | Mid-<br>West | Far-<br>West |
|-----------------|---------|-------------|---------|--------------|--------------|
| Poverty (%)     | 41.9    | 32.9        | 32.6    | 57.1         | 52.9         |
| Composite index | 0.38    | 0.01        | 0       | 1            | 0.83         |

The zero-to-one scoring transformations are presented in Table 3.4 together with the total composite indices for each dimension. For the five chronic poverty dimensions the M&FW regions had significantly worse means (all  $p < 0.001$ ) than the other three regions but the M&FW regions were not significantly different from each other. In order to make comparisons between dimensions the total composite scores for each dimension as a percentage of the maximum have been calculated. For example the severity dimension total composite score for the Mid-West is 8.43. The maximum total score for that dimension is 10 (as there are 10 indicators), so the Mid-West had a percentage of 84.3% out of a maximum of 100% on that dimension.

Figure 3.4 presents the percentages for each dimension and the M&FW regions showed significantly greater chronic poverty across all dimensions with percentages ranging from 78.2% to 94.0% compared with the other three regions (range 23.2% to 55.7%). The three dimensions which showed greatest differences between M&FW and other regions were severity, remoteness and women's empowerment and gender disparity. The M&FW regions

both scored about 85% on severity, more than twice as worse as the next region (Eastern, 33%). For remoteness the M&FW regions scored over 93% much higher than the next region, Eastern with 56%; women's empowerment and gender disparity was worst in the Far-West (86%) and Mid-West (77%) followed by Central (40%), Eastern (27%) and Western regions (14%).

For both natural disasters and risk and resilience indicators there was no significant variation in total composite scores by region and overall vulnerability indicators did not differ regionally (see Table 3.4 and Figure 3.5) although risk and resilience indicators were about 10% higher in the M&FW regions. Food insecurity was worse, but not significantly, in the M&FW regions (81% and 70%, respectively) than the other regions (Central, 47%, Western, 24% and Eastern, 18%). When vulnerability and food insecurity variables were combined the M&FW regions were significantly worse than the other three regions which was mainly due to the addition of the food insecurity indicators.

When all the 57 indicators were combined, the M&FW regions had identical means (0.76) which were over twice as worse as the next region (0.37, Eastern). Figure 3.6 shows that the M&FW regions were about 40% worse, more than double, than the other regions. In keeping with the ranking findings, the 5 regions could be split into two homogenous groups of M&FW regions together and Eastern, Central and Western regions together.

### **3.2.4 Poverty Gap and Squared Poverty Gap Indices**

The poverty gap and squared poverty gap analyses focus only on poverty as defined by cost of basic needs and so they do not reflect the multidimensionality of chronic poverty.

The mean Poverty Gaps (overall, food and non-food) by region are shown in Tables 3.5 to 3.7. There was highly significant heterogeneity between regions. Post-hoc tests revealed that the Mid-West had worse mean than the Eastern, Central and Western regions, but not significantly different from the Far-West region; the Far-West region had worse means than the Central and Western regions but not the Eastern region (Table 3.5). For Food poverty gap the M&FW regions had worse means than Eastern, Central and Western regions (by about 40%) but were not significantly different from each other (Table 3.6). For non-food poverty the Mid-West had a significantly worse mean compared with the other regions (Table 3.7).

The three Poverty Gap indices (overall, food and non-food) were calculated for each household and the mean PGIs by region are presented in Tables 3.8 to 3.10. For all three indices there was highly significant heterogeneity between regions ( $p < 0.001$ ). For the overall PGI, the M&FW regions had the highest (worst) means and post-hoc test revealed that the Mid-West had a significantly worse mean than the Eastern, Central and Western regions but was not significantly different to the Far-West region. The Far-West was significantly worse than the Central and Western regions. For food poverty the M&FW regions had significantly worse means than the other three regions and there was no significant difference between Mid- and Far-West means (Table 3.9). For non-food poverty the Mid-West had the worst mean but the Far-West did not differ significantly from the other regions (Table 3.10). For SPGI (Tables 3.11 to 3.13) overall SPGI in the Mid-West region was significantly worse than Central and Western regions, while for food SPGI Mid-West was worse than the other

regions (Table 3.12). For non-food SPGI, Eastern and Mi-West regions were the worst (Table 3.13).

### **3.3 Conclusions**

**3.3.1** A total of 57 indicators were used in these analyses, of which 38 indicators dealt with chronic poverty, and the other 19 indicators with vulnerability. Four of the vulnerability indicators dealt with food insecurity and vulnerability was analysed with and without the food insecurity indicators.

**3.3.2** The 38 chronic poverty indicators were grouped into 5 dimensions of severity, health and nutrition, access to basic services and standard of living, women's empowerment and gender disparity and remoteness. Vulnerability was grouped into 3 dimensions of natural disasters, risk and resilience and food insecurity.

**3.3.3** There were highly significant regional differences for all these indicators.

**3.3.4** The ranking analyses indicated that the M&FW regions had significantly more chronic poverty (all 5 dimensions combined) than the other three regions but there was no significant difference in chronic poverty between the Mid- and Far-West regions. In percentage terms the M&FW regions had over 82% chronic poverty compared with between 39% and 49% in the other three regions i.e. the M&FW regions were between 33% and 43% worse than the other regions.

**3.3.5** The ranking analyses also indicated that within the chronic poverty dimensions severity was the largest differentiator between the M&FW and the other regions. Both M&FW regions scores 84% on this dimension compared with only between 40% and 47% for the other regions.

**3.3.6** The ranking analyses revealed that there was much less variation between regions in vulnerability. When food insecurity was excluded the M&FW regions were worst but by less than 5% from the next worse region. Food insecurity was worse in the Mid-West (85%) than Far-West (70%) while food insecurity in the other regions was better ranging between 35% and 60%. When food insecurity was included as part of vulnerability the M&FW regions were very similar with just over 71% vulnerability and the difference from the other regions increased from 4% to 9%.

**3.3.7** When all 57 ranked indicators were combined the M&FW regions were suffering from about 80% chronic poverty and vulnerability compared with about 50% in the Eastern and Central regions and 40% in the Western region and 5 regions could be split into two homogenous groups of M&FW regions together and Eastern, Central and Western regions together.

**3.3.8** The results from the composite index analyses, are broadly in agreement with the ranking analyses, but provide a more comprehensive and quantitative understanding of the variation between regions. Chronic poverty (combination of the 5 dimensions) was identical in the M&FW regions (over 81%) and significantly worse than the other regions (Eastern, 35%, Central 29% and Western 21%) i.e. the M&FW regions were over 46% worse than the

next region. The M&FW regions showed significantly greater chronic poverty across all dimensions with percentages ranging from 78% to 94% compared with the other three regions (range 23% to 56%).

**3.3.9** All five composite index dimensions showed marked differences between M&FW and the other three regions, particularly so for severity, remoteness and women's empowerment and gender disparity. The M&FW regions both scored about 85% on severity, more than twice as worse as the next region (Eastern, 33%). The M&FW regions scored over 93% for remoteness much higher than the next region, Eastern with 56%. Women's empowerment and gender disparity was worst in the Far-West (86%) and Mid-West (77%) followed by Central (40%), Eastern (27%) and Western regions (14%).

**3.3.10** The composite analyses did not reveal any significant regional differences in the three vulnerability dimensions although risk and resilience indicators were about 10% higher in the M&FW regions. Food insecurity was worse, but not significantly, in the M&FW regions (81% and 70%, respectively) than the other regions (Central, 47%, Western, 24% and Eastern, 18%). Vulnerability without food insecurity did not vary significantly between regions but significant regional variation was found when food insecurity was included and overall the M&FW regions had 64% vulnerability compared with between 36% and 44% in the other regions.

**3.3.11** When all 57 composite indicators were combined the M&FW regions were suffering from about 75% chronic poverty and vulnerability compared with 37% and 34% in the Eastern and Central regions, respectively and 22% in the Western region. The composite analyses provided greater differentiation between M&FW regions and the other 3 regions than the ranking analysis. In keeping with the ranking findings when all 57 indicators were used, the 5 regions could be split into two homogenous groups of M&FW regions together and Eastern, Central and Western regions together.

**3.3.12** The poverty gap analyses revealed that the mean overall gap and index and food poverty gap and index were not significantly different between the M&FW regions and these two regions had higher gaps and indices than the other regions. These findings are in agreement with the ranking and composite analyses. However the Mid-West region's non-food poverty gap was worse than all other regions and its non-food poverty gap index was significantly worse than the other regions (except for the Eastern region) which is also in agreement with the ranking and composite analyses. The Far-West non-food poverty index was not significantly different from Eastern, Central and Western indices. The squared poverty gap index analyses revealed that the Mid-West region has the greatest poverty inequality overall which was significantly worse than the Central and Western regions. Food poverty inequality was greatest in the M&FW regions.

**3.3.13** This report has been based on cross-sectional data collected from a number of sources. Without longitudinal (panel) data it is not possible to describe the duration of chronic poverty and vulnerability in the M&FW regions in particular, and the country as a whole.

**Table 3.1: Variation in indicators by region** Sources: CBS 2002 National Sample Census of Agriculture 2001/2 Central Bureau of Statistics, Nepal, NDHS 2001 Nepal Demographic and Health Survey 2001, NDHS 2006 Nepal Demographic and Health Survey 2006 NLSS 2003/4 National Living Standard Survey 2003/4, NSET 2009 Earthquakes in Nepal, National Seismology Center 2009, UNDP 2009 Nepal Human Development Report 2009, State transformation and human development, WFP 2006 Comprehensive Food Security and Vulnerability Analysis 2006, WFP 2008 Multi Agency Flood Impact Assessment 2008, WFP 2009 A Sub-Regional Hunger Index for Nepal 2009, WFP 2010 VAM data 2010

| CHRONIC POVERTY              | Dimension                               | Indicator                                      | Eastern                                    | Central | Western | Mid-West | Far-West | Total |      |
|------------------------------|---|--|--|---------|---------|----------|----------|-------|------|
| CHRONIC POVERTY              | Severity                                | Poverty (cost of basic needs method) Total (%) | 41.9                                       | 32.9    | 32.6    | 57.1     | 52.9     | 39.0  |      |
|                              |   | Poverty (calorie method) Total (%)             | 39.2                                       | 40.7    | 39.5    | 49.3     | 46.2     | 42.5  |      |
|                              |   | Poverty – food poor (%)                        | 24.9                                       | 24.5    | 16.0    | 34.5     | 39.5     | 25.1  |      |
|                              |   | Poverty – non-food poor (%)                    | 34.1                                       | 21.7    | 28.6    | 46.5     | 35.1     | 29.8  |      |
|                              |   | Income male                                    | 0.46                                       | 0.49    | 0.47    | 0.41     | 0.41     | 0.45  |      |
|                              |   | Income female                                  | 0.33                                       | 0.35    | 0.38    | 0.33     | 0.35     | 0.35  |      |
|                              |   | Adult illiteracy rate (%)                      | 49.7                                       | 52.3    | 47.1    | 57.5     | 58.3     | 51.4  |      |
|                              |   | Remittances                                    | 14.6                                       | 11.1    | 9.6     | 13.4     | 9.8      | 11.8  |      |
|                              |   | Population growth (2001 to 2021)               | 43.64                                      | 51.06   | 44.44   | 47.35    | 51.53    | 47.60 |      |
|                              |   | Population density                             | 228  | 528     | 192     | 96       | 117      | 257   |      |
|                              | Health                                  | Child mortality – all (%)                      | 17.8                                       | 23.0    | 20.2    | 28.4     | 26.8     | 22.8  |      |
|                              |   | Child immunisation – no (%)                    | 2.7  | 6.3     | 4.1     | 9.6      | 4.7      | 5.4   |      |
|                              | Nutrition                               | Child stunting (%)                             | 52.1                                       | 53.3    | 53.6    | 60.3     | 58.1     | 55.1  |      |
|                              |   | Child underweight (%)                          | 42.6                                       | 44.2    | 41.4    | 50.5     | 50.5     | 45.3  |      |
|                              |   | Child wasting (%)                              | 7.2  | 8.7     | 6.8     | 7.6      | 8.2      | 7.7   |      |
|                              |   | Maternal BMI <18.5 (%)                         | 21.5                                       | 23.7    | 19.4    | 24.0     | 30.1     | 23.4  |      |
|                              |   | Maternal haemoglobin – anaemia (%)             | 29.3                                       | 34.6    | 33.0    | 39.5     | 42.0     | 35.0  |      |
|                              | Access to basic public services         | Health institutions/1000 population            | 2.8  | 3.1     | 3.0     | 2.1      | 2.2      | 2.7   |      |
|                              |   | Access to basic services                       | 3.5  | 3.4     | 3.4     | 3.0      | 3.1      | 3.3   |      |
|                              | Standard of living                      | Electricity – no (%)                           | 66.7                                       | 43.8    | 44.9    | 74.8     | 79.7     | 55.4  |      |
|                              |   | Drinking water not MDG (%)                     | 16.7                                       | 14.5    | 12.6    | 35.7     | 24.3     | 17.8  |      |
|                              |   | Drinking water not MDG and > 30 minutes (%)    | 17.0                                       | 15.2    | 13.6    | 37.1     | 27.5     | 18.7  |      |
|                              |   | Sanitation not MDG (%)                         | 57.2                                       | 49.5    | 43.6    | 72.6     | 75.4     | 54.6  |      |
|                              |   | Floor construction – poor (%)                  | 77.8                                       | 66.9    | 68.5    | 84.9     | 87.3     | 73.3  |      |
|                              |   | Wall construction – poor (%)                   | 29.7                                       | 39.8    | 58.6    | 71.1     | 59.1     | 46.2  |      |
|                              |   | Roof construction – poor (%)                   | 51.1                                       | 18.2    | 21.4    | 52.0     | 12.3     | 29.9  |      |
|                              |   | Cooking – poor (%)                             | 91.3                                       | 66.6    | 79.3    | 91.1     | 94.3     | 79.6  |      |
|                              |   | Assets – none (%)                              | 30.6                                       | 21.4    | 23.5    | 22.4     | 35.1     | 25.0  |      |
|                              |   | Women's empowerment & gender disparity         | Literacy status female (%)                 | 34.9    | 32.2    | 40.0     | 20.5     | 19.3  | 30.5 |
|                              | Years of schooling female (years)       |  | 2.1  | 1.8     | 2.2     | 1.1      | 1.0      | 1.7   |      |
|                              | Female headed (%)                       |  | 17.3                                       | 15.7    | 28.7    | 20.0     | 20.8     | 19.6  |      |
|                              | Women participation in local elections  |  | 19.4                                       | 19.2    | 21.7    | 18.6     | 19.7     | 19.7  |      |
|                              | Women in professional occupations       |  | 16.8                                       | 16.3    | 19.2    | 15.3     | 12.4     | 16.3  |      |
|                              | Women in administrative occupations     |  | 12.1                                       | 10.1    | 13.3    | 8.9      | 7.4      | 10.6  |      |
|                              | Gender-related development index        |  | 0.447                                      | 0.415   | 0.464   | 0.331    | 0.318    | 0.417 |      |
|                              | Remoteness health post > 60 minutes (%) |  | 33.7                                       | 27.2    | 39.7    | 48.2     | 53.6     | 35.5  |      |
|                              | Remoteness                              | Remoteness road head > 60 minutes (%)          | 29.3                                       | 7.9     | 19.6    | 39.3     | 33.7     | 20.7  |      |
|                              |   | Remoteness market > 60 minutes (%)             | 48.0                                       | 33.9    | 36.8    | 52.9     | 52.9     | 41.3  |      |
|                              |   | Climate vulnerability index                    | 3.12                                       | 3.53    | 2.75    | 3.13     | 2.89     | 3.12  |      |
|                              | VULNERABILITY                           | Natural disasters                              | Landslide                                  | 2.44    | 2.74    | 2.89     | 3.20     | 3.00  | 2.83 |
|                              |   |  | Drought                                    | 2.25    | 2.74    | 2.06     | 3.73     | 3.56  | 2.78 |
|                              |   |  | Earthquake (mean magnitude)                | 3.36    | 2.16    | 1.88     | 2.41     | 2.60  | 2.46 |
|                              |   |  | Flooding                                   | 1.81    | 2.11    | 1.25     | 1.20     | 1.44  | 1.60 |
|                              |   |  | Climate vulnerability index                | 3.12    | 3.53    | 2.75     | 3.13     | 2.89  | 3.12 |
|                              |   | Risk & exposure to health hazard               | Child (<5 years) ARI/1000 population       | 455     | 401     | 326      | 375      | 376   | 387  |
|                              |   |  | Child (<5 years) Diarrhoea/1000 population | 221     | 193     | 165      | 247      | 216   | 206  |
|                              |   |  | Malaria/1000 population                    | 0.82    | 0.10    | 0.08     | 0.12     | 0.22  | 0.27 |
| Tuberculosis/1000 population |   |  | 0.18                                       | 0.29    | 0.17    | 0.12     | 0.15     | 0.19  |      |
| HIV hotspots                 |   |  | 12.1                                       | 17.8    | 2.3     | 96.2     | 61.6     | 34.2  |      |
| Caste – Dalit (%)            |   |  | 9.6  | 8.3     | 14.6    | 16.2     | 16.9     | 12.5  |      |
| Rural (%)                    |   |  | 96.6                                       | 88.6    | 98.4    | 98.4     | 99.6     | 94.4  |      |
| Dependency ratio (%)         |   |  | 83.3                                       | 89.9    | 93.2    | 89.2     | 96.5     | 89.2  |      |
| Resilience (coping)          |   | Loans (%)                                      | 73.4                                       | 60.8    | 65.5    | 61.0     | 63.8     | 64.9  |      |
|                              | Migrants – from abroad (%)              | 16.7   | 11.6                                       | 16.8    | 14.3    | 10.9     | 11.6     |       |      |
| Food insecurity              | Agricultural land (persons per hectare) | 7.4  | 16.7                                       | 11.8    | 9.4     | 11.5     | 11.6     |       |      |
|                              | Area of Irrigated land (%)              | 38.1   | 42.5                                       | 36.6    | 30.6    | 38.0     | 37.4     |       |      |
|                              | Food insecurity summer                  | 1.57   | 2.07                                       | 1.43    | 2.82    | 2.79     | 2.06     |       |      |
|                              | Food insecurity winter                  | 1.67   | 1.85                                       | 1.44    | 2.37    | 2.36     | 1.89     |       |      |

Table 3.2: Zero-to-one scoring transformations used to derive the composite indices

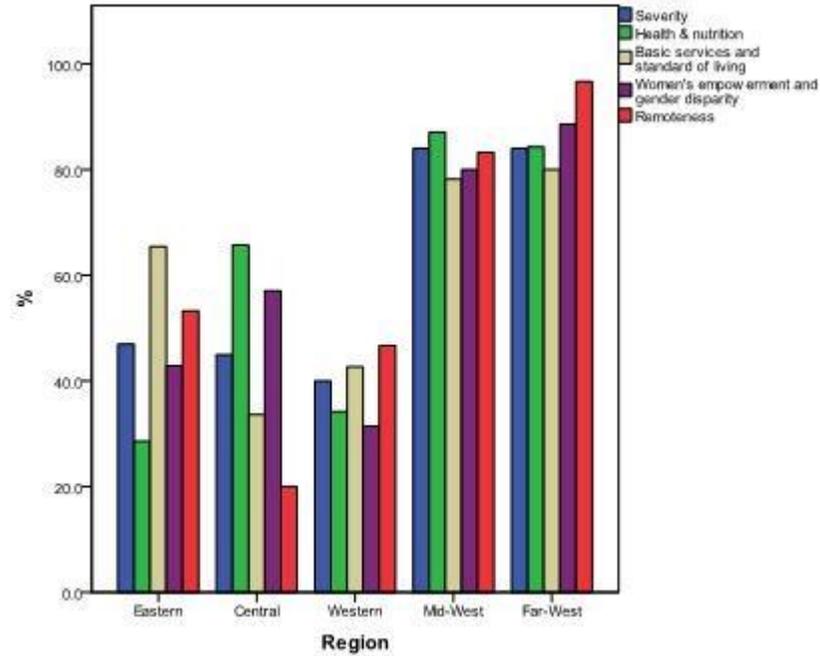
| Dimension                              | Group 1<br>The higher the value of the indicator the less developed the region<br>$d_i = (x_i - \min)/(max-\min)$ | Group 2<br>The higher the value of the indicator the more developed the region<br>$d_i = (max_i - x_i)/(max_i-\min_i)$ |
|--|---|--|
| Severity                               | Poverty (cost of basic needs method) Total (%)  |  |
|  | Poverty (calorie method) Total (%)  |  |
|  | Poverty – food poor (%)   |  |
|  | Poverty – non-food poor (%)   |  |
|  |   | Income male  |
|  |   | Income female  |
|  |   | Adult illiteracy rate (%)  |
|  | Remittances   |  |
|  | Population growth (2001 to 2021)  |  |
|  | Population density  |  |
| Health                                 | Child mortality – all (%)   |  |
|  | Child immunisation – no (%)   |  |
| Nutrition                              | Child stunting (%)  |  |
|  | Child underweight (%)   |  |
|  | Child wasting (%)   |  |
|  | Maternal BMI <18.5 (%)  |  |
|  | Maternal haemoglobin – anaemia (%)  |  |
| Access to basic public services        | Access to basic services  | Health institutions/1000 population  |
| Standard of living                     | Electricity – no (%)  |  |
|  | Drinking water not MDG (%)  |  |
|  | Drinking water not MDG and > 30 minutes (%)   |  |
|  | Sanitation not MDG (%)  |  |
|  | Floor construction – poor (%)   |  |
|  | Wall construction – poor (%)  |  |
|  | Roof construction – poor (%)  |  |
|  | Cooking – poor (%)  |  |
|  | Assets – none (%)   |  |
| Women's empowerment & gender disparity |   | Literacy status female (%)   |
|  | Female headed (%)   | Years of schooling female (years)  |
|  | Women participation in local elections  |  |
|  | Women in professional occupations   |  |
|  | Women in administrative occupations   |  |
| Remoteness                             | Remoteness health post > 60 minutes (%)   | Gender-related development index   |
|  | Remoteness road head > 60 minutes (%)   |  |
|  | Remoteness market > 60 minutes (%)  |  |
| Natural disasters                      | Landslide   |  |
|  | Drought   |  |
|  | Earthquake (mean magnitude)   |  |
|  | Flooding  |  |
| Risk & exposure to health hazard       | Climate vulnerability index   |  |
|  | Child (<5 years) ARI/1000 population  |  |
|  | Child (<5 years) Diarrhoea/1000 population  |  |
|  | Malaria/1000 population   |  |
|  | Tuberculosis/1000 population  |  |
|  | HIV hotspots  |  |
|  | Caste – Dalit (%)   |  |
|  | Rural (%)   |  |
| Resilience (coping)                    | Dependency ratio (%)  |  |
|  | Loans (%)   |  |
| Food insecurity                        | Migrants – from abroad (%)  |  |
|  | Agricultural land (persons per hectare)   | Area of Irrigated land (%)   |
|  | Food insecurity summer  |  |
|  | Food insecurity winter  |  |

**Table 3.3: Indicators ranked by region (1 = best and 5 = worst rank)**

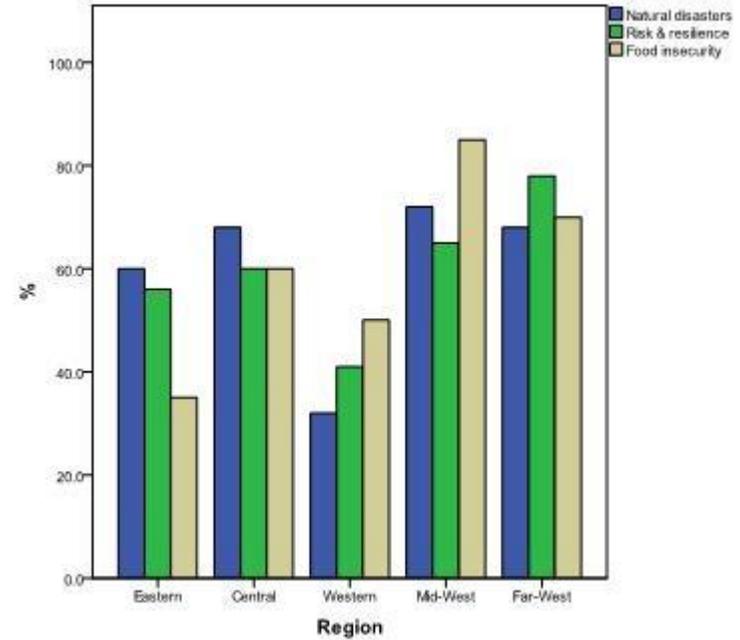
| CHRONIC POVERTY   |  | Eastern                   | Central          | Western           | Mid-West           | Far-West         |           |
|---|--|---------------------------|------------------|-------------------|--------------------|------------------|-----------|
| Severity  | Poverty (cost of basic needs method) Total (%) | 3                         | 2                | 1                 | 5                  | 4                |           |
|   | Poverty (calorie method) Total (%)             | 1                         | 3                | 2                 | 5                  | 4                |           |
|   | Poverty – food poor (%)                        | 3                         | 2                | 1                 | 4                  | 5                |           |
|   | Poverty – non-food poor (%)                    | 3                         | 1                | 2                 | 5                  | 4                |           |
|   | Income male                                    | 3                         | 1                | 2                 | 4.5                | 4.5              |           |
|   | Income female                                  | 4.5                       | 2.5              | 1                 | 4.5                | 2.5              |           |
|   | Adult illiteracy rate (%)                      | 2                         | 3                | 1                 | 4                  | 5                |           |
|   | Remittances                                    | 1                         | 3                | 5                 | 2                  | 4                |           |
|   | Population growth (2001 to 2021)               | 1                         | 4                | 2                 | 3                  | 5                |           |
|   | Population density                             | 2                         | 1                | 3                 | 5                  | 4                |           |
|   | <b>TOTAL</b>                                   |                           | <b>23.5</b>      | <b>22.5</b>       | <b>20</b>          | <b>42</b>        | <b>42</b> |
|   | Health   | Child mortality – all (%) | 1                | 3                 | 2                  | 5                | 4         |
| Child immunisation – no (%)                                   |  | 1                         | 4                | 2                 | 5                  | 3                |           |
| Nutrition   | Child stunting (%)                             | 1                         | 2                | 3                 | 5                  | 4                |           |
|   | Child underweight (%)                          | 2                         | 3                | 1                 | 4.5                | 4.5              |           |
|   | Child wasting (%)                              | 2                         | 5                | 1                 | 3                  | 4                |           |
|   | Maternal BMI <18.5 (%)                         | 2                         | 3                | 1                 | 4                  | 5                |           |
|   | Maternal haemoglobin – anaemia (%)             | 1                         | 3                | 2                 | 4                  | 5                |           |
| <b>TOTAL</b>  |  | <b>10</b>                 | <b>23</b>        | <b>12</b>         | <b>30.5</b>        | <b>29.5</b>      |           |
| Access to basic public services                               | Health institutions/1000 population            | 3                         | 1                | 2                 | 5                  | 4                |           |
|   | Access to basic services                       | 5                         | 3.5              | 3.5               | 1                  | 2                |           |
| Standard of living  | Electricity – no (%)                           | 3                         | 1                | 2                 | 4                  | 5                |           |
|   | Drinking water not MDG (%)                     | 3                         | 2                | 1                 | 5                  | 4                |           |
|   | Drinking water not MDG and > 30 minutes (%)    | 3                         | 2                | 1                 | 5                  | 4                |           |
|   | Sanitation not MDG (%)                         | 3                         | 2                | 1                 | 4                  | 5                |           |
|   | Floor construction – poor (%)                  | 3                         | 1                | 2                 | 4                  | 5                |           |
|   | Wall construction – poor (%)                   | 1                         | 2                | 3                 | 5                  | 4                |           |
|   | Roof construction – poor (%)                   | 4                         | 2                | 3                 | 5                  | 1                |           |
|   | Cooking – poor (%)                             | 4                         | 1                | 2                 | 3                  | 5                |           |
|   | Assets – none (%)                              | 4                         | 1                | 3                 | 2                  | 5                |           |
|   | <b>TOTAL</b>                                   |                           | <b>36</b>        | <b>18.5</b>       | <b>23.5</b>        | <b>43</b>        | <b>44</b> |
| Women's empowerment & gender disparity                        | Literacy status female (%)                     | 2                         | 3                | 1                 | 4                  | 5                |           |
|   | Years of schooling female (years)              | 2                         | 3                | 1                 | 4                  | 5                |           |
|   | Female headed (%)                              | 2                         | 1                | 5                 | 3                  | 4                |           |
|   | Women participation in local elections         | 3                         | 4                | 1                 | 5                  | 2                |           |
|   | Women in professional occupations              | 2                         | 3                | 1                 | 4                  | 5                |           |
|   | Women in administrative occupations            | 2                         | 3                | 1                 | 4                  | 5                |           |
|   | Gender-related development index               | 2                         | 3                | 1                 | 4                  | 5                |           |
| <b>TOTAL</b>  |  | <b>15</b>                 | <b>20</b>        | <b>11</b>         | <b>28</b>          | <b>31</b>        |           |
| Remoteness  | Remoteness health post > 60 minutes (%)        | 2                         | 1                | 3                 | 4                  | 5                |           |
|   | Remoteness road head > 60 minutes (%)          | 3                         | 1                | 2                 | 4                  | 5                |           |
|   | Remoteness market > 60 minutes (%)             | 3                         | 1                | 2                 | 4.5                | 4.5              |           |
| <b>TOTAL</b>  |  | <b>8</b>                  | <b>3</b>         | <b>7</b>          | <b>12.5</b>        | <b>14.5</b>      |           |
| <b>CHRONIC POVERTY TOTAL AND MEAN</b>                         |  | <b>92.5 (2.4)</b>         | <b>87 (2.3)</b>  | <b>73.5 (1.9)</b> | <b>156 (4.1)</b>   | <b>161 (4.2)</b> |           |
| <b>VULNERABILITY</b>  |  |                           |                  |                   |                    |                  |           |
| Natural disasters   | Landslide                                      | 1                         | 2                | 3                 | 5                  | 4                |           |
|   | Drought  | 2                         | 3                | 1                 | 5                  | 4                |           |
|   | Earthquake (mean magnitude)                    | 5                         | 2                | 1                 | 3                  | 4                |           |
|   | Flooding                                       | 4                         | 5                | 2                 | 1                  | 3                |           |
|   | Climate vulnerability index                    | 3                         | 5                | 1                 | 4                  | 2                |           |
| <b>TOTAL</b>  |  | <b>15</b>                 | <b>17</b>        | <b>8</b>          | <b>18</b>          | <b>17</b>        |           |
| Risk & exposure to health hazard                              | Child (<5 years) ARI/1000 population           | 5                         | 4                | 1                 | 2                  | 3                |           |
|   | Child (<5 years) Diarrhoea/1000 population     | 4                         | 2                | 1                 | 5                  | 3                |           |
|   | Malaria/1000 population                        | 5                         | 2                | 1                 | 3                  | 4                |           |
|   | Tuberculosis/1000 population                   | 4                         | 5                | 3                 | 1                  | 2                |           |
|   | HIV hotspots                                   | 2                         | 3                | 1                 | 5                  | 4                |           |
|   | Caste – Dalit (%)                              | 2                         | 1                | 3                 | 4                  | 5                |           |
|   | Rural (%)                                      | 2                         | 1                | 3.5               | 3.5                | 5                |           |
| Resilience (coping)   | Dependency ratio (%)                           | 1                         | 3                | 4                 | 2                  | 5                |           |
|   | Loans (%)                                      | 1                         | 5                | 2                 | 4                  | 3                |           |
|   | Migrants – from abroad (%)                     | 2                         | 4                | 1                 | 3                  | 5                |           |
| <b>TOTAL</b>  |  | <b>28</b>                 | <b>30</b>        | <b>20.5</b>       | <b>32.5</b>        | <b>39</b>        |           |
| <b>VULNERABILITY TOTAL AND MEAN</b>                           |  | <b>43 (2.9)</b>           | <b>47 (3.1)</b>  | <b>30.5 (2.0)</b> | <b>50.5 (3.4)</b>  | <b>56 (3.7)</b>  |           |
| Food insecurity   | Agricultural land (persons per hectare)        | 1                         | 5                | 4                 | 2                  | 3                |           |
|   | Area of irrigated land (%)                     | 2                         | 1                | 4                 | 5                  | 3                |           |
|   | Food insecurity summer                         | 2                         | 3                | 1                 | 5                  | 4                |           |
|   | Food insecurity winter                         | 2                         | 3                | 1                 | 5                  | 4                |           |
| <b>TOTAL AND MEAN</b>   |  | <b>7 (1.75)</b>           | <b>12 (3.0)</b>  | <b>10 (2.5)</b>   | <b>17 (4.25)</b>   | <b>14 (3.5)</b>  |           |
| <b>VULNERABILITY AND FOOD INSECURITY TOTAL AND MEAN</b>       |  | <b>50 (2.6)</b>           | <b>59 (3.1)</b>  | <b>40.5 (2.1)</b> | <b>67.5 (3.6)</b>  | <b>70 (3.7)</b>  |           |
| <b>CHRONIC POVERTY AND VULNERABILITY GRAND TOTAL AND MEAN</b> |  | <b>142.5 (2.5)</b>        | <b>146 (2.6)</b> | <b>114 (2.0)</b>  | <b>223.5 (3.9)</b> | <b>231 (4.1)</b> |           |



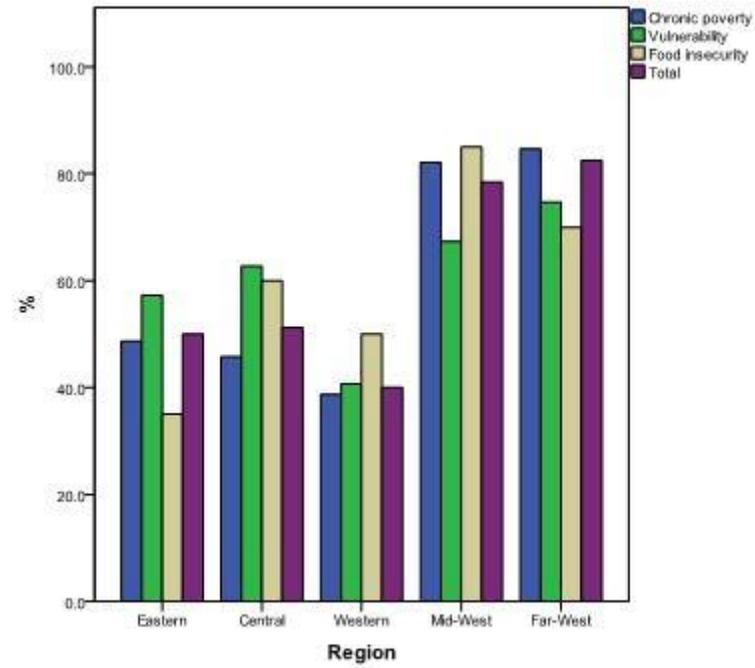
**Figure 3.1 Ranked chronic poverty dimensions (%) by region (higher percentage indicative of worse condition)**



**Figure 3.2 Ranked vulnerability dimensions and food insecurity (%) by region (higher percentage indicative of worse condition)**



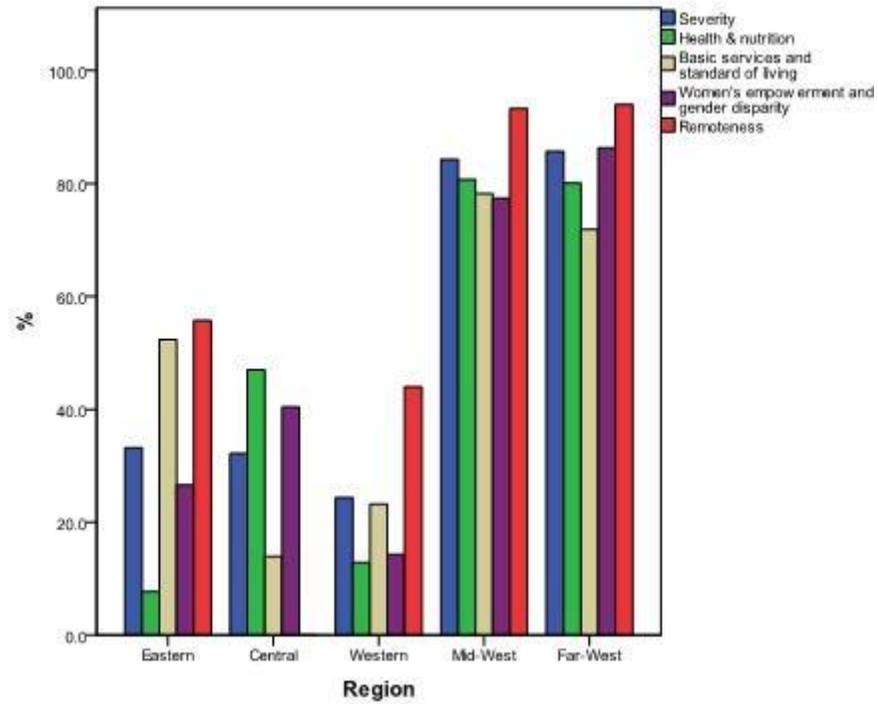
**Figure 3.3 Ranked Chronic Poverty, Vulnerability, Food Insecurity and Total (%) by region (higher percentage indicative of worse condition)**



**Table 3.4: Zero-to-one scoring transformation and the mean composite indices by region (0= best, 1= worst)**

| CHRONIC POVERTY   | Indicator                                      | Eastern             | Central             | Western             | Mid-West            | Far-West            | p                |
|---|--|---------------------|---------------------|---------------------|---------------------|---------------------|------------------|
| Severity  | Poverty (cost of basic needs method) Total (%) | .38                 | .01                 | .0                  | 1.00                | .83                 |                  |
|   | Poverty (calorie method) Total (%)             | .0                  | .15                 | .03                 | 1.00                | .69                 |                  |
|   | Poverty – food poor (%)                        | .38                 | .36                 | .0                  | .79                 | 1.00                |                  |
|   | Poverty – non-food poor (%)                    | .50                 | .0                  | .28                 | 1.00                | .54                 |                  |
|   | Income male                                    | .37                 | .0                  | .25                 | 1.00                | 1.00                |                  |
|   | Income female                                  | 1.00                | .60                 | .0                  | 1.00                | .60                 |                  |
|   | Adult illiteracy rate (%)                      | .23                 | .46                 | .0                  | .93                 | 1.00                |                  |
|   | Remittances                                    | .0                  | .70                 | 1.00                | .24                 | .96                 |                  |
|   | Population growth (2001 to 2021)               | .0                  | .94                 | .10                 | .47                 | 1.00                |                  |
|   | Population density                             | 0.46                | .0                  | .78                 | 1.00                | .95                 |                  |
| <b>TOTAL</b>  |  | <b>3.32</b>         | <b>3.22</b>         | <b>2.44</b>         | <b>8.43</b>         | <b>8.57</b>         | <b>&lt;0.001</b> |
| Health  | Child mortality – all (%)                      | .0                  | .49                 | .23                 | 1.00                | .85                 |                  |
|   | Child immunisation – no (%)                    | .0                  | .52                 | .20                 | 1.00                | .29                 |                  |
| Nutrition   | Child stunting (%)                             | .0                  | .15                 | .18                 | 1.00                | .73                 |                  |
|   | Child underweight (%)                          | .13                 | .31                 | .0                  | 1.00                | 1.00                |                  |
|   | Child wasting (%)                              | .21                 | 1.00                | .0                  | .42                 | .74                 |                  |
|   | Maternal BMI <18.5 (%)                         | .20                 | .40                 | .0                  | .43                 | 1.00                |                  |
|   | Maternal haemoglobin – anaemia (%)             | .0                  | .42                 | .29                 | .80                 | 1.00                |                  |
|   | <b>TOTAL</b>                                   |                     | <b>0.54</b>         | <b>3.29</b>         | <b>0.90</b>         | <b>5.65</b>         | <b>5.61</b>      |
| Access to basic public services                               | Health institutions/1000 population            | .30                 | .0                  | .10                 | 1.00                | .90                 |                  |
|   | Access to basic services                       | 1.00                | .80                 | .80                 | .0                  | .20                 |                  |
| Standard of living  | Electricity – no (%)                           | .64                 | .0                  | .03                 | .86                 | 1.00                |                  |
|   | Drinking water not MDG (%)                     | .18                 | .08                 | .0                  | 1.00                | .51                 |                  |
|   | Drinking water not MDG and > 30 minutes (%)    | .14                 | .07                 | .0                  | 1.00                | .59                 |                  |
|   | Sanitation not MDG (%)                         | .43                 | .19                 | .0                  | .91                 | 1.00                |                  |
|   | Floor construction – poor (%)                  | .53                 | .0                  | .08                 | .88                 | 1.00                |                  |
|   | Wall construction – poor (%)                   | .0                  | .24                 | .70                 | 1.00                | .71                 |                  |
|   | Roof construction – poor (%)                   | .98                 | .15                 | .23                 | 1.00                | .0                  |                  |
|   | Cooking – poor (%)                             | .89                 | .0                  | .46                 | .88                 | 1.00                |                  |
|   | Assets – none (%)                              | .67                 | .0                  | .15                 | .07                 | 1.00                |                  |
|   | <b>TOTAL</b>                                   |                     | <b>5.76</b>         | <b>1.53</b>         | <b>2.55</b>         | <b>8.60</b>         | <b>7.91</b>      |
| Women's empowerment & gender disparity                        | Literacy status female (%)                     | .25                 | .38                 | .0                  | .94                 | 1.00                |                  |
|   | Years of schooling female (years)              | .08                 | .33                 | .0                  | .92                 | 1.00                |                  |
|   | Female headed (%)                              | .12                 | .0                  | 1.00                | .33                 | .39                 |                  |
|   | Women participation in local elections         | .74                 | .81                 | .0                  | 1.00                | .65                 |                  |
|   | Women in professional occupations              | .35                 | .43                 | .0                  | .57                 | 1.00                |                  |
|   | Women in administrative occupations            | .20                 | .54                 | .0                  | .75                 | 1.00                |                  |
|   | Gender-related development index               | .12                 | .34                 | .0                  | .91                 | 1.00                |                  |
| <b>TOTAL</b>  |  | <b>1.86</b>         | <b>2.83</b>         | <b>1.00</b>         | <b>5.42</b>         | <b>6.04</b>         | <b>&lt;0.001</b> |
| Remoteness  | Remoteness health post > 60 minutes (%)        | .25                 | .0                  | .47                 | .80                 | 1.00                |                  |
|   | Remoteness road head > 60 minutes (%)          | .68                 | .0                  | .37                 | 1.00                | .82                 |                  |
|   | Remoteness market > 60 minutes (%)             | .74                 | .0                  | .15                 | 1.00                | 1.00                |                  |
| <b>TOTAL</b>  |  | <b>1.67</b>         | <b>0</b>            | <b>0.99</b>         | <b>2.80</b>         | <b>2.82</b>         | <b>&lt;0.001</b> |
| <b>CHRONIC POVERTY TOTAL AND MEAN</b>                         |  | <b>13.15</b>        | <b>10.87</b>        | <b>7.88</b>         | <b>30.90</b>        | <b>30.95</b>        | <b>&lt;0.001</b> |
| <b>VULNERABILITY</b>  |  |                     |                     |                     |                     |                     |                  |
| Natural disasters   | Landslide                                      | .0                  | .39                 | .59                 | 1.00                | .74                 |                  |
|   | Drought  | .11                 | .41                 | .0                  | 1.00                | .90                 |                  |
|   | Earthquake (mean magnitude)                    | 1.00                | .19                 | .0                  | .36                 | .49                 |                  |
|   | Flooding                                       | .67                 | 1.00                | .05                 | .0                  | .26                 |                  |
|   | Climate vulnerability index                    | .47                 | 1.00                | .0                  | .49                 | .18                 |                  |
| <b>TOTAL</b>  |  | <b>2.25</b>         | <b>2.99</b>         | <b>0.64</b>         | <b>2.85</b>         | <b>2.57</b>         | <b>ns</b>        |
| Risk & exposure to health hazard                              | Child (<5 years) ARI/1000 population           | 1.00                | .58                 | .0                  | .38                 | .39                 |                  |
|   | Child (<5 years) Diarrhoea/1000 population     | .68                 | .34                 | .0                  | 1.00                | .62                 |                  |
|   | Malaria/1000 population                        | 1.00                | .03                 | .0                  | .05                 | .19                 |                  |
|   | Tuberculosis/1000 population                   | .35                 | 1.00                | .29                 | .0                  | .18                 |                  |
|   | HIV hotspots                                   | .10                 | .17                 | .0                  | 1.00                | .63                 |                  |
|   | Caste – Dalit (%)                              | .15                 | .0                  | .73                 | .92                 | 1.00                |                  |
|   | Rural (%)                                      | .73                 | .0                  | .89                 | .89                 | 1.00                |                  |
|   | Dependency ratio (%)                           | .0                  | .50                 | .75                 | .45                 | 1.00                |                  |
| Resilience (coping)   | Loans (%)                                      | 1.00                | .0                  | .63                 | .98                 | .76                 |                  |
|   | Migrants – from abroad (%)                     | .02                 | .88                 | .0                  | .42                 | 1.00                |                  |
| <b>TOTAL</b>  |  | <b>5.03</b>         | <b>3.50</b>         | <b>3.29</b>         | <b>6.09</b>         | <b>6.77</b>         | <b>ns</b>        |
| <b>VULNERABILITY TOTAL AND MEAN</b>                           |  | <b>7.28 (0.49)</b>  | <b>6.49 (0.43)</b>  | <b>3.93 (0.26)</b>  | <b>8.94 (0.60)</b>  | <b>9.34 (0.62)</b>  | <b>ns</b>        |
| Food insecurity   | Agricultural land (persons per hectare)        | .0                  | 1.00                | .47                 | .22                 | .44                 |                  |
|   | Area of irrigated land (%)                     | .37                 | .0                  | .50                 | 1.00                | .38                 |                  |
|   | Food insecurity summer                         | .10                 | .46                 | .0                  | 1.00                | .98                 |                  |
|   | Food insecurity winter                         | .25                 | .44                 | .0                  | 1.00                | .99                 |                  |
| <b>TOTAL AND MEAN</b>   |  | <b>0.72 (0.18)</b>  | <b>1.90 (0.48)</b>  | <b>0.97 (0.24)</b>  | <b>3.22 (0.81)</b>  | <b>2.79 (0.70)</b>  | <b>ns</b>        |
| <b>VULNERABILITY AND FOOD INSECURITY TOTAL</b>                |  | <b>8.00 (0.42)</b>  | <b>8.39 (0.44)</b>  | <b>4.90 (0.64)</b>  | <b>12.16 (0.64)</b> | <b>12.13 (0.64)</b> | <b>&lt;0.006</b> |
| <b>CHRONIC POVERTY AND VULNERABILITY GRAND TOTAL AND MEAN</b> |  | <b>21.15 (0.37)</b> | <b>19.26 (0.34)</b> | <b>12.78 (0.22)</b> | <b>43.06 (0.76)</b> | <b>43.08 (0.76)</b> | <b>&lt;0.001</b> |

**Figure 3.4 Chronic poverty composite index dimensions by region (%)**



**Figure 3.5 Vulnerability composite index dimensions by region (%)**

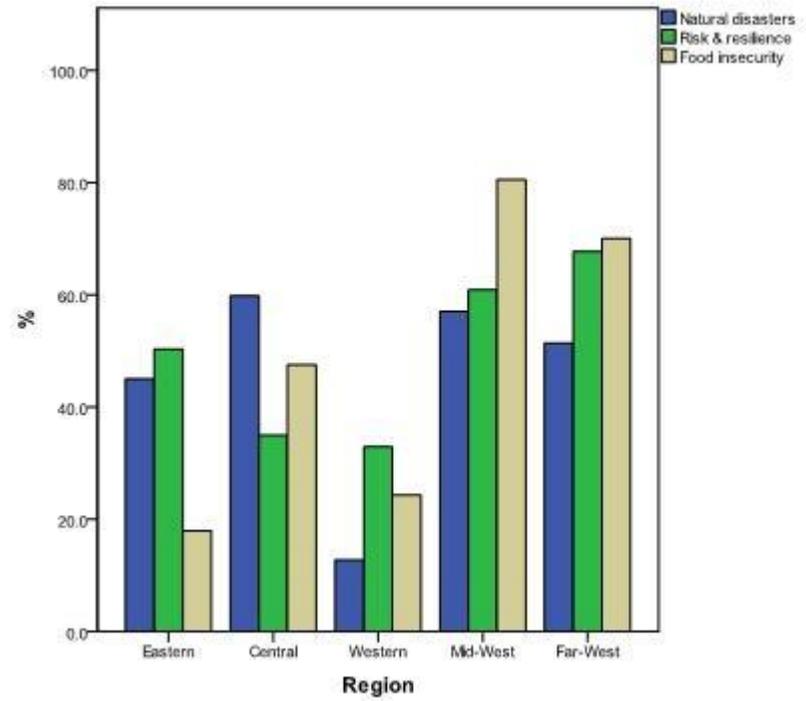
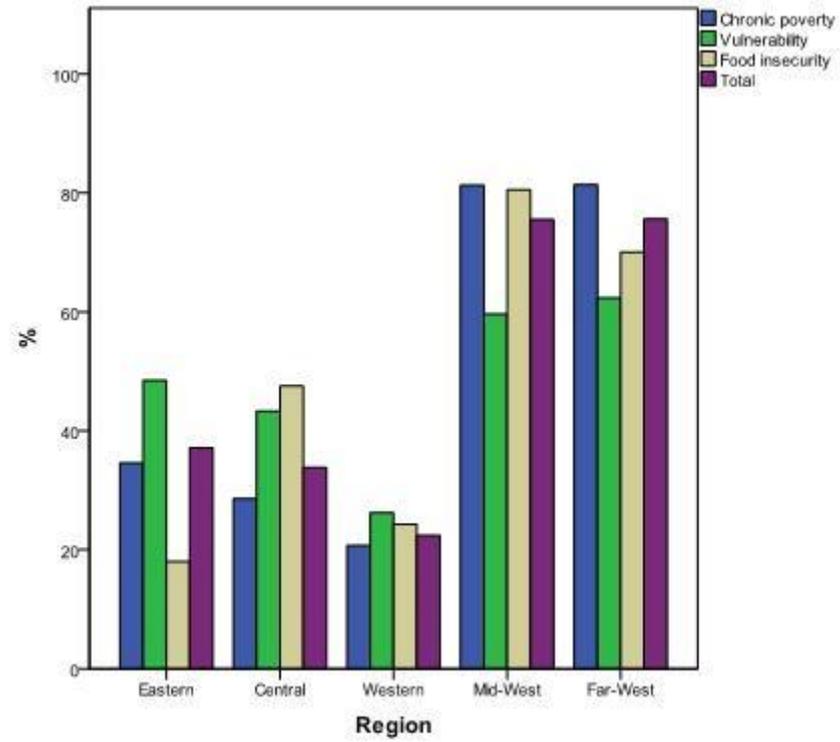


Figure 3.6 Chronic poverty, vulnerability and food insecurity and Total composite index by region (%)



**Table 3.5: Mean Overall Poverty Gap (PG) by region**

| Region   | Overall PG | p      | Post-hoc differences between regions |         |          |          |
|----------|------------|--------|--------------------------------------|---------|----------|----------|
|          |            |        | Central                              | Western | Mid-West | Far-West |
| Eastern  | -462.9     | <0.001 | ns                                   | ns      | <0.001   | ns       |
| Central  | -353.0     |        |                                      | ns      | <0.001   | 0.006    |
| Western  | -358.1     |        |                                      |         | <0.001   | 0.016    |
| Mid-West | -699.5     |        |                                      |         |          | ns       |
| Far-West | -583.7     |        |                                      |         |          |          |

**Table 3.6: Mean Food Poverty Gap (PG) by region**

| Region   | Food PG | p      | Post-hoc differences between regions |         |          |          |
|----------|---------|--------|--------------------------------------|---------|----------|----------|
|          |         |        | Central                              | Western | Mid-West | Far-West |
| Eastern  | -264.9  | <0.001 | ns                                   | ns      | <0.001   | 0.026    |
| Central  | -275.3  |        |                                      | ns      | <0.001   | 0.035    |
| Western  | -181.4  |        |                                      |         | <0.001   | 0.001    |
| Mid-West | -416.8  |        |                                      |         |          | ns       |
| Far-West | -395.7  |        |                                      |         |          |          |

**Table 3.7: Mean Non-food Poverty Gap (PG) by region**

| Region   | Non-food PG | p      | Post-hoc differences between regions |         |          |          |
|----------|-------------|--------|--------------------------------------|---------|----------|----------|
|          |             |        | Central                              | Western | Mid-West | Far-West |
| Eastern  | -363.3      | <0.001 | <0.001                               | ns      | <0.001   | ns       |
| Central  | -209.9      |        |                                      | ns      | <0.001   | 0.001    |
| Western  | -330.1      |        |                                      |         | <0.001   | ns       |
| Mid-West | -515.0      |        |                                      |         |          | 0.005    |
| Far-West | -357.9      |        |                                      |         |          |          |

**Table 3.8: Mean Overall Poverty Gap Index (PGI) by region**

| Region   | Overall PGI | p      | Post-hoc differences between regions |         |          |          |
|----------|-------------|--------|--------------------------------------|---------|----------|----------|
|          |             |        | Central                              | Western | Mid-West | Far-West |
| Eastern  | -0.061      | <0.001 | ns                                   | 0.027   | 0.033    | ns       |
| Central  | -0.047      |        |                                      | ns      | <0.001   | 0.035    |
| Western  | -0.043      |        |                                      |         | <0.001   | 0.017    |
| Mid-West | -0.083      |        |                                      |         |          | ns       |
| Far-West | -0.071      |        |                                      |         |          |          |

**Table 3.9: Mean Food Poverty Gap Index (PGI) by region**

| Region   | Food<br>PG | P      | Post-hoc differences between regions |         |          |          |
|----------|------------|--------|--------------------------------------|---------|----------|----------|
|          |            |        | Central                              | Western | Mid-West | Far-West |
| Eastern  | -0.054     | <0.001 | ns                                   | 0.015   | 0.002    | 0.047    |
| Central  | -0.053     |        |                                      | 0.007   | <0.001   | 0.023    |
| Western  | -0.035     |        |                                      |         | <0.001   | <0.001   |
| Mid-West | -0.079     |        |                                      |         |          | ns       |
| Far-West | -0.077     |        |                                      |         |          |          |

**Table 3.10: Mean Non-food Poverty Gap Index (PGI) by region**

| Region   | Non-food<br>PGI | p      | Post-hoc differences between regions |         |          |          |
|----------|-----------------|--------|--------------------------------------|---------|----------|----------|
|          |                 |        | Central                              | Western | Mid-West | Far-West |
| Eastern  | -0.142          | <0.001 | <0.001                               | 0.001   | ns       | ns       |
| Central  | -0.084          |        |                                      | ns      | <0.001   | ns       |
| Western  | -0.103          |        |                                      |         | <0.001   | ns       |
| Mid-West | -0.160          |        |                                      |         |          | 0.027    |
| Far-West | -0.112          |        |                                      |         |          |          |

**Table 3.11: Overall Squared Poverty Gap Index (SPGI) by region**

| Region   | Overall<br>SPGI | p      | Post-hoc differences between regions |         |          |          |
|----------|-----------------|--------|--------------------------------------|---------|----------|----------|
|          |                 |        | Central                              | Western | Mid-West | Far-West |
| Eastern  | 0.022           | <0.001 | ns                                   | ns      | ns       | ns       |
| Central  | 0.017           |        |                                      | ns      | 0.010    | ns       |
| Western  | 0.015           |        |                                      |         | 0.003    | ns       |
| Mid-West | 0.027           |        |                                      |         |          | ns       |
| Far-West | 0.022           |        |                                      |         |          |          |

**Table 3.12: Food Squared Poverty Gap Index (SPGI) by region**

| Region   | Food<br>SPGI | p      | Post-hoc differences between regions |         |          |          |
|----------|--------------|--------|--------------------------------------|---------|----------|----------|
|          |              |        | Central                              | Western | Mid-West | Far-West |
| Eastern  | 0.017        | <0.001 | ns                                   | ns      | 0.015    | ns       |
| Central  | 0.017        |        |                                      | ns      | 0.007    | ns       |
| Western  | 0.011        |        |                                      |         | <0.001   | 0.045    |
| Mid-West | 0.027        |        |                                      |         |          | ns       |
| Far-West | 0.022        |        |                                      |         |          |          |

**Table 3.13: Non-food Squared Poverty Gap Index (SPGI) by region**

| Region   | Non-food<br>SPGI | p      | Post-hoc differences between regions |         |          |          |
|----------|------------------|--------|--------------------------------------|---------|----------|----------|
|          |                  |        | Central                              | Western | Mid-West | Far-West |
| Eastern  | 0.077            | <0.001 | 0.001                                | 0.001   | ns       | 0.026    |
| Central  | 0.049            |        |                                      | ns      | <0.001   | ns       |
| Western  | 0.050            |        |                                      |         | 0.036    | ns       |
| Mid-West | 0.072            |        |                                      |         |          | ns       |
| Far-West | 0.050            |        |                                      |         |          |          |

## **Report 4 – Description of the distribution of, and trends in, chronic poverty and vulnerability in the Mid- and Far-West regions identifying the critical region, and if possible within the region or zones, the most critical districts**

### **4.1 Introduction**

The only data which will provide statistically rigorous evidence of trends is the comparison of the 962 households who were surveyed in both NLSS I (1995/6) and NLSS II (2003/4) and the recently released data on NLSS III which has panel data on 600 households covering all three surveys as well as a further 600 households covering surveys II and III. As the data for the panel surveys is not in a usable format, the trend analyses have not been included in output 4.

All the zonal and district level analyses have excluded Achham as data were incomplete for this district. No poverty gap or index analyses were undertaken at district level because of small sample sizes.

### **4.2 Zonal analysis**

The analysis examined 56 of the indicators referred to in output 3 for the three Mid-West zones (Bheri, Karnali and Rapti) and two Far-West zones (Mahakali and Seti). The only indicator missing was on population growth as data were not available at the zonal level.

#### **4.2.1 Ranking**

All 56 indicators were ranked by zone and the results are presented in Table 4.2. When all 37 chronic poverty indicators were combined there was highly significant variation between zones ( $p < 0.001$ ) with Karnali zone having the worst overall ranking as well as the worst ranking on two dimensions (severity, and standard of living). Figure 4.1 presents the dimension percentages (out of the maximum ranking for each dimension, so higher percentages are indicative of greater chronic poverty) and Karnali's overall chronic poverty percentage was 79% followed by Seti (68%), Mahakali (60%), Bheri (46%) and Rapti (36%).

Vulnerability rankings by the two dimensions of natural disasters and risk and resilience were much more homogeneous across zones with Seti being just worst for natural disasters and Bheri for risk and resilience. Overall (Figure 4.2) Seti had the highest vulnerability (70%) followed by Karnali (65%), Bheri (63%), Mahakali (55%) and Rapti (40%). Food insecurity was worst in Karnali (80%) followed by Seti (65%), Bheri (60%), Mahakali (55%) and Repti (40%). When all three vulnerability dimensions were analysed together (natural disasters, risk and resilience and food insecurity) Seti was slightly worse than Karnali (69% and 68%, respectively) followed by Bheri (62%), Repti and Mahakali (both 51%).

When all 56 indicators were combined (Figure 4.3), Karnali was the worst zone (75%) followed by Seti (69%), Mahakali (57%), Bheri (55%) and Rapti (47%).

#### **4.2.2 Composite index**

The results of the composite index analyses are presented in Table 4.3. Of the five chronic poverty dimensions highly significant differences between zones were found for basic

services and standard of living. Karnali was twice as worse (98%) as the next zone (Mahakali, 48%) followed by Seti (35%), Bheri (23%) and Rapti (10%). Karnali also had just significantly worse severity dimension (76%) followed by Seti (49%), Rapti (38%), Bheri (32%) and Mahakali (24%); the worse severity dimension was mainly due to greater poverty and adult illiteracy and less remittances than the other zones. When all 37 chronic indicators were combined, Karnali was significantly the worst zone at just over 70% (Figure 4.4) followed by Seti (49%), Mahakali (43%), Bheri (30%) and Rapti (23%).

There was much less zonal variation in vulnerability indicators and no significant differences were found based on either the two or three dimensions. Karnali had the highest level of natural disasters (71%, see Figure 4.5) and Bheri the highest level of risk and resilience (61%). Overall Karnali had the highest vulnerability (59%) followed by Seti (55%), Bheri (43%), Mahakali (33%) and Rapti (29%, and Figure 4.6). Food insecurity was also worst in Karnali (63%, Figure 4.5) followed by Seti (43%), Mahakali (31%), Bheri (27%) and Rapti (15%).

When all 56 indicators were considered Karnali was significantly the worst zone (67%,  $p < 0.001$  and Figure 4.6) followed by Seti (51%), Mahakali (40%), Bheri (35%) and Rapti (25%).

### **4.2.3 Poverty Gap and Squared Poverty Gap Indices**

The poverty gap and indices analyses revealed that there was no significant variation in overall and food mean poverty gap and indices between zones. However there was highly significant heterogeneity between the five zones in non-food poverty, with Karnali having significantly worse poverty gap, poverty gap index and squared poverty gap index than the other 4 zones (Tables 4.4 to 4.7). Post-hoc analyses showed that there was no significant variation in non-food mean, index or squared index between the other 4 zones.

### **4.2.4 Conclusions**

1. The ranking analysis revealed that Karnali had the greatest overall chronic poverty of 79% followed by Seti (68%), Mahakali (60%), Bheri (46%) and Rapti (36%). The composite analyses gave slightly different percentages but the order of zones was identical with Karnali being the worst zone (67%) followed by Seti (51%), Mahakali (40%), Bheri (35%) and Rapti (25%).
2. Both analyses found that Karnali had worst basic services and standard of living and severity dimensions. Based on the composite index, for basic services and standard of living Karnali was twice as worse (98%) as the next zone (Mahakali, 48%) followed by Seti (35%), Bheri (23%) and Rapti (10%). Based on ranking the order of zones was the same but with different percentages; Karnali (96%) followed by Mahakali (65%), Seti (58%), Bheri (41%) and Rapti (39%). Karnali also had just significantly worse severity dimension based on the composite index (76%) followed by Seti (49%), Rapti (38%), Bheri (32%) and Mahakali (24%). Using the ranking percentages the ordering was slightly different but Karnali was the worst zone (78%) followed by Seti (62%), Rapti (60%), Mahakali (51%) and Bheri (49%). Karnali's worse severity dimension was mainly due to greater poverty and adult illiteracy and less remittances than the other zones

3. The poverty gap analyses confirmed Karnali as having much higher non-food poverty and greater non-food inequality (squared poverty gap index).
4. Vulnerability rankings by the two dimensions of natural disasters and risk and resilience were much more homogeneous across zones. Overall Seti had the highest vulnerability (70%) followed by Karnali (65%), Bheri (63%), Mahakali (55%) and Rapti (40%). The composite index analyses revealed that Karnali was the worst zone (59%) followed by Seti (57%), Bheri (48%), Mahakali (36%) and Rapti (33%). Food insecurity was worst in Karnali (80%) followed by Seti (65%), Bheri (60%), Mahakali (55%) and Rapti (40%) by ranking. Karnali was also worst based on the composite index (63%) followed by Seti (43%), Mahakali (31%), Bheri (27%) and Rapti (15%).
5. When all three vulnerability dimensions were analysed together (natural disasters, risk and resilience and food insecurity) Seti was slightly worse than Karnali (69% and 68%, respectively) followed by Bheri (62%), Rapti and Mahakali (both 51%) by ranking. Based on composite index Karnali had the highest vulnerability (59%) followed by Seti (55%), Bheri (43%), Mahakali (33%) and Rapti (29%).
6. When all 56 indicators were combined the ranking analyses revealed that Karnali was the worst zone (75%) followed by Seti (69%), Mahakali (57%), Bheri (55%) and Rapti (47%). Using the composite index the zonal order was the same but the percentages changed so Karnali was significantly the worst zone (67%) followed by Seti (51%), Mahakali (40%), Bheri (35%) and then Rapti (25%).

### 4.3 District analyses

The same indicators were used in the district level analysis except that information on access to basic services was not available at the district level. Table 4.7 provides a breakdown of the indicators at the district level. Some comparisons were made with the UNICEF study, which conducted a nutrition survey in 6 districts, three each in the Mid- and Far West (Table 4.8) and the prevalence of stunting, underweight and wasting was reasonable similar even though there was a six year gap between the studies.

#### 4.3.1 Ranking

All 55 indicators were ranked by district and the results are presented in Table 4.9. For chronic poverty Humla was the worst ranked district (Table 4.10) followed by Kalikott, Mugu and Jumla (all Karnali zone). Vulnerability (2 dimensions) was worst in Bajura followed by Mugu, Kalikot and Jajarkot while food insecurity was worst in Dolpa, followed by Bajura, Dandeldhura and Ddailekh. When all three vulnerability dimensions were considered together Bajura was the worst district followed by Mugu, Dolpa and Jajarkot. Across all 56 indicators Mugu was the worst ranked district followed by Humla, Kalikot and Bajura of which the worst three are all in Karnali zone. The five Karnali districts were ranked 23<sup>rd</sup>, 22<sup>nd</sup>, 21<sup>st</sup>, 19<sup>th</sup> and 16<sup>th</sup> (Table 14).

#### 4.3.2 Composite index

The results of the composite index analyses are presented in Table 4.11 and summarised in Table 4.12. Again Humla, and Kalikot were the worst two districts for chronic poverty followed by Dolpa and Rukum. Mugu had the greatest vulnerability (2 dimensions) followed by Kailali, Jajarkot and Dolpa. Food insecurity was highest in Bajura followed by Dolpa,

Jumla and Dandeldhura and when all three vulnerability dimensions were analysed together, Mugu was the worst followed by Dolpa, Bajura and Jajarkot.

Across all 55 composite index indicators Humla was the worst district followed by Dolpa, Kalikot and Mugu all districts being in Karnali zone. Jumla, the other Karnal district was 17<sup>th</sup> worst district.

#### **4.3.3 Conclusions**

1. The ranking and composite index analyses both found that Humla had the worst chronic poverty followed by Kalikot while Dolpa was worst for vulnerability (three dimensions).
2. Using all indicators the ranking analyses found that Mugu was the worst district followed by Humla and Kalikot (all Karnali) while the composite index analyses revealed that Humla was the worst district followed by Dolpa, Kalikot and Mugu (all Karnali).

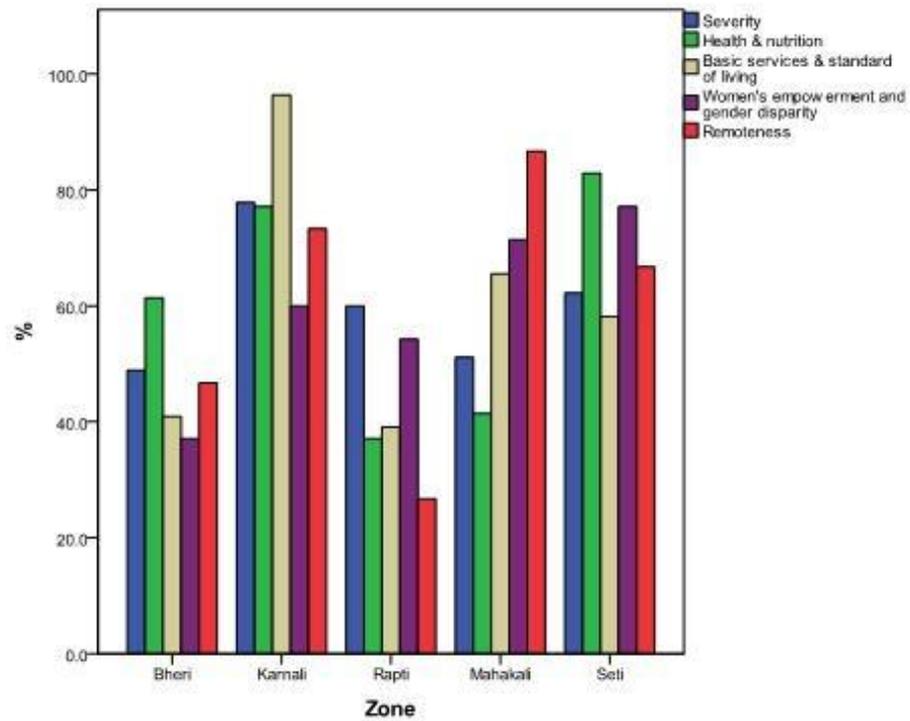
**Table 4.1: Variation in indicators by zone**

| CHRONIC POVERTY                  | Dimension                               | Indicator                                   | Mid-West                          |         |       | Far-West |       |       |      |
|----------------------------------|---|---|-----------------------------------|---------|-------|----------|-------|-------|------|
|                                  |   |   | Bheri                             | Karnali | Rapti | Mahakali | Seti  | Total |      |
| CHRONIC POVERTY                  | Severity                                | Poverty (CBN) Total (%)                     | 50.9                              | 73.7    | 53.3  | 57.9     | 50.6  | 54.9  |      |
|                                  |   | Poverty (calorie method) Total (%)          | 46.1                              | 58.4    | 43.3  | 46.8     | 45.7  | 48.1  |      |
|                                  |   | Poverty – food poor (%)                     | 36.8                              | 26.7    | 33.9  | 36.6     | 38.7  | 36.1  |      |
|                                  |   | Poverty – non-food poor (%)                 | 38.6                              | 71.7    | 45.0  | 42.6     | 35.1  | 42.2  |      |
|                                  |   | Income male                                 | 0.41                              | 0.42    | 0.40  | 0.44     | 0.39  | 0.42  |      |
|                                  |   | Income female                               | 0.33                              | 0.35    | 0.32  | 0.37     | 0.34  | 0.34  |      |
|                                  |   | Adult illiteracy rate (%)                   | 60.3                              | 73.5    | 61.7  | 54.2     | 67.2  | 63.8  |      |
|                                  |   | Remittances                                 | 17.5                              | 3.3     | 15.0  | 9.3      | 10.1  | 12.0  |      |
|                                  |   | Population density                          | 136                               | 24      | 128   | 131      | 106   | 104   |      |
|                                  |   | Child mortality – all (%)                   | 30.7                              | 51.9    | 23.1  | 25.4     | 34.0  | 31.2  |      |
|                                  |   | Child immunisation – no (%)                 | 10.3                              | 17.9    | 3.1   | 3.9      | 5.6   | 7.7   |      |
|                                  | Nutrition                               | Child stunting (%)                          | 54.2                              | 68.7    | 58.0  | 56.8     | 59.1  | 59.5  |      |
|                                  |   | Child underweight (%)                       | 50.0                              | 51.4    | 50.2  | 48.7     | 52.0  | 50.5  |      |
|                                  |   | Child wasting (%)                           | 8.8                               | 6.1     | 7.8   | 7.7      | 8.7   | 7.8   |      |
|                                  |   | Maternal BMI <18.5 (%)                      | 29.5                              | 22.4    | 16.1  | 29.5     | 30.5  | 27.1  |      |
|                                  | Access to basic public services         | Maternal haemoglobin – anaemia (%)          | 46.6                              | 32.9    | 31.2  | 35.8     | 46.1  | 40.8  |      |
|                                  |   | Health institutions/1000 population         | 1.99                              | 1.92    | 2.26  | 2.22     | 2.23  | 2.12  |      |
|                                  | Standard of living                      | Access to basic services                    | 2.8                               | 3.8     | 2.8   | 2.9      | 3.2   | 3.1   |      |
|                                  |   | Electricity – no (%)                        | 67.5                              | 100.0   | 53.3  | 82.4     | 81.5  | 76.6  |      |
|                                  |   | Drinking water not MDG (%)                  | 27.2                              | 76.7    | 31.7  | 25.0     | 29.2  | 31.4  |      |
|                                  |   | Drinking water not MDG and > 30 minutes (%) | 28.1                              | 76.7    | 31.7  | 28.2     | 32.7  | 33.5  |      |
|                                  |   | Sanitation not MDG (%)                      | 62.3                              | 86.7    | 68.3  | 86.6     | 69.6  | 73.6  |      |
|                                  |   | Floor construction – poor (%)               | 79.4                              | 100.0   | 73.3  | 94.0     | 84.3  | 85.8  |      |
|                                  |   | Wall construction – poor (%)                | 61.0                              | 100.0   | 41.7  | 81.9     | 51.2  | 66.5  |      |
|                                  |   | Roof construction – poor (%)                | 38.6                              | 95.0    | 41.7  | 32.4     | 18.5  | 37.0  |      |
|                                  |   | Cooking – poor (%)                          | 90.1                              | 100.0   | 77.2  | 96.7     | 91.8  | 92.3  |      |
|                                  |   | Assets – none (%)                           | 15.8                              | 31.7    | 21.7  | 35.2     | 32.7  | 27.2  |      |
|                                  |   | Women's empowerment & gender disparity      | Literacy status female (%)        | 29.9    | 8.3   | 23.4     | 25.4  | 14.4  | 20.1 |
|                                  |   |   | Years of schooling female (years) | 1.4     | 0.6   | 1.4      | 1.4   | 0.7   | 1.1  |
|                                  |   |   | Female headed (%)                 | 20.1    | 8.3   | 15.0     | 23.6  | 18.5  | 19.4 |
|                                  | Women participation in local elections  |   | 19.3                              | 19.5    | 18.8  | 18.4     | 18.7  | 19.0  |      |
|                                  | Women in professional occupations       |   | 18.3                              | 13.7    | 13.9  | 12.6     | 12.2  | 14.2  |      |
|                                  | Women in administrative occupations     |   | 9.0                               | 10.8    | 6.8   | 5.9      | 8.5   | 8.3   |      |
| Gender-related development index | 0.41                                    |   | 0.31                              | 0.38    | 0.40  | 0.34     | 0.36  |       |      |
| Remoteness                       | Remoteness health post > 60 minutes (%) | 20.6  | 6.7                               | 10.0    | 40.3  | 26.8     | 25.8  |       |      |
|                                  | Remoteness road head > 60 minutes (%)   | 25.4  | 98.3                              | 0       | 45.4  | 33.9     | 37.2  |       |      |
|                                  | Remoteness market > 60 minutes (%)      | 40.4  | 80.0                              | 23.3    | 76.4  | 40.5     | 52.9  |       |      |
| VULNERABILITY                    | Natural disasters                       | Landslide                                   | 2.4                               | 3.6     | 3.6   | 2.8      | 3.2   | 3.1   |      |
|                                  |   | Drought                                     | 3.4                               | 4.4     | 3.4   | 3.3      | 3.8   | 3.7   |      |
|                                  |   | Earthquake (mean magnitude)                 | 4.37                              | 4.57    | 4.62  | 4.58     | 4.75  | 4.59  |      |
|                                  |   | Flooding                                    | 1.6                               | 1.0     | 1.0   | 1.5      | 1.4   | 1.3   |      |
|                                  | Risk & exposure to health hazard        | Climate vulnerability index                 | 2.8                               | 3.8     | 2.8   | 2.8      | 3.0   | 3.0   |      |
|                                  |   | Child (<5 years) ARI/1000 population        | 438                               | 469     | 218   | 325      | 417   | 376   |      |
|                                  |   | Child (<5 years) Diarrhoea/1000 population  | 194                               | 375     | 171   | 150      | 268   | 235   |      |
|                                  |   | Malaria/1000 population                     | 0.27                              | 0.01    | 0.07  | 0.31     | 0.15  | 0.16  |      |
|                                  |   | Tuberculosis/1000 population                | 0.20                              | 0.01    | 0.14  | 0.16     | 0.15  | 0.13  |      |
|                                  |   | HIV hotspots                                | 223.2                             | 19.8    | 45.6  | 0        | 110.8 | 83.2  |      |
|                                  |   | Caste – Dalit (%)                           | 18.5                              | 16.9    | 13.3  | 13.2     | 19.9  | 16.5  |      |
|                                  |   | Rural (%)                                   | 89.0                              | 100.0   | 95.2  | 95.5     | 94.3  | 93.5  |      |
|                                  |   | Dependency ratio (%)                        | 94.0                              | 90.5    | 92.5  | 91.5     | 94.8  | 93.0  |      |
|                                  |   | Resilience (coping)                         | Loans (%)                         | 57.5    | 40.0  | 75.0     | 69.0  | 62.5  | 62.0 |
|                                  | Migrants – from abroad (%)              |   | 25.9                              | 8.3     | 0     | 5.6      | 11.3  | 13.0  |      |
|                                  | Food insecurity                         | Agricultural land (persons per hectare)     | 9.7                               | 8.9     | 9.6   | 10.1     | 12.5  | 10.2  |      |
|                                  |   | Area of Irrigated land (%)                  | 38.1                              | 21.0    | 32.6  | 34.8     | 40.5  | 33.3  |      |
| Food insecurity summer           |   | 2.83  | 3.07                              | 2.57    | 2.77  | 2.80     | 2.81  |       |      |
|                                  | Food insecurity winter                  | 2.34  | 2.66                              | 2.11    | 2.32  | 2.39     | 2.37  |       |      |

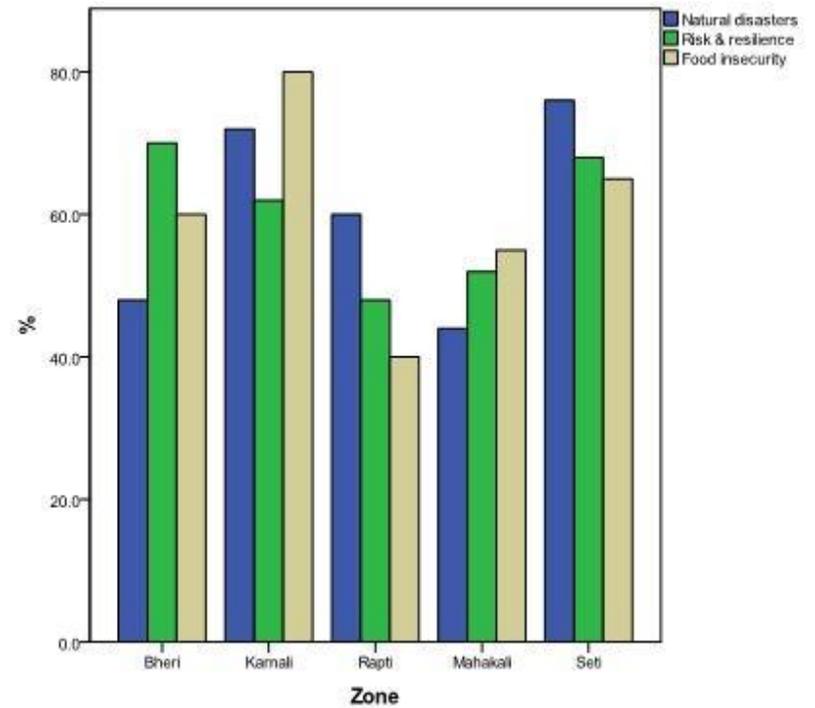
**Table 4.2: Indicators ranked by zone (1 = best and 5 = worst rank)**

| CHRONIC POVERTY   | Dimension                               | Indicator                                  | Mid-West         |                    |                    | Far-West         |                 |
|---|---|--|------------------|--------------------|--------------------|------------------|-----------------|
|   |   |  | Bheri            | Karnali            | Rapti              | Mahakali         | Seti            |
| CHRONIC POVERTY   | Severity                                | Poverty (CBN) Total (%)                    | 2                | 5                  | 3                  | 4                | 1               |
|   |   | Poverty (calorie method) Total (%)         | 3                | 5                  | 1                  | 4                | 2               |
|   |   | Poverty – food poor (%)                    | 4                | 1                  | 2                  | 3                | 5               |
|   |   | Poverty – non-food poor (%)                | 2                | 5                  | 4                  | 3                | 1               |
|   |   | Income male                                | 3                | 2                  | 4                  | 1                | 5               |
|   |   | Income female                              | 4                | 2                  | 5                  | 1                | 3               |
|   |   | Adult illiteracy rate (%)                  | 2                | 5                  | 3                  | 1                | 4               |
|   |   | Remittances                                | 1                | 5                  | 2                  | 4                | 3               |
|   |   | Population density                         | 1                | 5                  | 3                  | 2                | 4               |
|   |   | <b>TOTAL</b>                               |                  | <b>22</b>          | <b>35</b>          | <b>27</b>        | <b>23</b>       |
|   | Health                                  | Child mortality – all (%)                  | 3                | 5                  | 1                  | 2                | 4               |
|   |   | Child immunisation – no (%)                | 4                | 5                  | 1                  | 2                | 3               |
|   | Nutrition                               | Child stunting (%)                         | 1                | 5                  | 3                  | 2                | 4               |
|   |   | Child underweight (%)                      | 2                | 4                  | 3                  | 1                | 5               |
|   |   | Child wasting (%)                          | 5                | 1                  | 3                  | 2                | 4               |
|   |   | Maternal BMI <18.5 (%)                     | 3.5              | 2                  | 1                  | 3.5              | 5               |
|   |   | Maternal haemoglobin – anaemia (%)         | 3                | 5                  | 1                  | 2                | 4               |
|   | <b>TOTAL</b>                            |  | <b>21.5</b>      | <b>27</b>          | <b>13</b>          | <b>14.5</b>      | <b>29</b>       |
|   | Access to basic public services         | Health institutions/1000 population        | 4                | 5                  | 1                  | 3                | 2               |
|   |   | Access to basic services                   | 1.5              | 5                  | 1.5                | 3                | 4               |
|   | Standard of living                      | Electricity – no (%)                       | 2                | 5                  | 1                  | 4                | 3               |
| Drinking water not MDG (%)                              |   | 2  | 5                | 4                  | 1                  | 3                |                 |
| Drinking water not MDG and > 30 minutes (%)             |   | 1  | 5                | 3                  | 2                  | 4                |                 |
| Sanitation not MDG (%)                                  |   | 1  | 5                | 2                  | 4                  | 3                |                 |
| Floor construction – poor (%)                           |   | 2  | 5                | 1                  | 4                  | 3                |                 |
| Wall construction – poor (%)                            |   | 3  | 5                | 1                  | 4                  | 2                |                 |
| Roof construction – poor (%)                            |   | 3  | 5                | 4                  | 2                  | 1                |                 |
| Cooking – poor (%)                                      |   | 2  | 5                | 1                  | 4                  | 3                |                 |
| Assets – none (%)                                       |   | 1  | 3                | 2                  | 5                  | 4                |                 |
| <b>TOTAL</b>  |   |  | <b>22.5</b>      | <b>53</b>          | <b>21.5</b>        | <b>36</b>        | <b>32</b>       |
| Women's empowerment & gender disparity                  | Literacy status female (%)              | 1  | 5                | 3                  | 2                  | 4                |                 |
|   | Years of schooling female (years)       | 2  | 5                | 2                  | 2                  | 4                |                 |
|   | Female headed (%)                       | 4  | 1                | 2                  | 5                  | 3                |                 |
|   | Women participation in local elections  | 2  | 1                | 3                  | 5                  | 4                |                 |
|   | Women in professional occupations       | 1  | 3                | 2                  | 4                  | 5                |                 |
|   | Women in administrative occupations     | 2  | 1                | 4                  | 5                  | 3                |                 |
|   | Gender-related development index        | 1  | 5                | 3                  | 2                  | 4                |                 |
|   | <b>TOTAL</b>                            |  | <b>13</b>        | <b>21</b>          | <b>19</b>          | <b>25</b>        | <b>27</b>       |
| Remoteness  | Remoteness health post > 60 minutes (%) | 3  | 1                | 2                  | 5                  | 4                |                 |
|   | Remoteness road head > 60 minutes (%)   | 2  | 5                | 1                  | 4                  | 3                |                 |
|   | Remoteness market > 60 minutes (%)      | 2  | 5                | 1                  | 4                  | 3                |                 |
| <b>TOTAL RANK</b>                                       |   | <b>7</b>                                   | <b>11</b>        | <b>4</b>           | <b>13</b>          | <b>10</b>        |                 |
| <b>CHRONIC POVERTY TOTAL AND MEAN</b>                   |   | <b>86 (2.3)</b>                            | <b>147 (4.0)</b> | <b>66.5 (1.8)</b>  | <b>111.5 (3.0)</b> | <b>126 (3.4)</b> |                 |
| VULNERABILITY   | Natural disasters                       | Landslide                                  | 1                | 4.5                | 4.5                | 2                | 3               |
|   |   | Drought                                    | 2.5              | 5                  | 2.5                | 1                | 4               |
|   |   | Earthquake (mean magnitude)                | 1                | 2                  | 4                  | 3                | 5               |
|   |   | Flooding                                   | 5                | 1.5                | 1.5                | 4                | 3               |
|   |   | Climate vulnerability index                | 2.5              | 5                  | 2.5                | 1                | 4               |
|   |   | <b>TOTAL</b>                               |                  | <b>12</b>          | <b>18</b>          | <b>15</b>        | <b>11</b>       |
|   | Risk & exposure to health hazard        | Child (<5 years) ARI/1000 population       | 4                | 5                  | 1                  | 2                | 3               |
|   |   | Child (<5 years) Diarrhoea/1000 population | 3                | 5                  | 2                  | 1                | 4               |
|   |   | Malaria/1000 population                    | 4                | 1                  | 2                  | 5                | 3               |
|   |   | Tuberculosis/1000 population               | 5                | 1                  | 2                  | 4                | 3               |
|   |   | HIV hotspots                               | 5                | 2                  | 3                  | 1                | 4               |
|   |   | Caste – Dalit (%)                          | 4                | 3                  | 2                  | 1                | 5               |
|   |   | Rural (%)                                  | 1                | 5                  | 3                  | 4                | 2               |
|   |   | Dependency ratio (%)                       | 4                | 1                  | 3                  | 2                | 5               |
|   | Resilience (coping)                     | Loans (%)                                  | 4                | 5                  | 1                  | 2                | 3               |
|   |   | Migrants – from abroad (%)                 | 1                | 3                  | 5                  | 4                | 2               |
|   | <b>TOTAL</b>                            |  | <b>35</b>        | <b>31</b>          | <b>24</b>          | <b>26</b>        | <b>34</b>       |
|   | <b>VULNERABILITY TOTAL AND MEAN</b>     |  | <b>47 (3.1)</b>  | <b>49 (3.3)</b>    | <b>39 (2.6)</b>    | <b>37 (2.5)</b>  | <b>53 (3.5)</b> |
|   | Food insecurity                         | Agricultural land (persons per hectare)    | 3                | 1                  | 2                  | 4                | 5               |
|   |   | Area of Irrigated land (%)                 | 2                | 5                  | 4                  | 3                | 1               |
|   |   | Food insecurity summer                     | 4                | 5                  | 1                  | 2                | 3               |
| Food insecurity winter                                  |   | 3  | 5                | 1                  | 2                  | 4                |                 |
| <b>TOTAL</b>  |   | <b>12</b>                                  | <b>16</b>        | <b>8</b>           | <b>11</b>          | <b>13</b>        |                 |
| <b>VULNERABILITY AND FOOD INSECURITY TOTAL AND MEAN</b> |   | <b>59 (3.1)</b>                            | <b>65 (3.4)</b>  | <b>47 (2.5)</b>    | <b>48 (2.5)</b>    | <b>66 (3.5)</b>  |                 |
| <b>GRAND TOTAL AND MEAN</b>                             |   | <b>155 (2.8)</b>                           | <b>212 (3.8)</b> | <b>113.5 (2.0)</b> | <b>159.5 (2.8)</b> | <b>192 (3.4)</b> |                 |

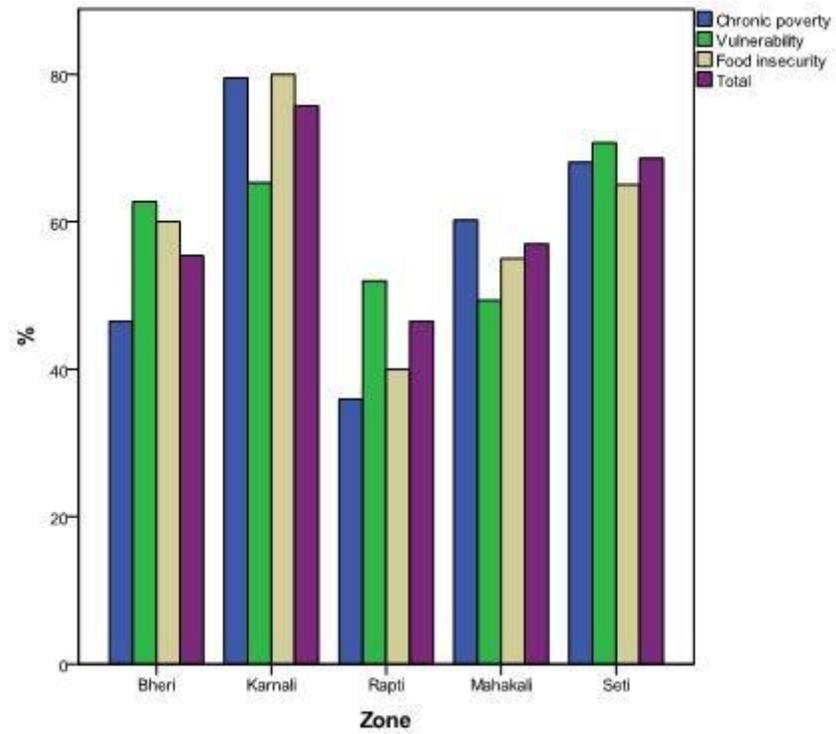
**Figure 4.1 Ranked chronic poverty dimensions (%) by zone by (higher percentage indicative of worse condition)**



**Figure 4.2 Ranked vulnerability dimensions and food insecurity (%) zone (higher percentage indicative of worse condition)**



**Figure 4.3 Ranked Chronic Poverty, Vulnerability, Food Insecurity and Total (%) by zone (higher percentage indicative of worse condition)**

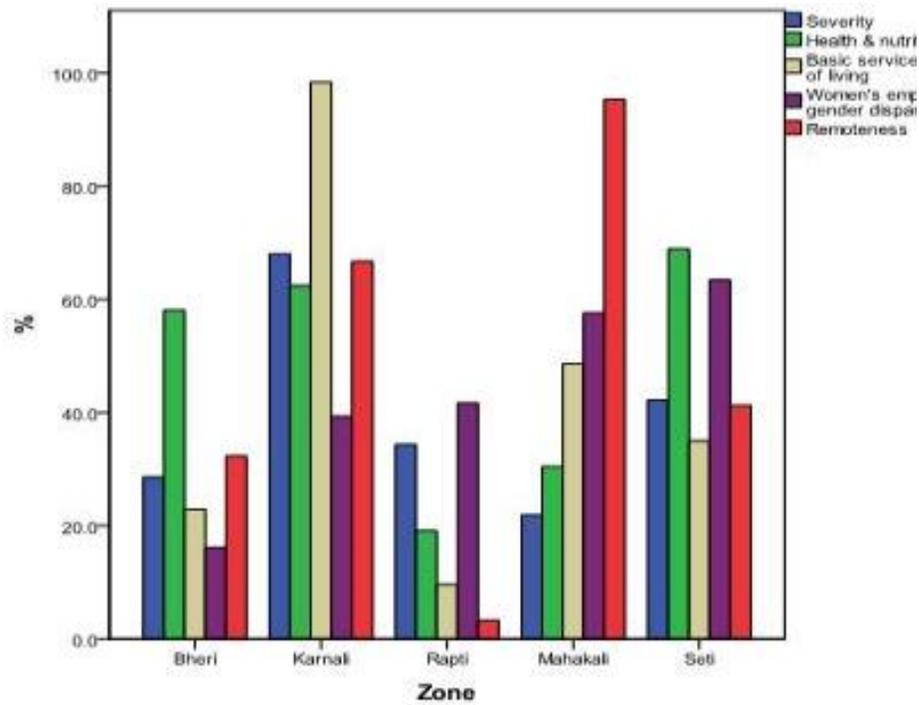


**Table 4.3: Zero-to-one scoring transformations used to derive the zonal composite indices (0 = best, 1 = worst zone)**

| CHRONIC POVERTY   | Dimension                              | Indicator                                   | Mid-West                                   |                     |                     | Far-West            |                     | p                   |                  |
|---|--|---|--|---------------------|---------------------|---------------------|---------------------|---------------------|------------------|
|   |  |   | Bheri                                      | Karnali             | Rapti               | Mahakali            | Seti                |                     |                  |
| CHRONIC POVERTY   | Severity                               | Poverty (CBN) Total (%)                     | .01  | 1.00                | .12                 | .32                 | .0                  |                     |                  |
|   |  | Poverty (calorie method) Total (%)          | .19  | 1.00                | .0                  | .23                 | .16                 |                     |                  |
|   |  | Poverty – food poor (%)                     | .84  | .0                  | .60                 | .83                 | 1.00                |                     |                  |
|   |  | Poverty – non-food poor (%)                 | .10  | 1.00                | .27                 | .20                 | .0                  |                     |                  |
|   |  | Income male                                 | .60  | .40                 | .80                 | .0                  | 1.00                |                     |                  |
|   |  | Income female                               | .80  | .40                 | 1.00                | .0                  | .60                 |                     |                  |
|   |  | Adult illiteracy rate (%)                   | .32  | 1.00                | .39                 | .0                  | .67                 |                     |                  |
|   |  | Remittances                                 | .0   | 1.00                | .18                 | .57                 | .52                 |                     |                  |
|   |  | Population density                          | .0   | 1.00                | .07                 | .04                 | .27                 |                     |                  |
|   | <b>TOTAL</b>                           |   | <b>2.86</b>                                | <b>6.80</b>         | <b>3.43</b>         | <b>2.19</b>         | <b>4.22</b>         | <b>0.036</b>        |                  |
|   | Health                                 | Child mortality – all (%)                   | .26  | 1.00                | .0                  | .08                 | .38                 |                     |                  |
|   |  | Child immunisation – no (%)                 | .49  | 1.00                | .0                  | .05                 | .17                 |                     |                  |
|   | Nutrition                              | Child stunting (%)                          | .0   | 1.00                | .26                 | .18                 | .34                 |                     |                  |
|   |  | Child underweight (%)                       | .39  | .82                 | .45                 | .0                  | 1.00                |                     |                  |
|   |  | Child wasting (%)                           | 1.00                                       | .0                  | .63                 | .59                 | .96                 |                     |                  |
|   |  | Maternal BMI <18.5 (%)                      | .93  | .44                 | .0                  | .93                 | 1.00                |                     |                  |
|   |  | Maternal haemoglobin – anaemia (%)          | 1.00                                       | .11                 | .0                  | .30                 | .97                 |                     |                  |
|   | <b>TOTAL</b>                           |   | <b>4.07</b>                                | <b>4.37</b>         | <b>1.34</b>         | <b>2.13</b>         | <b>4.82</b>         | <b>ns</b>           |                  |
|   | Access to basic public services        | Health institutions/1000 population         | .79  | 1.00                | .0                  | .12                 | .09                 |                     |                  |
|   |  | Access to basic services                    | .0   | 1.00                | .0                  | .10                 | .60                 |                     |                  |
|   | Standard of living                     | Electricity – no (%)                        | .30  | 1.00                | .0                  | .62                 | .60                 |                     |                  |
|   |  | Drinking water not MDG (%)                  | .04  | 1.00                | .13                 | .0                  | .08                 |                     |                  |
|   |  | Drinking water not MDG and > 30 minutes (%) | .0   | 1.00                | .08                 | .00                 | .10                 |                     |                  |
|   |  | Sanitation not MDG (%)                      | .0   | 1.00                | .25                 | 1.00                | .30                 |                     |                  |
|   |  | Floor construction – poor (%)               | .23  | 1.00                | .0                  | .78                 | .41                 |                     |                  |
|   |  | Wall construction – poor (%)                | .33  | 1.00                | .0                  | .69                 | .16                 |                     |                  |
|   |  | Roof construction – poor (%)                | .26  | 1.00                | .30                 | .18                 | .0                  |                     |                  |
|   |  | Cooking – poor (%)                          | .57  | 1.00                | .0                  | .86                 | .64                 |                     |                  |
|   |  | Assets – none (%)                           | .0   | .82                 | .30                 | 1.00                | .87                 |                     |                  |
|   |  | <b>TOTAL</b>                                |  | <b>2.52</b>         | <b>10.82</b>        | <b>1.06</b>         | <b>5.35</b>         | <b>3.85</b>         | <b>&lt;0.001</b> |
|   | Women's empowerment & gender disparity | Literacy status female (%)                  | .0   | 1.00                | .30                 | .21                 | .72                 |                     |                  |
|   |  | Years of schooling female (years)           | .0   | 1.00                | .0                  | .0                  | .87                 |                     |                  |
|   |  | Female headed (%)                           | .77  | .0                  | .44                 | 1.00                | .67                 |                     |                  |
|   |  | Women participation in local elections      | .18  | .0                  | .64                 | 1.00                | .73                 |                     |                  |
|   |  | Women in professional occupations           | .0   | .75                 | .72                 | .93                 | 1.00                |                     |                  |
|   |  | Women in administrative occupations         | .18  | .0                  | .82                 | 1.00                | .47                 |                     |                  |
|   | <b>TOTAL</b>                           |   | <b>1.13</b>                                | <b>2.75</b>         | <b>2.92</b>         | <b>4.03</b>         | <b>4.44</b>         | <b>ns</b>           |                  |
|   | Remoteness                             | Remoteness health post > 60 minutes (%)     | .41  | .0                  | .10                 | 1.00                | .60                 |                     |                  |
|   |  | Remoteness road head > 60 minutes (%)       | .26  | 1.00                | .0                  | .46                 | .34                 |                     |                  |
|   |  | Remoteness market > 60 minutes (%)          | .30  | 1.00                | .0                  | .94                 | .30                 |                     |                  |
|   | <b>TOTAL</b>                           |   | <b>0.97</b>                                | <b>2.00</b>         | <b>.10</b>          | <b>2.86</b>         | <b>1.24</b>         | <b>ns</b>           |                  |
|   | <b>CHRONIC POVERTY TOTAL AND MEAN</b>  |   |  | <b>11.55 (0.30)</b> | <b>26.74 (0.70)</b> | <b>8.85 (0.23)</b>  | <b>16.36 (0.43)</b> | <b>18.57 (0.49)</b> |                  |
|   | VULNERABILITY                          | Natural disasters                           | Landslide                                  | .0                  | 1.00                | 1.00                | .33                 | .67                 |                  |
|   |  |   | Drought                                    | .09                 | 1.00                | .09                 | .0                  | .45                 |                  |
|   |  |   | Earthquake (mean magnitude)                | .0                  | .53                 | .66                 | .55                 | 1.00                |                  |
|   |  |   | Flooding                                   | 1.00                | .0                  | .0                  | .83                 | .67                 |                  |
|   |  |   | Climate vulnerability index                | .0                  | 1.00                | .0                  | .0                  | 0.20                |                  |
|   |  | <b>TOTAL</b>                                |  | <b>1.09</b>         | <b>3.53</b>         | <b>1.75</b>         | <b>1.71</b>         | <b>2.99</b>         | <b>ns</b>        |
|   |  | Risk & exposure to health hazard            | Child (<5 years) ARI/1000 population       | .88                 | 1.00                | .0                  | .43                 | .79                 |                  |
|   |  |   | Child (<5 years) Diarrhoea/1000 population | .20                 | 1.00                | .09                 | .0                  | .52                 |                  |
|   |  |   | Malaria/1000 population                    | .87                 | .0                  | .20                 | 1.00                | .47                 |                  |
|   |  |   | Tuberculosis/1000 population               | 1.00                | .0                  | .68                 | .79                 | .74                 |                  |
|   |  |   | HIV hotspots                               | 1.00                | .09                 | .20                 | .0                  | .50                 |                  |
|   |  |   | Caste – Dalit (%)                          | .79                 | .55                 | .01                 | .0                  | 1.00                |                  |
|   |  |   | Rural (%)                                  | .0                  | 1.00                | 0.56                | 0.59                | 0.48                |                  |
| Resilience (coping)                                     |  | Dependency ratio (%)                        | .81  | .0                  | .47                 | .23                 | 1.00                |                     |                  |
|   |  | Loans (%)                                   | .50  | 1.00                | .0                  | .23                 | .36                 |                     |                  |
|   |  | Migrants – from abroad (%)                  | .0   | 0.68                | 1.00                | .78                 | .56                 |                     |                  |
| <b>TOTAL</b>  |  |   | <b>6.05</b>                                | <b>5.32</b>         | <b>3.21</b>         | <b>3.62</b>         | <b>5.63</b>         | <b>ns</b>           |                  |
| <b>VULNERABILITY TOTAL AND MEAN</b>                     |  |   | <b>7.14 (0.48)</b>                         | <b>8.85 (0.59)</b>  | <b>4.96 (0.33)</b>  | <b>5.33 (0.36)</b>  | <b>8.62 (0.57)</b>  | <b>ns</b>           |                  |
| Food insecurity   |  | Agricultural land (persons per hectare)     | .22  | .0                  | .19                 | .33                 | 1.00                |                     |                  |
|   |  | Area of Irrigated land (%)                  | .12  | 1.00                | .41                 | .29                 | .0                  |                     |                  |
|   |  | Food insecurity summer                      | .52  | 1.00                | .0                  | .40                 | .46                 |                     |                  |
|   |  | Food insecurity winter                      | .22  | .52                 | .0                  | .20                 | .27                 |                     |                  |
| <b>TOTAL</b>  |  | <b>1.08</b>                                 | <b>2.52</b>                                | <b>0.60</b>         | <b>1.22</b>         | <b>1.73</b>         | <b>ns</b>           |                     |                  |
| <b>VULNERABILITY AND FOOD INSECURITY TOTAL AND MEAN</b> |  |   | <b>8.22 (0.43)</b>                         | <b>11.37 (0.60)</b> | <b>5.56 (0.29)</b>  | <b>6.55 (0.34)</b>  | <b>10.35 (0.55)</b> | <b>ns</b>           |                  |
| <b>GRAND TOTAL AND MEAN</b>                             |  |   | <b>19.77 (0.35)</b>                        | <b>38.11 (0.67)</b> | <b>14.41 (0.25)</b> | <b>22.71 (0.40)</b> | <b>28.92 (0.51)</b> | <b>&lt;0.001</b>    |                  |



**Figure 4.4 Chronic poverty composite index dimensions (%) by zone**



**Figure 4.5 Vulnerability and food insecurity composite index dimensions (%) by zone**

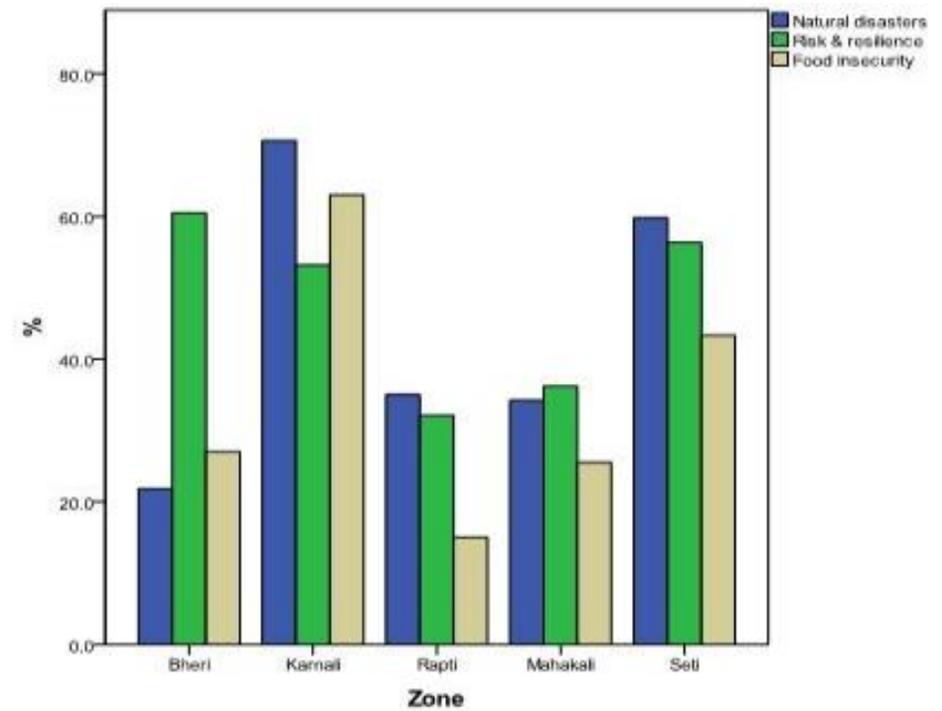
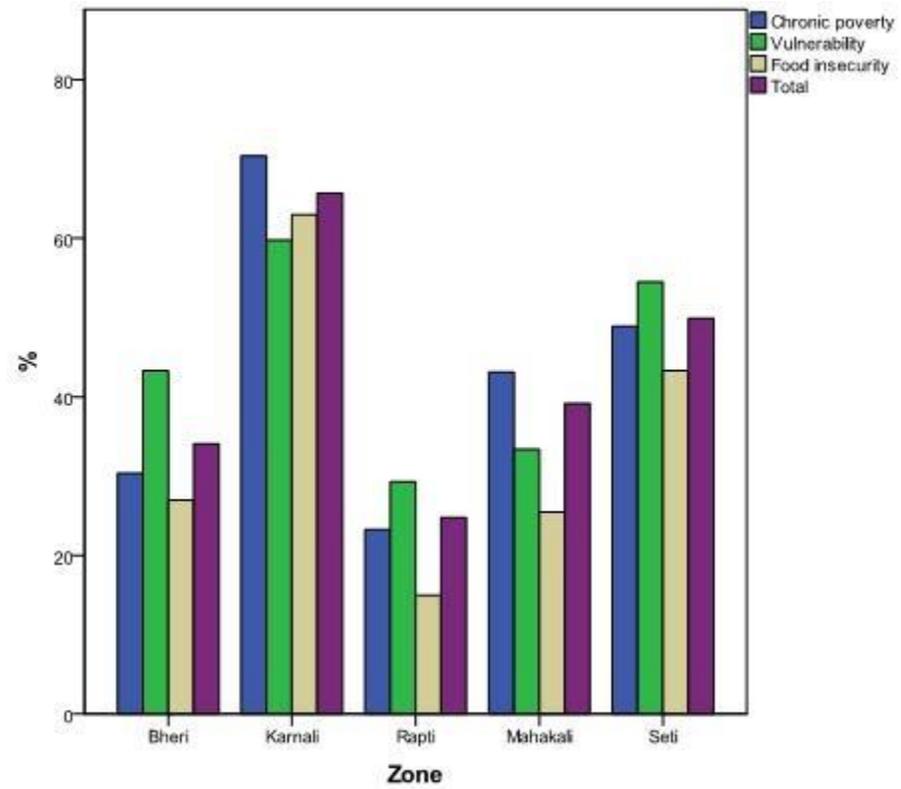


Figure 4.6 Chronic poverty, vulnerability and food insecurity and Total composite index (%) by zone



**Table 4.4: Mean Poverty Gap (PG) by zone**

| Region   | Overall<br>PG | p  | Food<br>PG | p  | Non-food<br>PG | p       |
|----------|---------------|----|------------|----|----------------|---------|
| Bheri    | -667.9        | ns | -425.8     | ns | -430.5         | <<0.001 |
| Karnali  | -778.3        |    | -331.2     |    | -891.9         |         |
| Mahakali | -636.1        |    | -310.7     |    | -535.1         |         |
| Rapti    | -645.3        |    | -458.0     |    | -394.3         |         |
| Seti     | -655.8        |    | -385.4     |    | -385.0         |         |

**Table 4.5: Poverty Gap Index (PGI) by zone**

| Region   | Overall<br>PGI | p  | Food<br>PGI | p  | Non-food<br>PGI | p       |
|----------|----------------|----|-------------|----|-----------------|---------|
| Bheri    | -0.080         | ns | -0.081      | ns | -0.134          | <<0.001 |
| Karnali  | -0.087         |    | -0.059      |    | -0.271          |         |
| Mahakali | -0.086         |    | -0.072      |    | -0.172          |         |
| Rapti    | -0.074         |    | -0.084      |    | -0.122          |         |
| Seti     | -0.075         |    | -0.076      |    | -0.121          |         |

**Table 4.6: Squared Poverty Gap Index (SPGI) by zone**

| Region   | Overall<br>SPGI | p  | Food<br>SPGI | p  | Non-food<br>SPGI | p      |
|----------|-----------------|----|--------------|----|------------------|--------|
| Bheri    | 0.025           | ns | 0.027        | ns | 0.060            | <0.001 |
| Karnali  | 0.028           |    | 0.018        |    | 0.126            |        |
| Mahakali | 0.028           |    | 0.021        |    | 0.083            |        |
| Rapti    | 0.025           |    | 0.028        |    | 0.050            |        |
| Seti     | 0.024           |    | 0.021        |    | 0.056            |        |

**Table 4.7: Variation in indicators by district**

| Dimension                              | Indicator   | Baitadi                    | Bajhang | Bajura | Banke | Bardiya | Dandeldhura | Dailekh | Dang  | Darchula | Dolpa | Doti  | Humla |
|--|---|----------------------------|---------|--------|-------|---------|-------------|---------|-------|----------|-------|-------|-------|
| <b>Severity</b>                        | Poverty (CBN) Total (%)                           | 41.7                       | 41.7    | 62.5   | 43.1  | 47.9    | 58.3        | 77.8    | 53.3  | 70.8     | 83.3  | 63.9  | 100.0 |
|  | Poverty (calorie method) Total (%)                | 47.8                       | 48.9    | 49.3   | 46.5  | 42.0    | 43.9        | 49.8    | 36.0  | 49.0     | 59.3  | 46.0  | 59.5  |
|  | Poverty – food poor (%)                           | 41.7                       | 29.2    | 41.7   | 29.2  | 29.2    | 54.2        | 55.6    | 33.3  | 37.5     | .0    | 63.9  | 66.7  |
|  | Poverty – non-food poor (%)                       | 0.0                        | 20.8    | 50.0   | 30.6  | 37.5    | 33.3        | 69.4    | 45.0  | 54.2     | 83.3  | 36.1  | 100.0 |
|  | Income male                                       | 0.38                       | 0.37    | 0.39   | 0.50  | 0.43    | 0.47        | 0.33    | 0.45  | 0.43     | 0.46  | 0.40  | 0.41  |
|  | Income female                                     | 0.35                       | 0.33    | 0.34   | 0.34  | 0.30    | 0.38        | 0.31    | 0.30  | 0.39     | 0.39  | 0.35  | 0.36  |
|  | Adult illiteracy rate (%)                         | 55.1                       | 70.9    | 72.9   | 46.6  | 60.6    | 56.6        | 60.1    | 47.9  | 58.5     | 71.0  | 64.6  | 80.4  |
|  | Remittances                                       | .0                         | 8.3     | .0     | 23.6  | 18.8    | 8.3         | 5.6     | 15.0  | 12.5     | .0    | 13.9  | .0    |
|  | Population density                                | 154                        | 49      | 50     | 165   | 189     | 82          | 150     | 156   | 53       | 4     | 102   | 7     |
|  | <b>Health</b>                                     | Child mortality – all (%)  | 38.4    | 67.9   | 35.2  | 26.0    | 28.2        | 26.1    | 31.2  | 22.7     | 29.6  | 41.7  | 38.7  |
| Child immunisation – no (%)            |   | 0.0                        | 50.0    | 0.0    | 8.3   | 10.3    | 17.6        | 29.2    | 9.3   | 11.1     | 80.0  | 10.0  | 11.8  |
| <b>Nutrition</b>                       | Child stunting (%)                                | 62.3                       | 65.8    | 65.5   | 47.1  | 39.3    | 58.1        | 61.3    | 46.7  | 62.0     | 69.1  | 60.8  | 72.0  |
|  | Child underweight (%)                             | 53.6                       | 53.0    | 54.1   | 48.5  | 41.7    | 48.4        | 54.8    | 49.3  | 50.1     | 46.2  | 53.8  | 52.7  |
|  | Child wasting (%)                                 | 8.2                        | 7.4     | 7.4    | 11.9  | 10.4    | 6.8         | 8.6     | 11.7  | 6.5      | 4.1   | 8.5   | 5.2   |
|  | Maternal BMI <18.5 (%)                            | 24.2                       | 16.9    | 28.9   | 34.2  | 31.9    | 37.6        | 31.6    | 17.9  | 33.8     | 10.5  | 28.4  | 3.8   |
|  | Maternal haemoglobin – anaemia (%)                | 17.4                       | 21.5    | 32.9   | 62.3  | 62.7    | 18.3        | 24.7    | 48.6  | 25.4     | 40.5  | 31.3  | 50.0  |
| <b>Access to basic public services</b> | Health institutions/1000                          | 3.6                        | 2.0     | 1.8    | 1.6   | 1.2     | 1.9         | 3.3     | 1.1   | 2.5      | 1.5   | 2.5   | 1.8   |
| <b>Standard of living</b>              | Electricity – no (%)                              | 33.3                       | 100.0   | 100.0  | 50.0  | 81.3    | 87.5        | 100.0   | 53.3  | 100.0    | 100.0 | 75.0  | 100.0 |
|  | Drinking water not MDG (%)                        | 58.3                       | 50.0    | .0     | 2.8   | .0      | 16.7        | 66.7    | 31.7  | 16.7     | 100.0 | 88.9  | 75.0  |
|  | Drinking water not MDG and >30 mins (%)           | 66.7                       | 50.0    | .0     | 2.8   | 2.1     | 16.7        | 66.7    | 31.7  | 20.8     | 100.0 | 88.9  | 75.0  |
|  | Sanitation not MDG (%)                            | 100.0                      | 83.3    | 66.7   | 56.9  | 77.1    | 91.7        | 63.9    | 68.3  | 83.3     | 100.0 | 88.9  | 83.3  |
|  | Floor construction – poor (%)                     | 100.0                      | 87.5    | 95.8   | 63.9  | 89.6    | 100.0       | 100.0   | 73.3  | 100.0    | 100.0 | 97.2  | 100.0 |
|  | Wall construction – poor (%)                      | 100.0                      | 95.8    | 95.8   | 51.4  | 10.4    | 95.8        | 97.2    | 41.7  | 95.8     | 100.0 | 88.9  | 100.0 |
|  | Roof construction – poor (%)                      | 0.0                        | 66.7    | 20.8   | 16.7  | 72.9    | 0.0         | 44.4    | 41.7  | 0.0      | 100.0 | 0.0   | 100.0 |
|  | Cooking – poor (%)                                | 100.0                      | 100.0   | 100.0  | 74.6  | 100.0   | 100.0       | 100.0   | 77.2  | 100.0    | 100.0 | 91.7  | 100.0 |
|  | Assets – none (%)                                 | 33.3                       | 58.3    | 50.0   | 16.7  | 20.8    | 70.8        | 11.1    | 21.7  | 45.8     | 25.0  | 47.2  | 33.3  |
|  | <b>Women's empowerment &amp; gender disparity</b> | Literacy status female (%) | 23.3    | 7.8    | 9.0   | 43.0    | 28.0        | 20.6    | 21.4  | 38.3     | 20.3  | 11.7  | 15.2  |
| Years of schooling female (years)      |   | 1.1                        | .5      | .6     | 1.8   | 1.4     | 1.2         | 1.0     | 1.8   | 1.5      | .7    | .7    | .4    |
| Female headed (%)                      |   | 50.0                       | 12.5    | 16.7   | 19.2  | 16.7    | 12.5        | 13.9    | 15.0  | 16.7     | 0.0   | 30.6  | .0    |
| Women participation in local elections |   | 17.65                      | 18.78   | 18.71  | 19.22 | 19.81   | 18.2        | 18.43   | 18.05 | 19.31    | 21.63 | 18.08 | 18.8  |
| Women in professional occupations      |   | 12.71                      | 9.29    | 14.06  | 22.29 | 19.01   | 9.90        | 10.51   | 16.65 | 9.82     | 15.08 | 7.91  | 11.88 |
| Women in administrative occupations    |   | 7.52                       | 9.21    | 3.20   | 12.52 | 10.87   | 5.61        | 5.82    | 11.61 | 4.93     | 8.52  | 8.76  | 3.21  |
| Gender-related development index       |   | 0.36                       | 0.29    | 0.27   | 0.46  | 0.41    | 0.40        | 0.36    | 0.39  | 0.39     | 0.34  | 0.37  | 0.34  |

|   |   |       |       |       |       |       |       |       |       |       |       |       |       |
|---|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Remoteness</b>                           | Remoteness health post >60 mins (%)     | 0.0   | 58.3  | 50.0  | 6.9   | 18.8  | 50.0  | 50.0  | 10.0  | 41.7  | 0.0   | 0.0   | 33.3  |
|   | Remoteness road head >60 mins (%)       | 91.7  | 50.0  | 100.0 | 0.0   | 0.0   | 50.0  | 66.7  | 0.0   | 54.2  | 100.0 | 44.4  | 100.0 |
|   | Remoteness market >60 mins (%)          | 83.3  | 54.2  | 50.0  | 5.6   | 35.4  | 91.7  | 100.0 | 23.3  | 100.0 | 100.0 | 66.7  | 100.0 |
| <b>Natural disasters</b>                    | Landslide                               | 4     | 4     | 3     | 1     | 1     | 2     | 3     | 3     | 4     | 4     | 4     | 3     |
|   | Drought                                 | 3     | 4     | 4     | 2     | 3     | 4     | 5     | 2     | 3     | 4     | 4     | 4     |
|   | Earthquake (mean magnitude)             | 0.0   | 4.93  | 4.76  | 0.0   | 0.0   | 0.0   | 4.40  | 0.0   | 4.57  | 5.20  | 0.0   | 4.48  |
|   | Flooding                                | 1     | 1     | 1     | 2     | 3     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
|   | Climate vulnerability index             | 3     | 3     | 3     | 1     | 2     | 3     | 4     | 2     | 3     | 4     | 3     | 3     |
| <b>Risk &amp; exposure to health hazard</b> | Child (<5 years) ARI/1000               | 238.0 | 307.0 | 633.0 | 492.0 | 855.0 | 380.0 | 257.0 | 166.0 | 174.0 | 379.0 | 356.0 | 622.0 |
|   | Child (<5 years) Diarrhoea/1000         | 187.0 | 245.0 | 452.0 | 153.0 | 213.0 | 192.0 | 207.0 | 74.0  | 160.0 | 406.0 | 273.0 | 605.0 |
|   | Malaria/1000                            | 0.13  | 0.01  | 0.0   | 0.98  | 0.27  | 0.30  | 0.0   | 0.16  | 0.0   | 0.0   | 0.04  | 0.0   |
|   | Tuberculosis/1000                       | 0.076 | 0.059 | 0.034 | 0.413 | 0.294 | 0.064 | 0.069 | 0.371 | 0.072 | 0.009 | 0.085 | 0.0   |
|   | HIV hotspots                            | .0    | .0    | 36.0  | 378.0 | 200.0 | .0    | 73.0  | 194.0 | .0    | .0    | 58.0  | 36.0  |
|   | Caste – Dalit (%)                       | 12.5  | 15.1  | 21.5  | 10.4  | 8.9   | 18.3  | 23.5  | 11.0  | 8.4   | 8.1   | 24.0  | 12.3  |
|   | Rural (%)                               | 100.0 | 100.0 | 100.0 | 77.3  | 97.4  | 93.6  | 100.0 | 95.2  | 100.0 | 100.0 | 93.0  | 100.0 |
|   | Dependency ratio (%)                    | 86.94 | 110.6 | 88.8  | 81.5  | 97.3  | 111.5 | 95.7  | 92.5  | 83.6  | 70.8  | 88.0  | 84.3  |
| <b>Resilience (coping)</b>                  | Loans (%)                               | 25.0  | 83.3  | 54.2  | 50.0  | 70.8  | 58.3  | 47.2  | 75.0  | 75.0  | .0    | 58.3  | 50.0  |
|   | Migrants – from abroad (%)              | 8.3   | 12.5  | .0    | 43.1  | 8.3   | 12.5  | 47.2  | .0    | 4.2   | .0    | 27.8  | 16.7  |
| <b>Food insecurity</b>                      | Agricultural land (persons per hectare) | 11.7  | 14.2  | 12.8  | 8.7   | 8.4   | 11.3  | 10.4  | 8.0   | 8.9   | 11.9  | 12.6  | 6.8   |
|   | Area of Irrigated land (%)              | 24.5  | 34.3  | 27.5  | 13.2  | 67.4  | 31.8  | 34.5  | 63.2  | 17.6  | 14.5  | 41.1  | 15.2  |
|   | Food insecurity summer                  | 2.9   | 2.5   | 3.3   | 2.7   | 2.4   | 3.2   | 3.1   | 2.0   | 3.0   | 3.0   | 3.0   | 3.1   |
|   | Food insecurity winter                  | 2.4   | 2.1   | 2.9   | 2.3   | 2.4   | 2.5   | 2.7   | 2.0   | 2.4   | 3.0   | 2.5   | 2.6   |

**Table 4.7: Variation in indicators by district (continued)**

| Dimension   | Indicator                               | Jajarkot | Jumla | Kailali | Kalikot | Kanchanpur | Mugu  | Pyuthan | Rolpa | Rukum | Salyan | Surket |
|---|---|----------|-------|---------|---------|------------|-------|---------|-------|-------|--------|--------|
| <b>Severity</b>                                   | Poverty (CBN) Total (%)                 | 33.3     | 58.3  | 44.0    | 83.3    | 52.1       | 41.7  | 30.6    | 87.5  | 62.5  | 80.8   | 50.0   |
|   | Poverty (calorie Total (%)              | 46.9     | 54.0  | 42.4    | 51.7    | 46.3       | 67.4  | 36.7    | 49.8  | 50.3  | 43.5   | 45.5   |
|   | Poverty - food poor (%)                 | 25.0     | 8.3   | 29.8    | 25.0    | 35.4       | 33.1  | 22.2    | 54.2  | 25.0  | 33.3   | 43.3   |
|   | Poverty - non-food poor (%)             | 33.3     | 58.3  | 34.5    | 83.3    | 35.4       | 33.3  | 25.0    | 66.7  | 62.5  | 58.3   | 31.7   |
|   | Income male                             | 0.38     | 0.42  | .45     | 0.40    | 0.49       | 0.43  | 0.35    | 0.40  | 0.43  | 0.36   | 0.43   |
|   | Income female                           | 0.33     | 0.37  | 0.37    | 0.26    | 0.35       | 0.37  | 0.32    | 0.31  | 0.31  | 0.33   | 0.37   |
|   | Adult illiteracy rate (%)               | 71.9     | 73.4  | 53.5    | 66.8    | 46.4       | 75.9  | 62.2    | 68.9  | 70.0  | 59.5   | 62.2   |
|   | Remittances                             | 16.7     | 8.3   | 11.9    | .0      | 10.4       | 8.3   | 13.9    | 16.7  | .0    | 4.2    | 16.7   |
|   | Population density                      | 60       | 35    | 191     | 61      | 235        | 12    | 162     | 112   | 65    | 146    | 118    |
| <b>Health</b>                                     | Child mortality – all (%)               | 37.8     | 52.5  | 31.4    | 21.2    | 26.3       | 52.4  | 25.5    | 20.4  | 44.1  | 28.0   | 24.5   |
|   | Child immunisation – no (%)             | .0       | 10.0  | .0      | 8.3     | 6.4        | 18.2  | .0      | 5.6   | 21.4  | .0     | 9.8    |
| <b>Nutrition</b>                                  | Child stunting (%)                      | 65.6     | 67.8  | 43.7    | 65.2    | 44.9       | 69.6  | 59.0    | 62.3  | 65.2  | 56.8   | 57.4   |
|   | Child underweight (%)                   | 56.9     | 49.5  | 45.0    | 55.7    | 42.6       | 53.1  | 49.7    | 50.7  | 54.3  | 47.0   | 47.9   |
|   | Child wasting (%)                       | 7.2      | 6.3   | 10.6    | 9.2     | 9.2        | 5.8   | 6.8     | 6.6   | 7.2   | 6.7    | 5.9    |
|   | Maternal BMI <18.5 (%)                  | 23.2     | 37.8  | 35.6    | 39.1    | 29.4       | 21.7  | 14.6    | 15.2  | 12.8  | 18.0   | 20.6   |
|   | Maternal haemoglobin – anaemia (%)      | 28.0     | 15.6  | 59.3    | 30.4    | 53.3       | 26.1  | 21.0    | 13.8  | 17.4  | 18.0   | 30.6   |
| <b>Access to basic public services</b>            | Health institutions/1000 population     | 2.0      | 2.0   | 1.0     | 2.2     | .9         | 2.1   | 2.9     | 2.6   | 1.9   | 2.7    | 2.0    |
| <b>Standard of living</b>                         | Electricity – no (%)                    | 91.7     | 100.0 | 73.8    | 100.0   | 70.8       | 100.0 | 63.9    | 100.0 | 100.0 | 100.0  | 53.3   |
|   | Drinking water not MDG (%)              | .0       | 100.0 | 6.0     | 100.0   | 6.3        | 8.3   | 25.0    | 25.0  | 45.8  | 41.7   | 60.0   |
|   | Drinking water not MDG and >30 mins (%) | .0       | 100.0 | 13.1    | 100.0   | 8.3        | 8.3   | 25.0    | 25.0  | 45.8  | 58.3   | 61.7   |
|   | Sanitation not MDG (%)                  | 83.3     | 58.3  | 100.0   | 100.0   | 77.1       | 91.7  | 66.7    | 100.0 | 100.0 | 100.0  | 51.7   |
|   | Floor construction – poor (%)           | 91.7     | 100.0 | 72.6    | 100.0   | 85.4       | 100.0 | 83.3    | 100.0 | 100.0 | 100.0  | 75.0   |
|   | Wall construction – poor (%)            | 100.0    | 100.0 | 9.5     | 100.0   | 39.6       | 100.0 | 83.3    | 100.0 | 95.8  | 95.8   | 83.3   |
|   | Roof construction – poor (%)            | .0       | 100.0 | 11.9    | 75.0    | 6.3        | 100.0 | 33.3    | 87.5  | 75.0  | 66.7   | 41.7   |
|   | Cooking – poor (%)                      | 100.0    | 100.0 | 86.7    | 100.0   | 95.7       | 100.0 | 86.1    | 100.0 | 100.0 | 100.0  | 92.9   |
|   | Assets – none (%)                       | 25.0     | .0    | 14.3    | 41.7    | 20.8       | 58.3  | 25.0    | 16.7  | 37.5  | 50.0   | 11.7   |
| <b>Women's empowerment &amp; gender disparity</b> | Literacy status female (%)              | 15.2     | 9.3   | 32.3    | 10.7    | 37.2       | 5.2   | 22.8    | 14.9  | 16.3  | 24.5   | 42.0   |
|   | Years of schooling female (years)       | 1.2      | .6    | 1.4     | .9      | 1.8        | .3    | 1.4     | .7    | 1.3   | 1.6    | 1.8    |
|   | Female headed (%)                       | 33.3     | .0    | 15.5    | 8.3     | 22.9       | 33.3  | 16.7    | 33.3  | 20.8  | 33.3   | 25.0   |
|   | Women participation in local elections  | 18.26    | 19.85 | 18.8    | 17.79   | 18.5       | 19.55 | 18.34   | 19.3  | 18.97 | 21.02  | 18.99  |
|   | Women in professional occupations       | 21.09    | 16.72 | 20.54   | 14.49   | 18.0       | 10.42 | 11.04   | 14.57 | 11.31 | 16.02  | 18.66  |
|   | Women in administrative occupations     | 7.46     | 6.98  | 11.78   | 31.78   | 5.42       | 3.29  | 4.23    | 3.72  | 8.77  | 5.94   | 8.48   |
|   | Gender-related development index        | .328     | .316  | .428    | .274    | .442       | .263  | .399    | .357  | .364  | .382   | .475   |
| <b>Remoteness</b>                                 | Remoteness health post >60 mins (%)     | 33.3     | .0    | 22.6    | .0      | 6.3        | .0    | 38.9    | 100.0 | 95.8  | 4.2    | 18.3   |
|   | Remoteness road head >60 mins (%)       | 91.7     | 100.0 | 6.0     | 100.0   | .0         | 91.7  | 16.7    | 91.7  | 95.8  | 45.8   | 38.3   |
|   | Remoteness market >60 mins (%)          | 50.0     | 100.0 | 22.6    | 100.0   | 45.8       | .0    | 52.8    | 100.0 | 100.0 | 83.3   | 48.3   |

|   |   |       |       |       |       |       |       |       |       |       |       |       |
|---|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Natural disasters</b>                    | Landslide                               | 4     | 3     | 1     | 3     | 1     | 5     | 3     | 4     | 4     | 3     | 3     |
|   | Drought                                 | 5     | 4     | 2     | 5     | 3     | 5     | 3     | 4     | 4     | 4     | 2     |
|   | Earthquake (mean magnitude)             | 4.4   | 4.4   | 4.6   | 4.5   | 4.6   | 4.3   | .0    | .0    | 4.6   | .0    | .0    |
|   | Flooding                                | 1     | 1     | 3     | 1     | 3     | 1     | 1     | 1     | 1     | 1     | 1     |
|   | Climate vulnerability index             | 5     | 3     | 2     | 4     | 2     | 5     | 2     | 3     | 3     | 4     | 2     |
| <b>Risk &amp; exposure to health hazard</b> | Child (<5 years) ARI/1000               | 278.0 | 585.0 | 518.0 | 286.0 | 507.0 | 474.0 | 200.0 | 234.0 | 297.0 | 191.0 | 310.0 |
|   | Child (<5 years) Diarrhoea/1000         | 242.0 | 266.0 | 114.0 | 256.0 | 61.0  | 340.0 | 141.0 | 228.0 | 230.0 | 182.0 | 157.0 |
|   | Malaria/1000                            | 0.0   | 0.0   | .66   | .02   | .80   | 0.0   | 0.07  | 0.02  | 0.02  | 0.09  | 0.12  |
|   | Tuberculosis/1000                       | 0.03  | 0.02  | 0.52  | 0.03  | 0.41  | 0.01  | 0.10  | 0.10  | .08   | 0.07  | 0.18  |
|   | HIV hotspots                            | 91.0  | .0    | 377.0 | 63.0  | .0    | .0    | 16.0  | .0    | .0    | 18.0  | 374.0 |
|   | Caste – Dalit (%)                       | 26.7  | 15.7  | 12.5  | 29.0  | 13.6  | 19.4  | 18.0  | 16.1  | 6.8   | 14.5  | 23.0  |
|   | Rural (%)                               | 100.0 | 100.0 | 91.9  | 100.0 | 85.2  | 100.0 | 99.5  | 100.0 | 100.0 | 100.0 | 85.8  |
| Dependency ratio (%)                        | 130.6                                   | 48.1  | 94.9  | 95.0  | 90.8  | 154.2 | 71.3  | 98.2  | 93.9  | 104.2 | 97.9  |       |
| <b>Resilience (coping)</b>                  | Loans (%)                               | 66.7  | 25.0  | 60.7  | 41.7  | 75.0  | 83.3  | 63.9  | 79.2  | 70.8  | 79.2  | 60.0  |
|   | Migrants – from abroad (%)              | 16.7  | 8.3   | 7.1   | 16.7  | 12.5  | .0    | .0    | .0    | .0    | 4.2   | 8.3   |
| <b>Food insecurity</b>                      | Agricultural land (persons per hectare) | 9.0   | 11.5  | 9.6   | 7.2   | 8.6   | 7.0   | 10.1  | 8.8   | 12.2  | 9.1   | 11.7  |
|   | Area of Irrigated land (%)              | 20.8  | 11.7  | 63.9  | 48.8  | 65.5  | 14.7  | 22.0  | 25.5  | 27.9  | 24.4  | 54.5  |
|   | Food insecurity summer                  | 3.0   | 3.2   | 2.4   | 2.7   | 1.9   | 3.3   | 2.5   | 2.9   | 2.6   | 2.9   | 2.9   |
|   | Food insecurity winter                  | 2.2   | 2.5   | 2.2   | 2.6   | 2.0   | 2.6   | 2.1   | 2.3   | 2.1   | 2.0   | 2.1   |

**Table 4.8: Comparison (%) between some key indicators in the UNICEF study conducted in Mid- and Far-West in 2009 and NLSS and other databases**

| Indicator (%)      | Mid-West |             |         |             |        |             | Far-West |             |         |             |            |             |
|--------------------|----------|-------------|---------|-------------|--------|-------------|----------|-------------|---------|-------------|------------|-------------|
|                    | Rolpa    |             | Kalikot |             | Mugu   |             | Bajhang  |             | Kailali |             | Kanchanpur |             |
|                    | UNICEF   | NLSS<br>etc | UNICEF  | NLSS<br>etc | UNICEF | NLSS<br>etc | UNICEF   | NLSS<br>etc | UNICEF  | NLSS<br>etc | UNICEF     | NLSS<br>etc |
| <b>Stunting</b>    | 62       | 62          | 66      | 65          | 68     | 70          | 62       | 66          | 34      | 44          | 36         | 45          |
| <b>Underweight</b> | 34       | 51          | 51      | 56          | 47     | 53          | 37       | 53          | 36      | 45          | 34         | 43          |
| <b>Wasting</b>     | 5        | 7           | 13      | 9           | 8      | 6           | 6        | 7           | 17      | 11          | 15         | 9           |

**Table 4.9: Indicators ranked by district (1 = best and 23 = worst rank)**

| Dimension                              | Indicator                               | Baitadi     | Bajhang      | Bajura       | Banke        | Bardiya     | Dandeldhura | Dailekh      | Dang         | Darchula    | Dolpa        | Doti         | Humla        |
|--|---|-------------|--------------|--------------|--------------|-------------|-------------|--------------|--------------|-------------|--------------|--------------|--------------|
| Severity                               | Poverty (CBN) Total (%)                 | 4.0         | 4.0          | 14.5         | 6.0          | 8.0         | 12.5        | 18.0         | 11.0         | 17.0        | 20.5         | 16.0         | 23.0         |
|  | Poverty (calorie method) Total (%)      | 12.0        | 13.0         | 15.0         | 10.0         | 3.0         | 6.0         | 17.0         | 1.0          | 14.0        | 21.0         | 8.0          | 22.0         |
|  | Poverty – food poor (%)                 | 16.5        | 8.0          | 16.5         | 8.0          | 8.0         | 19.5        | 21.0         | 12.5         | 15.0        | 1.0          | 22.0         | 23.0         |
|  | Poverty – non-food poor (%)             | 1.0         | 2.0          | 14.0         | 4.0          | 12.0        | 7.0         | 20.0         | 13.0         | 15.0        | 21.5         | 11.0         | 23.0         |
|  | Income male                             | 11.0        | 14.5         | 10.0         | 13.0         | 22.0        | 3.0         | 20.0         | 21.0         | 2.0         | 1.0          | 12.0         | 8.0          |
|  | Income female                           | 18.0        | 20.0         | 17.0         | 1.0          | 8.5         | 3.0         | 23.0         | 5.0          | 8.5         | 4.0          | 15.0         | 13.0         |
|  | Adult illiteracy rate (%)               | 5.0         | 17.0         | 20.0         | 2.0          | 10.0        | 6.0         | 9.0          | 3.0          | 7.0         | 18.0         | 13.0         | 23.0         |
|  | Remittances                             | 5.0         | 13.5         | 20.5         | 1.0          | 2.0         | 13.5        | 16.0         | 6.0          | 9.0         | 20.5         | 7.5          | 20.5         |
|  | Population density                      | 7.0         | 19.0         | 18.0         | 4.0          | 3.0         | 13.0        | 8.0          | 6.0          | 17.0        | 23.0         | 12.0         | 22.0         |
|  | <b>TOTAL</b>                            |             | <b>79.5</b>  | <b>111.0</b> | <b>145.5</b> | <b>49.0</b> | <b>76.5</b> | <b>83.5</b>  | <b>152.0</b> | <b>78.5</b> | <b>104.5</b> | <b>130.5</b> | <b>116.5</b> |
| Health                                 | Child mortality – all (%)               | 16.0        | 23.0         | 14.0         | 6.0          | 10.0        | 7.0         | 12.0         | 3.0          | 11.0        | 18.0         | 17.0         | 20.0         |
|  | Child immunisation – no (%)             | 3.5         | 22.0         | 3.5          | 9.5          | 15.0        | 18.0        | 21.0         | 11.0         | 16.0        | 23.0         | 13.5         | 17.0         |
| Nutrition                              | Child stunting (%)                      | 14.0        | 19.0         | 17.0         | 5.0          | 1.0         | 8.0         | 11.0         | 4.0          | 12.0        | 21.0         | 10.0         | 23.0         |
|  | Child underweight (%)                   | 17.0        | 15.0         | 19.0         | 8.0          | 1.0         | 7.0         | 21.0         | 9.0          | 12.0        | 4.0          | 18.0         | 14.0         |
|  | Child wasting (%)                       | 15.0        | 13.0         | 14.0         | 23.0         | 20.0        | 9.0         | 17.0         | 22.0         | 6.0         | 1.0          | 16.0         | 2.0          |
|  | Maternal BMI <18.5 (%)                  | 12.0        | 6.0          | 14.0         | 19.0         | 17.0        | 21.0        | 16.0         | 7.0          | 18.0        | 2.0          | 13.0         | 1.0          |
|  | Maternal haemoglobin – anaemia (%)      | 3.5         | 8.0          | 16.0         | 22.0         | 23.0        | 6.0         | 9.0          | 18.0         | 10.0        | 17.0         | 15.0         | 19.0         |
| <b>TOTAL</b>                           |   | <b>81.0</b> | <b>106.0</b> | <b>97.5</b>  | <b>92.5</b>  | <b>87.0</b> | <b>76.0</b> | <b>107.0</b> | <b>74.0</b>  | <b>85.0</b> | <b>86.0</b>  | <b>102.5</b> | <b>96.0</b>  |
| Access to basic public services        | Health institutions/1000                | 1.0         | 10.0         | 16.0         | 18.0         | 20.0        | 15.0        | 2.0          | 21.0         | 7.0         | 19.0         | 6.0          | 17.0         |
| Standard of living                     | Electricity – no (%)                    | 1.0         | 17.5         | 17.5         | 2.0          | 9.0         | 10.0        | 17.5         | 3.5          | 17.5        | 17.5         | 8.0          | 17.5         |
|  | Drinking water not MDG (%)              | 16.0        | 15.0         | 2.0          | 4.0          | 2.0         | 8.5         | 18.0         | 12.0         | 8.5         | 22.0         | 20.0         | 19.0         |
|  | Drinking water not MDG and >30 mins (%) | 17.5        | 14.0         | 1.5          | 4.0          | 3.0         | 8.0         | 17.5         | 12.0         | 9.0         | 22.0         | 20.0         | 19.0         |
|  | Sanitation not MDG (%)                  | 20.0        | 11.5         | 5.5          | 2.0          | 8.5         | 15.5        | 4.0          | 7.0          | 11.5        | 20.0         | 14.0         | 11.5         |
|  | Floor construction – poor (%)           | 17.5        | 7.0          | 10.0         | 1.0          | 8.0         | 17.5        | 17.5         | 3.0          | 17.5        | 17.5         | 11.0         | 17.5         |
|  | Wall construction – poor (%)            | 19.5        | 11.5         | 11.5         | 5.0          | 2.0         | 11.5        | 15.0         | 4.0          | 11.5        | 19.5         | 8.0          | 19.5         |
|  | Roof construction – poor (%)            | 3.0         | 14.5         | 9.0          | 8.0          | 16.0        | 3.0         | 13.0         | 11.5         | 3.0         | 21.5         | 3.0          | 21.5         |
|  | Cooking – poor (%)                      | 15.5        | 15.5         | 15.5         | 1.0          | 15.5        | 15.5        | 15.5         | 2.0          | 15.5        | 15.5         | 5.0          | 15.5         |
|  | Assets – none (%)                       | 13.5        | 21.5         | 19.5         | 5.5          | 7.5         | 23.0        | 2.0          | 9.0          | 17.0        | 11.0         | 18.0         | 13.5         |
|  | <b>TOTAL</b>                            |             | <b>124.5</b> | <b>138.0</b> | <b>108.0</b> | <b>50.5</b> | <b>91.5</b> | <b>127.5</b> | <b>122.0</b> | <b>85.0</b> | <b>118.0</b> | <b>185.5</b> | <b>113.0</b> |
| Women's empowerment & gender disparity | Literacy status female (%)              | 4.0         | 13.0         | 17.0         | 7.0          | 14.0        | 2.5         | 9.0          | 5.0          | 6.0         | 18.0         | 11.0         | 23.0         |
|  | Years of schooling female (years)       | 2.0         | 13.0         | 17.0         | 8.0          | 12.0        | 3.0         | 11.0         | 5.0          | 1.0         | 19.0         | 16.0         | 23.0         |
|  | Female headed (%)                       | 23.0        | 5.5          | 11.5         | 14.0         | 11.5        | 5.5         | 7.0          | 8.0          | 11.5        | 2.0          | 18.0         | 2.0          |
|  | Women participation in local elections  | 23.0        | 13.0         | 14.0         | 9.0          | 4.0         | 19.0        | 16.0         | 21.0         | 7.0         | 1.0          | 20.0         | 11.5         |
|  | Women in professional occupations       | 14.0        | 22.0         | 13.0         | 1.0          | 4.0         | 20.0        | 18.0         | 8.0          | 21.0        | 10.0         | 23.0         | 15.0         |

|                                  |   |               |               |               |               |               |               |               |              |               |               |               |               |
|----------------------------------|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|---------------|
|                                  | Women in administrative occupations                     | 11.0          | 6.0           | 23.0          | 2.0           | 5.0           | 16.0          | 15.0          | 4.0          | 18.0          | 9.0           | 8.0           | 22.0          |
|                                  | Gender-related development index                        | 13.0          | 20.0          | 21.0          | 2.0           | 5.0           | 7.0           | 14.0          | 9.0          | 8.0           | 16.0          | 11.0          | 17.0          |
|                                  | <b>TOTAL RANK</b>                                       | <b>90.0</b>   | <b>92.5</b>   | <b>116.5</b>  | <b>43.0</b>   | <b>55.5</b>   | <b>73.0</b>   | <b>90.0</b>   | <b>60.0</b>  | <b>72.5</b>   | <b>75.0</b>   | <b>107.0</b>  | <b>113.5</b>  |
| Remoteness                       | Remoteness health post > 60 mins (%)                    | 3.5           | 21.0          | 19.0          | 9.0           | 12.0          | 19.0          | 19.0          | 10.0         | 17.0          | 3.5           | 3.5           | 14.5          |
|                                  | Remoteness road head > 60 mins (%)                      | 15.5          | 10.5          | 21.0          | 2.5           | 2.5           | 10.5          | 13.0          | 2.5          | 12.0          | 21.0          | 8.0           | 21.0          |
|                                  | Remoteness market > 60 mins (%)                         | 13.5          | 11.0          | 8.5           | 2.0           | 5.0           | 15.0          | 19.5          | 4.0          | 19.5          | 19.5          | 12.0          | 19.5          |
|                                  | <b>TOTAL</b>  | <b>32.5</b>   | <b>42.5</b>   | <b>48.5</b>   | <b>13.5</b>   | <b>19.5</b>   | <b>44.5</b>   | <b>51.5</b>   | <b>16.5</b>  | <b>48.5</b>   | <b>44.0</b>   | <b>23.5</b>   | <b>55.0</b>   |
|                                  | <b>CHRONIC POVERTY TOTAL AND MEAN</b>                   | <b>407.5</b>  | <b>490.0</b>  | <b>516.0</b>  | <b>248.5</b>  | <b>330.0</b>  | <b>404.5</b>  | <b>522.5</b>  | <b>314.0</b> | <b>428.5</b>  | <b>521.0</b>  | <b>462.5</b>  | <b>613.5</b>  |
|                                  |   | <b>(11.3)</b> | <b>(13.6)</b> | <b>(14.3)</b> | <b>(6.9)</b>  | <b>(9.2)</b>  | <b>(11.2)</b> | <b>(14.5)</b> | <b>(8.7)</b> | <b>(11.9)</b> | <b>(14.5)</b> | <b>(12.8)</b> | <b>(17.0)</b> |
| Natural disasters                | Landslide   | 18.0          | 18.0          | 9.5           | 2.5           | 2.5           | 5             | 9.5           | 9.5          | 18.0          | 18.0          | 18.0          | 9.5           |
|                                  | Drought   | 7.0           | 14.5          | 14.5          | 2.5           | 7.0           | 14.5          | 21.5          | 2.5          | 7.0           | 14.5          | 14.5          | 14.5          |
|                                  | Earthquake (mean magnitude)                             | 5.5           | 22.0          | 21.0          | 5.5           | 5.5           | 5.5           | 14.0          | 5.5          | 17.5          | 23.0          | 5.5           | 15.0          |
|                                  | Flooding  | 10            | 10.0          | 10.0          | 20.0          | 22.0          | 10.0          | 10.0          | 10.0         | 10.0          | 10.0          | 10.0          | 10.0          |
|                                  | Climate vulnerability index                             | 12.5          | 12.5          | 12.5          | 1.0           | 4.0           | 12.5          | 19.5          | 4.5          | 12.5          | 19.5          | 12.5          | 12.5          |
|                                  | <b>TOTAL</b>  | <b>53.0</b>   | <b>77.0</b>   | <b>67.5</b>   | <b>31.5</b>   | <b>41.0</b>   | <b>47.5</b>   | <b>74.5</b>   | <b>32.0</b>  | <b>65.0</b>   | <b>85.0</b>   | <b>60.5</b>   | <b>61.5</b>   |
| Risk & exposure to health hazard | Child (<5 yrs) ARI/1000                                 | 6.0           | 11.0          | 22.0          | 17.0          | 23.0          | 15.0          | 7.0           | 1.0          | 2.0           | 14.0          | 13.0          | 21.0          |
|                                  | Child (<5 yrs) Diarrhoea/1000                           | 9.0           | 16.0          | 22.0          | 5.0           | 12.0          | 10.0          | 11.0          | 2.0          | 7.0           | 21.0          | 19.0          | 23.0          |
|                                  | Malaria/1000  | 17.0          | 9.0           | 4.5           | 23.0          | 19.0          | 20.0          | 4.5           | 18.0         | 4.5           | 4.5           | 13.0          | 4.5           |
|                                  | Tuberculosis/1000                                       | 13.0          | 8.0           | 7.0           | 21.5          | 19.0          | 9.0           | 10.0          | 20.0         | 11.0          | 2.0           | 15.0          | 1.0           |
|                                  | HIV hotspots  | 5.5           | 5.5           | 13.5          | 23.0          | 20.0          | 5.5           | 17.0          | 19.0         | 5.5           | 5.5           | 15.0          | 13.5          |
|                                  | Caste – Dalit (%)                                       | 9.0           | 12.0          | 18.0          | 5.0           | 4.0           | 16.0          | 20.0          | 6.0          | 3.0           | 2.0           | 21.0          | 7.0           |
|                                  | Rural (%)   | 16.5          | 16.5          | 16.5          | 1.0           | 8.0           | 6.0           | 16.5          | 7.0          | 16.5          | 16.5          | 5.0           | 16.5          |
|                                  | Dependency ratio (%)                                    | 7.0           | 20.0          | 9.0           | 4.0           | 16.0          | 21.0          | 15.0          | 11.0         | 5.0           | 2.0           | 8.0           | 6.0           |
| Resilience (coping)              | Loans (%)   | 21.5          | 1.5           | 16.0          | 17.5          | 8.5           | 14.5          | 19.0          | 6.0          | 6.0           | 23.0          | 14.5          | 17.5          |
|                                  | Migrants – from abroad (%)                              | 11.5          | 8.0           | 20.0          | 2.0           | 11.5          | 8.0           | 1.0           | 20.0         | 15.5          | 20.0          | 3.0           | 5.0           |
|                                  | <b>TOTAL</b>  | <b>116.0</b>  | <b>107.5</b>  | <b>148.5</b>  | <b>119.0</b>  | <b>141.0</b>  | <b>125.0</b>  | <b>121.0</b>  | <b>110.0</b> | <b>76.0</b>   | <b>110.5</b>  | <b>126.5</b>  | <b>115.0</b>  |
|                                  | <b>VULNERABILITY TOTAL AND NEAN</b>                     | <b>169.0</b>  | <b>184.5</b>  | <b>216.0</b>  | <b>150.5</b>  | <b>182.0</b>  | <b>172.5</b>  | <b>195.5</b>  | <b>142.0</b> | <b>141.0</b>  | <b>195.0</b>  | <b>187.0</b>  | <b>176.5</b>  |
|                                  |   | <b>(11.3)</b> | <b>(12.3)</b> | <b>(14.4)</b> | <b>(10.0)</b> | <b>(12.1)</b> | <b>(11.5)</b> | <b>(13.0)</b> | <b>(9.5)</b> | <b>(9.4)</b>  | <b>(13.0)</b> | <b>(12.5)</b> | <b>(11.8)</b> |
| Food insecurity                  | Agricultural land (persons per hectare)                 | 17.0          | 23.0          | 22.0          | 7.0           | 5.0           | 15.0          | 14.0          | 4.0          | 9.0           | 19.0          | 21.0          | 1.0           |
|                                  | Area of Irrigated land (%)                              | 14.0          | 9.0           | 12.0          | 22.0          | 1.0           | 10.0          | 8.0           | 4.0          | 18.0          | 21.0          | 7.0           | 19.0          |
|                                  | Food insecurity summer                                  | 13.0          | 6.0           | 22.0          | 9.0           | 4.0           | 21.0          | 18.0          | 2.0          | 15.5          | 15.5          | 14.0          | 19.0          |
|                                  | Food insecurity winter                                  | 14.0          | 4.0           | 22.0          | 10.0          | 12.0          | 17.0          | 21.0          | 2.5          | 13.0          | 23.0          | 16.0          | 19.0          |
|                                  | <b>TOTAL RANK</b>                                       | <b>58.0</b>   | <b>42.0</b>   | <b>78.0</b>   | <b>48.0</b>   | <b>22.0</b>   | <b>63.0</b>   | <b>61.0</b>   | <b>12.5</b>  | <b>55.5</b>   | <b>78.5</b>   | <b>58.0</b>   | <b>58.0</b>   |
|                                  | <b>VULNERABILITY AND FOOD INSECURITY TOTAL AND MEAN</b> | <b>227.0</b>  | <b>226.5</b>  | <b>294.0</b>  | <b>198.5</b>  | <b>204.0</b>  | <b>235.5</b>  | <b>256.5</b>  | <b>154.5</b> | <b>196.5</b>  | <b>274.0</b>  | <b>245.0</b>  | <b>234.5</b>  |
|                                  |   | <b>(11.9)</b> | <b>(11.9)</b> | <b>(15.5)</b> | <b>(10.4)</b> | <b>(10.7)</b> | <b>(12.4)</b> | <b>(13.5)</b> | <b>(8.1)</b> | <b>(10.3)</b> | <b>(14.4)</b> | <b>(12.9)</b> | <b>(12.3)</b> |
|                                  | <b>GRAND TOTAL AND MEAN</b>                             | <b>634.5</b>  | <b>716.5</b>  | <b>810.0</b>  | <b>447.0</b>  | <b>534.0</b>  | <b>640.0</b>  | <b>779.0</b>  | <b>468.5</b> | <b>625.0</b>  | <b>795.0</b>  | <b>707.5</b>  | <b>848.0</b>  |
|                                  |   | <b>(11.5)</b> | <b>(13.0)</b> | <b>(14.7)</b> | <b>(8.1)</b>  | <b>(90.7)</b> | <b>(11.6)</b> | <b>(14.2)</b> | <b>(8.5)</b> | <b>(11.4)</b> | <b>(14.5)</b> | <b>(12.9)</b> | <b>(15.4)</b> |

**Table 4.9: Indicators ranked by district (1 = best and 23 = worst rank) (continued)**

| Dimension                              | Indicator                               | Jajarkot                          | Jumla        | Kailali      | Kalikot      | Kanchanpur   | Mugu         | Pyuthan      | Rolpa       | Rukum        | Salyan       | Surket       |             |
|--|---|-----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|--------------|--------------|--------------|-------------|
| Severity                               | Poverty (CBN) Total (%)                 | 2.0                               | 12.5         | 7.0          | 20.5         | 10.0         | 4.0          | 1.0          | 22.0        | 14.5         | 19.0         | 9.0          |             |
|  | Poverty (calorie Total (%)              | 11.0                              | 20.0         | 4.0          | 19.0         | 9.0          | 23.0         | 2.0          | 16.0        | 18.0         | 5.0          | 7.0          |             |
|  | Poverty – food poor (%)                 | 5.0                               | 2.0          | 10.0         | 5.0          | 14.0         | 11.0         | 3.0          | 19.5        | 5.0          | 12.5         | 18.0         |             |
|  | Poverty – non-food poor (%)             | 7.0                               | 16.5         | 9.0          | 21.5         | 10.0         | 7.0          | 3.0          | 19.0        | 18.0         | 16.5         | 5.0          |             |
|  | Income male                             | 14.5                              | 4.0          | 6.5          | 23.0         | 9.0          | 5.0          | 17.0         | 18.5        | 18.5         | 16.0         | 6.5          |             |
|  | Income female                           | 19.0                              | 12.0         | 6.0          | 16.0         | 2.0          | 10.0         | 22.0         | 14.0        | 7.0          | 21.0         | 11.0         |             |
|  | Adult illiteracy rate (%)               | 19.0                              | 21.0         | 4.0          | 14.0         | 1.0          | 22.0         | 11.5         | 15.0        | 16.0         | 8.0          | 11.0         |             |
|  | Remittances                             | 4.0                               | 13.5         | 10.0         | 20.5         | 11.0         | 13.5         | 7.5          | 4.0         | 20.5         | 17.0         | 4.0          |             |
|  | Population density                      | 16.0                              | 20.0         | 2.0          | 15           | 1.0          | 21.0         | 5.0          | 11.0        | 14.0         | 9.0          | 10.0         |             |
|  | <b>TOTAL</b>                            |                                   | <b>97.5</b>  | <b>121.5</b> | <b>58.5</b>  | <b>154.5</b> | <b>67.0</b>  | <b>116.5</b> | <b>72.0</b> | <b>139.0</b> | <b>131.5</b> | <b>124.0</b> | <b>81.5</b> |
| Health                                 | Child mortality – all (%)               | 15.0                              | 22.0         | 13.0         | 2.0          | 8.0          | 21.0         | 5.0          | 1.0         | 19.0         | 9.0          | 4.0          |             |
|  | Child immunisation – no (%)             | 3.5                               | 13.5         | 3.5          | 9.5          | 8.0          | 19.0         | 3.5          | 7.0         | 20.0         | 3.5          | 12.0         |             |
| Nutrition                              | Child stunting (%)                      | 18.0                              | 20.0         | 2.0          | 15.0         | 3.0          | 22.0         | 9.0          | 13.0        | 16.0         | 6.0          | 7.0          |             |
|  | Child underweight (%)                   | 23.0                              | 10.0         | 3.0          | 22.0         | 2.0          | 16.0         | 11.0         | 13.0        | 20.0         | 5.0          | 6.0          |             |
|  | Child wasting (%)                       | 11.0                              | 5.0          | 21.0         | 19.0         | 18.0         | 3.0          | 10.0         | 7.0         | 12.0         | 8.0          | 4.0          |             |
|  | Maternal BMI <18.5 (%)                  | 11.0                              | 22.0         | 20.0         | 23.0         | 15.0         | 10.0         | 4.0          | 5.0         | 3.0          | 8.0          | 9.0          |             |
|  | Maternal haemoglobin – anaemia (%)      | 12.0                              | 2.0          | 21.0         | 13.0         | 20.0         | 11.0         | 7.0          | 1.0         | 3.5          | 5.0          | 14.0         |             |
| <b>TOTAL</b>                           |   | <b>93.5</b>                       | <b>94.5</b>  | <b>83.5</b>  | <b>103.5</b> | <b>74.0</b>  | <b>102.0</b> | <b>49.5</b>  | <b>47.0</b> | <b>93.5</b>  | <b>44.5</b>  | <b>56.0</b>  |             |
| Access to basic public services        | Health institutions/1000 population     | 12.5                              | 11.0         | 22.0         | 8.0          | 23.0         | 9.0          | 3.0          | 5.0         | 14.0         | 4.0          | 12.5         |             |
| Standard of living                     | Electricity – no (%)                    | 22.0                              | 20.0         | 8.0          | 15.0         | 2.5          | 21.0         | 10.0         | 16.0        | 19.0         | 12.0         | 1.0          |             |
|  | Drinking water not MDG (%)              | 11.0                              | 20.0         | 9.0          | 15.0         | 4.0          | 23.0         | 8.0          | 16.0        | 10.0         | 5.0          | 2.5          |             |
|  | Drinking water not MDG and >30 mins (%) | 21.0                              | 18.0         | 10.0         | 14.0         | 4.0          | 20.0         | 9.0          | 22.0        | 15.0         | 7.0          | 6.0          |             |
|  | Sanitation not MDG (%)                  | 11.0                              | 17.5         | 7.0          | 17.5         | 6.0          | 17.5         | 5.0          | 17.5        | 17.5         | 17.5         | 3.5          |             |
|  | Floor construction – poor (%)           | 2.0                               | 22.0         | 5.0          | 22.0         | 6.0          | 7.0          | 10.5         | 10.5        | 14.0         | 13.0         | 17.0         |             |
|  | Wall construction – poor (%)            | 1.5                               | 22.0         | 7.0          | 22.0         | 5.5          | 5.5          | 10.5         | 10.5        | 13.0         | 15.0         | 16.0         |             |
|  | Roof construction – poor (%)            | 11.5                              | 3.0          | 20.0         | 20.0         | 8.5          | 15.5         | 5.5          | 20.0        | 20.0         | 20.0         | 1.0          |             |
|  | Cooking – poor (%)                      | 22.0                              | 20.0         | 8.0          | 15.0         | 2.5          | 21.0         | 10.0         | 16.0        | 19.0         | 12.0         | 1.0          |             |
|  | Assets – none (%)                       | 15.5                              | 21.0         | 5.0          | 21.0         | 2.5          | 15.5         | 6.0          | 15.5        | 18.0         | 9.0          | 7.0          |             |
|  | <b>TOTAL</b>                            |                                   | <b>133.5</b> | <b>188.0</b> | <b>104.0</b> | <b>179.0</b> | <b>72.5</b>  | <b>174.0</b> | <b>81.0</b> | <b>156.0</b> | <b>179.5</b> | <b>118.0</b> | <b>79.5</b> |
|  | Women's empowerment & gender disparity  | Literacy status female (%)        | 22.0         | 20.0         | 8.0          | 15.0         | 2.5          | 21.0         | 10.0        | 16.0         | 19.0         | 12.0         | 1.0         |
|  |   | Years of schooling female (years) | 21.0         | 18.0         | 10.0         | 14.0         | 4.0          | 20.0         | 9.0         | 22.0         | 15.0         | 7.0          | 6.0         |
| Female headed (%)                      |   | 20.5                              | 2.0          | 9.0          | 4.0          | 16.0         | 20.5         | 11.5         | 20.5        | 15.0         | 20.5         | 17.0         |             |
| Women participation in local elections |   | 18.0                              | 3.0          | 11.5         | 22.0         | 15.0         | 5.5          | 5.5          | 17.0        | 8.0          | 10.0         | 2.0          |             |
| Women in professional occupations      |   | 2.0                               | 7.0          | 3.0          | 12.0         | 6.0          | 19.0         | 17.0         | 11.0        | 16.0         | 9.0          | 5.0          |             |
| Women in administrative occupations    |   | 12.0                              | 13.0         | 3.0          | 1.0          | 17.0         | 21.0         | 19.0         | 20.0        | 7.0          | 14.0         | 10.0         |             |

|                                  |   |               |               |               |               |               |               |              |               |               |               |               |
|----------------------------------|---|---------------|---------------|---------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|---------------|
|                                  | Gender-related development index                        | 18.0          | 19.0          | 4.0           | 22.0          | 3.0           | 23.0          | 6.0          | 15.0          | 12.0          | 10.0          | 1.0           |
|                                  | <b>TOTAL</b>  | <b>113.5</b>  | <b>82.5</b>   | <b>48.5</b>   | <b>90.0</b>   | <b>63.5</b>   | <b>130.0</b>  | <b>78.0</b>  | <b>121.5</b>  | <b>92.0</b>   | <b>82.5</b>   | <b>42.0</b>   |
| Remoteness                       | Remoteness health post > 60 mins (%)                    | 9.0           | 17.5          | 2.0           | 17.5          | 6.0           | 17.5          | 5.0          | 17.5          | 17.5          | 17.5          | 4.0           |
|                                  | Remoteness road head > 60 mins (%)                      | 19.5          | 19.5          | 1.0           | 19.5          | 3.0           | 19.5          | 6.5          | 19.5          | 11.5          | 11.5          | 6.5           |
|                                  | Remoteness market > 60 mins (%)                         | 3.0           | 21.5          | 7.0           | 17.5          | 6.0           | 21.5          | 10.0         | 19.0          | 17.5          | 14.5          | 11.5          |
|                                  | <b>TOTAL</b>  | <b>31.5</b>   | <b>58.5</b>   | <b>10.0</b>   | <b>54.5</b>   | <b>15.0</b>   | <b>58.5</b>   | <b>21.5</b>  | <b>56.0</b>   | <b>46.5</b>   | <b>43.5</b>   | <b>22.0</b>   |
|                                  | <b>CHRONIC POVERTY TOTAL AND MEAN</b>                   | <b>469.5</b>  | <b>545.0</b>  | <b>304.5</b>  | <b>581.5</b>  | <b>292.0</b>  | <b>581.0</b>  | <b>302.0</b> | <b>519.5</b>  | <b>543.0</b>  | <b>412.5</b>  | <b>281.0</b>  |
|                                  |   | <b>(13.0)</b> | <b>(15.1)</b> | <b>(8.5)</b>  | <b>(16.2)</b> | <b>(8.1)</b>  | <b>(16.1)</b> | <b>(8.4)</b> | <b>(14.4)</b> | <b>(15.1)</b> | <b>(11.5)</b> | <b>(7.8)</b>  |
| Natural disasters                | Landslide   | 18.0          | 9.5           | 2.5           | 9.5           | 2.5           | 23.0          | 9.5          | 18.0          | 18.0          | 18.0          | 9.5           |
|                                  | Drought   | 21.5          | 14.5          | 2.5           | 21.5          | 7.0           | 21.5          | 7.0          | 14.5          | 14.5          | 14.5          | 2.5           |
|                                  | Earthquake (mean magnitude)                             | 12.0          | 13.0          | 17.5          | 16.0          | 19.0          | 11.0          | 5.5          | 5.5           | 20.0          | 5.5           | 5.5           |
|                                  | Flooding  | 10.0          | 10.0          | 22.0          | 10.0          | 22.0          | 10.0          | 10.0         | 10.0          | 10.0          | 10.0          | 10.0          |
|                                  | Climate vulnerability index                             | 22.5          | 12.5          | 4.5           | 19.0          | 4.0           | 22.5          | 4.5          | 12.5          | 12.5          | 19.0          | 4.5           |
|                                  | <b>TOTAL</b>  | <b>84</b>     | <b>59.5</b>   | <b>49.0</b>   | <b>76.0</b>   | <b>54.5</b>   | <b>88.0</b>   | <b>36.5</b>  | <b>60.5</b>   | <b>75.0</b>   | <b>67.0</b>   | <b>32.0</b>   |
| Risk & exposure to health hazard | Child (<5 years) ARI/1000                               | 8.0           | 20.0          | 19.0          | 9.0           | 18.0          | 16.0          | 4.0          | 5.0           | 10.0          | 3.0           | 12.0          |
|                                  | Child (<5 years) Diarrhoea/1000                         | 15.0          | 18.0          | 3.0           | 17.0          | 1.0           | 20.0          | 4.0          | 13.0          | 14.0          | 8.0           | 6.0           |
|                                  | Malaria/1000  | 4.5           | 4.5           | 21.0          | 11.0          | 22.0          | 4.5           | 14.0         | 11.0          | 11.0          | 15.0          | 16.0          |
|                                  | Tuberculosis/1000                                       | 6.0           | 4.0           | 23.0          | 5.0           | 21.5          | 3.0           | 16.0         | 17.0          | 14.0          | 12.0          | 18.0          |
|                                  | HIV hotspots  | 18.0          | 5.5           | 22.0          | 16.0          | 5.5           | 5.5           | 11.0         | 5.5           | 5.5           | 12.0          | 21.0          |
|                                  | Caste – Dalit (%)                                       | 22.0          | 13.0          | 8.0           | 23.0          | 10.0          | 17.0          | 15.0         | 14.0          | 1.0           | 11.0          | 19.0          |
|                                  | Rural (%)   | 16.5          | 16.5          | 4.0           | 16.5          | 2.0           | 16.5          | 9.0          | 16.5          | 16.5          | 16.5          | 3.0           |
|                                  | Dependency ratio (%)                                    | 22.0          | 1.0           | 13.0          | 14.0          | 10.0          | 23.0          | 3.0          | 18.0          | 12.0          | 19.0          | 17.0          |
| Resilience (coping)              | Loans (%)   | 10.0          | 21.5          | 12.0          | 20.0          | 6.0           | 1.5           | 11.0         | 3.5           | 8.5           | 3.5           | 13.0          |
|                                  | Migrants – from abroad (%)                              | 5.0           | 11.5          | 14.0          | 5.0           | 8.0           | 20.0          | 20.0         | 20.0          | 20.0          | 15.5          | 11.5          |
|                                  | <b>TOTAL</b>  | <b>127.0</b>  | <b>115.5</b>  | <b>139.0</b>  | <b>136.5</b>  | <b>104.0</b>  | <b>127.0</b>  | <b>107.0</b> | <b>123.5</b>  | <b>112.5</b>  | <b>115.5</b>  | <b>136.5</b>  |
|                                  | <b>VULNERABILITY TOTAL AND MEAN</b>                     | <b>211.0</b>  | <b>175.0</b>  | <b>188.0</b>  | <b>212.5</b>  | <b>158.5</b>  | <b>215.0</b>  | <b>143.5</b> | <b>184.0</b>  | <b>187.5</b>  | <b>182.5</b>  | <b>168.5</b>  |
|                                  |   | <b>(14.1)</b> | <b>(11.7)</b> | <b>(12.5)</b> | <b>(14.2)</b> | <b>(10.6)</b> | <b>(14.3)</b> | <b>(9.6)</b> | <b>(12.3)</b> | <b>(12.5)</b> | <b>(12.2)</b> | <b>(11.3)</b> |
| Food insecurity                  | Agricultural land (persons per hectare)                 | 15.5          | 15.5          | 4.0           | 15.5          | 7.0           | 15.5          | 3.0          | 15.5          | 15.5          | 15.5          | 6.0           |
|                                  | Area of Irrigated land (%)                              | 14.5          | 3.5           | 13.0          | 3.5           | 8.0           | 3.5           | 16.0         | 23.0          | 22.0          | 7.0           | 11.0          |
|                                  | Food insecurity summer                                  | 17.0          | 20.0          | 3.0           | 8.0           | 1.0           | 23.0          | 5.0          | 11.0          | 7.0           | 12.0          | 10.0          |
|                                  | Food insecurity winter                                  | 9.0           | 15.0          | 8.0           | 20.0          | 1.0           | 18.0          | 7.0          | 11.0          | 6.0           | 2.5           | 5.0           |
|                                  | <b>TOTAL RANK</b>                                       | <b>56.0</b>   | <b>54.0</b>   | <b>28.0</b>   | <b>47.0</b>   | <b>17.0</b>   | <b>60.0</b>   | <b>31.0</b>  | <b>60.5</b>   | <b>50.5</b>   | <b>37.0</b>   | <b>32.0</b>   |
|                                  | <b>VULNERABILITY AND FOOD INSECURITY TOTAL AND MEAN</b> | <b>267.0</b>  | <b>229.0</b>  | <b>216.0</b>  | <b>259.5</b>  | <b>175.5</b>  | <b>275.0</b>  | <b>174.5</b> | <b>244.5</b>  | <b>238.0</b>  | <b>219.5</b>  | <b>200.5</b>  |
|                                  |   | <b>(14.1)</b> | <b>(12.1)</b> | <b>(11.4)</b> | <b>(13.7)</b> | <b>(9.2)</b>  | <b>(14.5)</b> | <b>(9.2)</b> | <b>(12.9)</b> | <b>(12.5)</b> | <b>(11.6)</b> | <b>(10.6)</b> |
|                                  | <b>GRAND TOTAL AND MEAN</b>                             | <b>736.5</b>  | <b>774.0</b>  | <b>520.5</b>  | <b>841.0</b>  | <b>467.5</b>  | <b>856.0</b>  | <b>476.5</b> | <b>764.0</b>  | <b>781.0</b>  | <b>632.0</b>  | <b>481.5</b>  |
|                                  |   | <b>(13.4)</b> | <b>(14.1)</b> | <b>(9.5)</b>  | <b>(15.3)</b> | <b>(8.5)</b>  | <b>(15.6)</b> | <b>(8.7)</b> | <b>(13.9)</b> | <b>(14.2)</b> | <b>(11.5)</b> | <b>(8.8)</b>  |

**Table 4.10: Total Rank by District and overall position (1 = best, 23 = worst district)**

| District    | Zone     | Ranking         |               |                 |                                 | Grand Total |
|-------------|----------|-----------------|---------------|-----------------|---------------------------------|-------------|
|             |          | Chronic Poverty | Vulnerability | Food Insecurity | Vulnerability & Food Insecurity |             |
| Baitadi     | Mahakali | 9               | 7             | 16              | 11                              | 10          |
| Bajhang     | Seti     | 14              | 14            | 8               | 10                              | 13          |
| Bajura      | Seti     | 15              | 23            | 22              | 23                              | 20          |
| Banke       | Bheri    | 1               | 4             | 10              | 5                               | 1           |
| Bardiya     | Bheri    | 7               | 11            | 3               | 7                               | 7           |
| Dandeldhura | Mahakali | 8               | 8             | 21              | 14                              | 11          |
| Dailekh     | Bheri    | 18              | 19            | 20              | 18                              | 17          |
| Dang        | Rapti    | 6               | 2             | 1               | 1                               | 3           |
| Darchula    | Mahakali | 11              | 1             | 13              | 4                               | 8           |
| Dolpa       | Karnali  | 17              | 18            | 23              | 21                              | 19          |
| Doti        | Seti     | 12              | 15            | 16              | 17                              | 12          |
| Humla       | Karnali  | 23              | 10            | 16              | 13                              | 22          |
| Jajarkot    | Bheri    | 13              | 20            | 14              | 20                              | 14          |
| Jumla       | Karnali  | 20              | 9             | 12              | 12                              | 16          |
| Kailali     | Seti     | 5               | 17            | 4               | 8                               | 6           |
| Kalikot     | Karnali  | 22              | 21            | 9               | 19                              | 21          |
| Kanchanpur  | Mahakali | 3               | 5             | 2               | 3                               | 2           |
| Mugu        | Karnali  | 21              | 22            | 18              | 22                              | 23          |
| Pyuthan     | Rapti    | 4               | 3             | 5               | 2                               | 4           |
| Rolpa       | Rapti    | 16              | 13            | 19              | 16                              | 15          |
| Rukum       | Rapti    | 19              | 16            | 11              | 15                              | 18          |
| Salyan      | Rapti    | 10              | 12            | 7               | 9                               | 9           |
| Surket      | Bheri    | 2               | 6             | 6               | 6                               | 5           |

**Table 4.11: Zero-to-one scoring transformation and the mean composite indices by district (0 = best and 1 = worst)**

| Dimension   | Indicator                              | Baitadi     | Bajhang     | Bajura      | Banke       | Bardiya     | Dandeldhura | Dailekh     | Dang        | Darchula    | Dolpa       | Doti        | Humla |
|---|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------|
| <b>Severity</b>                                   | Poverty (CBN) Total (%)                | .16         | .16         | .46         | .18         | .25         | .40         | .68         | .33         | .58         | .76         | .48         | 1.00  |
|   | Poverty (calorie method) Total (%)     | .37         | .41         | .42         | .34         | .19         | .25         | .44         | .00         | .41         | .74         | .32         | .75   |
|   | Poverty – food poor (%)                | .63         | .44         | .63         | .44         | .44         | .81         | .83         | .50         | .56         | .0          | .96         | 1.00  |
|   | Poverty – non-food poor (%)            | .0          | .21         | .50         | .31         | .38         | .33         | .69         | .45         | .54         | .83         | .36         | 1.00  |
|   | Income male                            | .74         | .80         | .71         | .03         | .42         | .19         | 1.05        | .29         | .42         | .27         | .62         | .58   |
|   | Income female                          | .33         | .45         | .32         | .40         | .71         | .05         | .64         | .66         | .02         | .02         | .35         | .22   |
|   | Adult illiteracy rate (%)              | .26         | .72         | .78         | .01         | .42         | .30         | .40         | .04         | .36         | .72         | .54         | 1.00  |
|   | Remittances                            | 1.00        | .65         | 1.00        | .0          | .20         | .65         | .76         | .36         | .47         | 1.00        | .41         | 1.00  |
|   | Population density                     | .35         | .81         | .80         | .30         | .20         | .66         | .37         | .34         | .79         | 1.00        | .58         | .99   |
| <b>TOTAL</b>                                      | <b>3.84</b>                            | <b>4.65</b> | <b>5.62</b> | <b>2.01</b> | <b>3.21</b> | <b>3.64</b> | <b>5.86</b> | <b>2.97</b> | <b>4.15</b> | <b>5.34</b> | <b>4.62</b> | <b>7.54</b> |       |
| <b>Health</b>                                     | Child mortality – all (%)              | .38         | 1.00        | .31         | .12         | .16         | .12         | .23         | .05         | .19         | .45         | .39         | .53   |
|   | Child immunisation – no (%)            | .0          | .63         | .0          | .10         | .13         | .22         | .37         | .12         | .14         | 1.00        | .13         | .15   |
| <b>Nutrition</b>                                  | Child stunting (%)                     | .71         | .81         | .80         | .25         | .01         | .58         | .68         | .23         | .70         | .91         | .66         | 1.00  |
|   | Child underweight (%)                  | .78         | .73         | .81         | .43         | .0          | .42         | .86         | .49         | .54         | .28         | .79         | .71   |
|   | Child wasting (%)                      | .52         | .43         | .43         | .99         | .80         | .35         | .58         | .96         | .32         | .02         | .57         | .15   |
|   | Maternal BMI <18.5 (%)                 | .58         | .37         | .71         | .86         | .80         | .96         | .79         | .40         | .85         | .19         | .70         | .0    |
|   | Maternal haemoglobin – anaemia (%)     | .07         | .16         | .39         | .99         | 1.00        | .09         | .22         | .71         | .24         | .55         | .36         | .74   |
| <b>TOTAL</b>                                      | <b>3.04</b>                            | <b>4.13</b> | <b>3.45</b> | <b>3.74</b> | <b>2.90</b> | <b>2.74</b> | <b>3.73</b> | <b>2.96</b> | <b>2.98</b> | <b>3.40</b> | <b>3.60</b> | <b>3.28</b> |       |
| <b>Access to basic public services</b>            | Health institutions/1000 population    | .07         | .62         | .68         | .77         | .89         | .66         | .19         | .92         | .45         | .79         | .43         | .69   |
| <b>Standard of living</b>                         | Electricity – no (%)                   | .0          | 1.00        | 1.00        | .25         | .72         | .81         | 1.00        | .30         | 1.00        | 1.00        | .63         | 1.00  |
|   | Drinking water not MDG (%)             | .58         | .50         | .0          | .03         | .0          | .17         | .67         | .32         | .17         | 1.00        | .89         | .75   |
|   | Drinking water not MDG & >30 mins (%)  | .67         | .50         | .0          | .03         | .02         | .17         | .67         | .32         | .21         | 1.00        | .89         | .75   |
|   | Sanitation not MDG (%)                 | 1.00        | .65         | .31         | .11         | .53         | .83         | .25         | .34         | .65         | 1.00        | .77         | .65   |
|   | Floor construction – poor (%)          | 1.00        | .65         | .88         | .0          | .71         | 1.00        | 1.00        | .26         | 1.00        | 1.00        | .92         | 1.00  |
|   | Wall construction – poor (%)           | 1.00        | .95         | .95         | .46         | .01         | .95         | .97         | .36         | .95         | 1.00        | .88         | 1.00  |
|   | Roof construction – poor (%)           | .0          | .67         | .21         | .17         | .73         | .0          | .44         | .42         | .0          | 1.00        | .0          | 1.00  |
|   | Cooking – poor (%)                     | 1.00        | 1.00        | 1.00        | .0          | 1.00        | 1.00        | 1.00        | .10         | 1.00        | 1.00        | .67         | 1.00  |
|   | Assets – none (%)                      | .47         | .82         | .71         | .24         | .29         | 1.00        | .16         | .31         | .65         | .35         | .67         | .47   |
| <b>TOTAL</b>                                      | <b>5.79</b>                            | <b>7.36</b> | <b>5.74</b> | <b>2.06</b> | <b>4.90</b> | <b>6.59</b> | <b>6.35</b> | <b>3.65</b> | <b>6.08</b> | <b>9.14</b> | <b>6.75</b> | <b>8.31</b> |       |
| <b>Women's empowerment &amp; gender disparity</b> | Literacy status female (%)             | .52         | .92         | .89         | .0          | .39         | .59         | .57         | .12         | .59         | .82         | .73         | 1.00  |
|   | Years of schooling female (years)      | .17         | .62         | .74         | .46         | .61         | .18         | .58         | .30         | .0          | .81         | .71         | 1.00  |
|   | Female headed (%)                      | 1.00        | .25         | .33         | .38         | .33         | .25         | .28         | .30         | .33         | .0          | .61         | .0    |
|   | Women participation in local elections | 1.00        | .72         | .73         | .61         | .46         | .86         | .80         | .90         | .58         | .0          | .89         | .71   |
|   | Women in professional occupations      | .35         | .81         | .80         | .30         | .20         | .66         | .37         | .34         | .79         | 1.00        | .58         | .99   |
|   | Women in administrative occupations    | .85         | .79         | 1.00        | .67         | .73         | .92         | .91         | .71         | .94         | .81         | .81         | .99   |
|   | Gender-related development index       | .57         | .91         | .97         | .08         | .33         | .40         | .58         | .44         | .41         | .66         | .53         | .68   |

|   |   |                               |                               |                               |                               |                               |                               |                               |                               |                               |                               |                               |                               |
|---|---|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
|   | <b>TOTAL</b>  | <b>4.46</b>                   | <b>5.02</b>                   | <b>5.46</b>                   | <b>2.50</b>                   | <b>3.05</b>                   | <b>3.86</b>                   | <b>4.09</b>                   | <b>3.11</b>                   | <b>3.64</b>                   | <b>4.10</b>                   | <b>4.86</b>                   | <b>5.37</b>                   |
| <b>Remoteness</b>                           | Remoteness health post >60 mins (%)                     | .0                            | .58                           | .50                           | .07                           | .19                           | .50                           | .50                           | .10                           | .42                           | .0                            | .0                            | .33                           |
|   | Remoteness road head >60 mins (%)                       | .92                           | .50                           | 1.00                          | .0                            | .0                            | .50                           | .67                           | .0                            | .54                           | 1.00                          | .44                           | 1.00                          |
|   | Remoteness market >60 mins (%)                          | .83                           | .54                           | .50                           | .06                           | .35                           | .92                           | 1.00                          | .23                           | 1.00                          | 1.00                          | .67                           | 1.00                          |
|   | <b>TOTAL</b>  | <b>1.75</b>                   | <b>1.62</b>                   | <b>2.00</b>                   | <b>0.13</b>                   | <b>0.54</b>                   | <b>1.92</b>                   | <b>2.17</b>                   | <b>0.33</b>                   | <b>1.96</b>                   | <b>2.00</b>                   | <b>1.11</b>                   | <b>2.33</b>                   |
|   | <b>CHRONIC POVERTY TOTAL AND MEAN</b>                   | <b>18.88</b><br><b>(0.52)</b> | <b>22.78</b><br><b>(0.63)</b> | <b>22.27</b><br><b>(0.61)</b> | <b>10.44</b><br><b>(0.29)</b> | <b>14.60</b><br><b>(0.41)</b> | <b>18.75</b><br><b>(0.52)</b> | <b>22.20</b><br><b>(0.62)</b> | <b>13.02</b><br><b>(0.36)</b> | <b>18.81</b><br><b>(0.52)</b> | <b>23.98</b><br><b>(0.67)</b> | <b>20.94</b><br><b>(0.58)</b> | <b>26.83</b><br><b>(0.75)</b> |
| <b>Natural disasters</b>                    | Landslide   | .75                           | .75                           | .5                            | .0                            | .0                            | .25                           | .50                           | .50                           | .75                           | .75                           | .75                           | .5                            |
|   | Drought   | .50                           | .75                           | .75                           | .25                           | .5                            | 0.75                          | 1.00                          | .25                           | .50                           | .75                           | .75                           | .75                           |
|   | Earthquake (mean magnitude)                             | .0                            | .95                           | .92                           | .0                            | .0                            | .0                            | .85                           | .0                            | .88                           | 1.00                          | .0                            | .86                           |
|   | Flooding  | .0                            | .0                            | .0                            | .50                           | 1.00                          | .0                            | .0                            | .0                            | .0                            | .0                            | .0                            | .0                            |
|   | Climate vulnerability index                             | .50                           | .50                           | .50                           | .0                            | .25                           | .50                           | .75                           | .25                           | .50                           | .75                           | .50                           | .50                           |
|   | <b>TOTAL</b>  | <b>1.75</b>                   | <b>2.95</b>                   | <b>2.17</b>                   | <b>0.75</b>                   | <b>1.75</b>                   | <b>1.50</b>                   | <b>3.10</b>                   | <b>1.00</b>                   | <b>2.63</b>                   | <b>3.25</b>                   | <b>2.00</b>                   | <b>2.61</b>                   |
| <b>Risk &amp; exposure to health hazard</b> | Child (<5 years) ARI/1000                               | .10                           | .20                           | .68                           | .47                           | 1.00                          | .31                           | .13                           | .0                            | .01                           | .31                           | .28                           | .66                           |
|   | Child (<5 years) Diarrhoea/1000                         | .23                           | .34                           | .72                           | .17                           | .28                           | .24                           | .27                           | .02                           | .18                           | .63                           | .39                           | 1.00                          |
|   | Malaria/1000  | .13                           | .01                           | .0                            | 1.00                          | .28                           | .31                           | .0                            | .16                           | .0                            | .0                            | .04                           | .0                            |
|   | Tuberculosis/1000                                       | .15                           | .11                           | .07                           | .79                           | .57                           | .12                           | .13                           | .71                           | .14                           | .02                           | .16                           | .0                            |
|   | HIV hotspots  | .0                            | .0                            | .10                           | 1.00                          | .53                           | .0                            | .19                           | .51                           | .0                            | .0                            | .15                           | .10                           |
|   | Caste – Dalit (%)                                       | .26                           | .37                           | .66                           | .16                           | .10                           | .52                           | .75                           | .19                           | .07                           | .06                           | .77                           | .25                           |
|   | Rural (%)   | 1.00                          | 1.00                          | 1.00                          | .0                            | .89                           | .72                           | 1.00                          | .79                           | 1.00                          | 1.00                          | .69                           | 1.00                          |
|   | Dependency ratio (%)                                    | .37                           | .59                           | .38                           | .32                           | .47                           | .60                           | .45                           | .42                           | .34                           | .22                           | .38                           | .34                           |
| <b>Resilience (coping)</b>                  | Loans (%)   | .70                           | .0                            | .35                           | .40                           | .15                           | .30                           | .43                           | .10                           | .10                           | 1.00                          | .30                           | .40                           |
|   | Migrants – from abroad (%)                              | .82                           | .74                           | 1.00                          | .09                           | .82                           | .74                           | .0                            | 1.00                          | .91                           | 1.00                          | .41                           | .65                           |
|   | <b>TOTAL</b>  | <b>3.76</b>                   | <b>3.36</b>                   | <b>4.96</b>                   | <b>4.40</b>                   | <b>5.09</b>                   | <b>3.86</b>                   | <b>3.35</b>                   | <b>3.90</b>                   | <b>2.75</b>                   | <b>4.24</b>                   | <b>3.57</b>                   | <b>4.40</b>                   |
|   | <b>VULNERABILITY TOTAL AND MEAN</b>                     | <b>5.51</b><br><b>(0.37)</b>  | <b>6.31</b><br><b>(0.42)</b>  | <b>7.13</b><br><b>(0.48)</b>  | <b>5.15</b><br><b>(0.34)</b>  | <b>6.84</b><br><b>(0.46)</b>  | <b>5.36</b><br><b>(0.36)</b>  | <b>6.45</b><br><b>(0.43)</b>  | <b>4.90</b><br><b>(0.33)</b>  | <b>5.38</b><br><b>(0.36)</b>  | <b>7.49</b><br><b>(0.50)</b>  | <b>5.57</b><br><b>(0.37)</b>  | <b>7.01</b><br><b>(0.47)</b>  |
| <b>Food insecurity</b>                      | Agricultural land (persons per hectare)                 | .66                           | 1.00                          | .81                           | .26                           | .21                           | .61                           | .49                           | .16                           | .29                           | .70                           | .79                           | .0                            |
|   | Area of Irrigated land (%)                              | .77                           | .59                           | .72                           | .97                           | .0                            | .64                           | .59                           | .08                           | .89                           | .95                           | .47                           | .94                           |
|   | Food insecurity summer                                  | .72                           | .42                           | .97                           | .59                           | .37                           | .94                           | .82                           | .07                           | .77                           | .77                           | .74                           | .85                           |
|   | Food insecurity winter                                  | .47                           | .15                           | .93                           | .29                           | .39                           | .55                           | .74                           | .05                           | .40                           | 1.00                          | .54                           | .61                           |
|   | <b>TOTAL</b>  | <b>2.62</b>                   | <b>2.16</b>                   | <b>3.43</b>                   | <b>2.11</b>                   | <b>0.97</b>                   | <b>2.74</b>                   | <b>2.64</b>                   | <b>0.36</b>                   | <b>2.35</b>                   | <b>3.42</b>                   | <b>2.54</b>                   | <b>2.40</b>                   |
|   | <b>VULNERABILITY AND FOOD INSECURITY TOTAL AND MEAN</b> | <b>8.13</b><br><b>(0.43)</b>  | <b>8.47</b><br><b>(0.45)</b>  | <b>10.56</b><br><b>(0.56)</b> | <b>7.26</b><br><b>(0.38)</b>  | <b>7.81</b><br><b>(0.41)</b>  | <b>8.10</b><br><b>(0.43)</b>  | <b>9.09</b><br><b>(0.48)</b>  | <b>5.26</b><br><b>(0.28)</b>  | <b>7.73</b><br><b>(0.41)</b>  | <b>10.91</b><br><b>(0.57)</b> | <b>8.11</b><br><b>(0.43)</b>  | <b>9.41</b><br><b>(0.49)</b>  |
|   | <b>GRAND TOTAL AND MEAN</b>                             | <b>27.01</b><br><b>(0.49)</b> | <b>31.25</b><br><b>(0.57)</b> | <b>32.83</b><br><b>(0.60)</b> | <b>17.70</b><br><b>(0.32)</b> | <b>22.41</b><br><b>(0.41)</b> | <b>26.85</b><br><b>(0.49)</b> | <b>31.29</b><br><b>(0.57)</b> | <b>18.28</b><br><b>(0.33)</b> | <b>28.54</b><br><b>(0.52)</b> | <b>34.89</b><br><b>(0.63)</b> | <b>29.05</b><br><b>(0.53)</b> | <b>36.24</b><br><b>(0.66)</b> |

**Table 4.11: Zero-to-one scoring transformation and the mean composite indices by district (0 = best and 1 = worst)  
(continued)**

| Dimension   | Indicator                               | Jajarkot    | Jumla       | Kailali     | Kalikot     | Kanchanpur  | Mugu        | Pyuthan     | Rolpa       | Rukum       | Salyan      | Surket      |
|---|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Severity</b>                                   | Poverty (CBN) Total (%)                 | .04         | .40         | .19         | .76         | .31         | .16         | .0          | .82         | .46         | .72         | .28         |
|   | Poverty (calorie Total (%)              | .35         | .57         | .20         | .50         | .33         | 1.00        | .02         | .44         | .46         | .24         | .30         |
|   | Poverty - food poor (%)                 | .37         | .12         | .45         | .37         | .53         | .50         | .33         | .81         | .37         | .50         | .65         |
|   | Poverty - non-food poor (%)             | .33         | .58         | .35         | .83         | .35         | .33         | .25         | .67         | .63         | .58         | .32         |
|   | Income male                             | .78         | .48         | .33         | .64         | .09         | .46         | .92         | .61         | .41         | .88         | .47         |
|   | Income female                           | .45         | .12         | .17         | 1.02        | .29         | .15         | .52         | .60         | .60         | .46         | .17         |
|   | Adult illiteracy rate (%)               | .75         | .79         | .21         | .60         | .0          | .87         | .46         | .66         | .69         | .39         | .46         |
|   | Remittances                             | .29         | .65         | .50         | 1.00        | .56         | .65         | .41         | .29         | 1.00        | .82         | .29         |
|   | Population density                      | .76         | .87         | .19         | .75         | .0          | .97         | .32         | .53         | .74         | .39         | .51         |
| <b>TOTAL</b>                                      |   | <b>4.12</b> | <b>4.58</b> | <b>2.59</b> | <b>6.47</b> | <b>2.46</b> | <b>5.09</b> | <b>3.23</b> | <b>5.43</b> | <b>5.36</b> | <b>4.98</b> | <b>3.45</b> |
| <b>Health</b>                                     | Child mortality – all (%)               | .37         | .68         | .23         | .02         | .12         | .67         | .11         | .0          | .50         | .16         | .09         |
|   | Child immunisation – no (%)             | .0          | .13         | .0          | .10         | .08         | .23         | .0          | .07         | .27         | .0          | .12         |
| <b>Nutrition</b>                                  | Child stunting (%)                      | .81         | .87         | .14         | .79         | .18         | .93         | .60         | .70         | .79         | .54         | .56         |
|   | Child underweight (%)                   | .99         | .50         | .20         | .91         | .04         | .74         | .51         | .58         | .82         | .33         | .39         |
|   | Child wasting (%)                       | .40         | .29         | .82         | .65         | .64         | .22         | .35         | .33         | .40         | .34         | .24         |
|   | Maternal BMI <18.5 (%)                  | .55         | .96         | .90         | 1.00        | .73         | .51         | .31         | .32         | .25         | .40         | .48         |
|   | Maternal haemoglobin – anaemia (%)      | .29         | .04         | .93         | .34         | .81         | .25         | .15         | .0          | .07         | .09         | .34         |
|   | <b>TOTAL</b>                            |             | <b>3.41</b> | <b>3.47</b> | <b>3.22</b> | <b>3.81</b> | <b>2.60</b> | <b>3.55</b> | <b>2.03</b> | <b>2.00</b> | <b>3.10</b> | <b>1.86</b> |
| <b>Access to basic public services</b>            | Health institutions/1000 population     | .63         | .62         | .97         | .55         | 1.00        | .59         | .30         | .41         | .66         | .37         | .63         |
| <b>Standard of living</b>                         | Electricity – no (%)                    | .88         | 1.00        | .61         | 1.00        | .56         | 1.00        | .46         | 1.00        | 1.00        | 1.00        | .30         |
|   | Drinking water not MDG (%)              | .0          | 1.00        | .06         | 1.00        | .06         | .08         | .25         | .25         | .46         | .42         | .60         |
|   | Drinking water not MDG and >30 mins (%) | .0          | 1.00        | .13         | 1.00        | .08         | .08         | .25         | .25         | .46         | .58         | .62         |
|   | Sanitation not MDG (%)                  | .65         | .14         | 1.00        | 1.00        | .53         | .83         | .31         | 1.00        | 1.00        | 1.00        | .0          |
|   | Floor construction – poor (%)           | .77         | 1.00        | .24         | 1.00        | .60         | 1.00        | .54         | 1.00        | 1.00        | 1.00        | .31         |
|   | Wall construction – poor (%)            | 1.00        | 1.00        | .0          | 1.00        | .33         | 1.00        | .82         | 1.00        | .95         | .95         | .82         |
|   | Roof construction – poor (%)            | .0          | 1.00        | .12         | .75         | .06         | 1.00        | .33         | .88         | .75         | .67         | .42         |
|   | Cooking – poor (%)                      | 1.00        | 1.00        | .48         | 1.00        | .83         | 1.00        | .45         | 1.00        | 1.00        | 1.00        | .72         |
|   | Assets – none (%)                       | .35         | .0          | .20         | .59         | .29         | .82         | .35         | .24         | .53         | .71         | .17         |
|   | <b>TOTAL</b>                            |             | <b>5.28</b> | <b>7.76</b> | <b>3.81</b> | <b>8.89</b> | <b>4.34</b> | <b>7.40</b> | <b>4.06</b> | <b>7.03</b> | <b>7.81</b> | <b>7.70</b> |
| <b>Women's empowerment &amp; gender disparity</b> | Literacy status female (%)              | .73         | .88         | .28         | .85         | .15         | .99         | .53         | .74         | .70         | .48         | .03         |
|   | Years of schooling female (years)       | .84         | .79         | .58         | .67         | .21         | .81         | .56         | .98         | .68         | .40         | .32         |
|   | Female headed (%)                       | .67         | .0          | .31         | .17         | .46         | .67         | .33         | .67         | .42         | .67         | .50         |
|   | Women participation in local elections  | .85         | .45         | .71         | .96         | .79         | .52         | .83         | .59         | .67         | .15         | .66         |
|   | Women in professional occupations       | .08         | .39         | .12         | .54         | .30         | .83         | .78         | .54         | .76         | .44         | .25         |
|   | Women in administrative occupations     | .85         | .87         | .70         | .0          | .92         | .99         | .96         | .98         | .81         | .90         | .82         |

|   |   |                               |                               |                               |                               |                               |                               |                               |                               |                               |                               |                               |
|---|---|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
|   | Gender-related development index                        | .72                           | .78                           | .25                           | .98                           | .18                           | 1.03                          | .39                           | .59                           | .55                           | .47                           | .02                           |
|   | <b>TOTAL</b>  | <b>4.74</b>                   | <b>4.16</b>                   | <b>2.95</b>                   | <b>4.17</b>                   | <b>3.01</b>                   | <b>5.84</b>                   | <b>4.38</b>                   | <b>5.09</b>                   | <b>4.59</b>                   | <b>3.51</b>                   | <b>2.60</b>                   |
| <b>Remoteness</b>                           | Remoteness health post >60 mins (%)                     | .33                           | .0                            | .23                           | .0                            | .06                           | .0                            | .39                           | 1.00                          | .96                           | .04                           | .18                           |
|   | Remoteness road head >60 mins (%)                       | .92                           | 1.00                          | .06                           | 1.00                          | .0                            | .92                           | .17                           | .92                           | .96                           | .46                           | .38                           |
|   | Remoteness market >60 mins (%)                          | .50                           | 1.00                          | .23                           | 1.00                          | .46                           | .0                            | .53                           | 1.00                          | 1.00                          | .83                           | .48                           |
|   | <b>TOTAL</b>  | <b>1.75</b>                   | <b>2.00</b>                   | <b>0.52</b>                   | <b>2.00</b>                   | <b>0.52</b>                   | <b>0.92</b>                   | <b>1.09</b>                   | <b>2.92</b>                   | <b>2.92</b>                   | <b>1.33</b>                   | <b>1.04</b>                   |
|   | <b>CHRONIC POVERTY TOTAL AND MEAN</b>                   | <b>19.30</b><br><b>(0.54)</b> | <b>21.97</b><br><b>(0.61)</b> | <b>13.09</b><br><b>(0.36)</b> | <b>25.34</b><br><b>(0.70)</b> | <b>12.93</b><br><b>(0.36)</b> | <b>22.80</b><br><b>(0.63)</b> | <b>14.79</b><br><b>(0.41)</b> | <b>22.47</b><br><b>(0.62)</b> | <b>23.78</b><br><b>(0.66)</b> | <b>19.38</b><br><b>(0.54)</b> | <b>12.90</b><br><b>(0.36)</b> |
| <b>Natural disasters</b>                    | Landslide   | .75                           | .50                           | .0                            | .50                           | .0                            | 1.00                          | .50                           | .75                           | .75                           | .50                           | .50                           |
|   | Drought   | 1.00                          | .75                           | .25                           | 1.00                          | .50                           | 1.00                          | .50                           | .75                           | .75                           | .75                           | .25                           |
|   | Earthquake (mean magnitude)                             | .84                           | .84                           | .88                           | .87                           | .88                           | .82                           | .0                            | .0                            | .89                           | .0                            | .0                            |
|   | Flooding  | .0                            | .0                            | 1.00                          | .0                            | 1.00                          | .0                            | .0                            | .0                            | .0                            | .0                            | .0                            |
|   | Climate vulnerability index                             | 1.00                          | .50                           | .25                           | .75                           | .25                           | 1.00                          | .25                           | .50                           | .50                           | .75                           | .25                           |
|   | <b>TOTAL</b>  | <b>3.59</b>                   | <b>2.59</b>                   | <b>2.38</b>                   | <b>3.12</b>                   | <b>2.63</b>                   | <b>3.82</b>                   | <b>1.25</b>                   | <b>2.00</b>                   | <b>2.89</b>                   | <b>2.00</b>                   | <b>1.00</b>                   |
| <b>Risk &amp; exposure to health hazard</b> | Child (<5 years) ARI/1000                               | .16                           | .61                           | .51                           | .17                           | .49                           | .45                           | .05                           | .10                           | .19                           | .04                           | .21                           |
|   | Child (<5 years) Diarrhoea/1000                         | .33                           | .38                           | .10                           | .36                           | .0                            | .51                           | .15                           | .31                           | .31                           | .22                           | .18                           |
|   | Malaria/1000  | .0                            | .0                            | .67                           | .02                           | .82                           | .0                            | .07                           | .02                           | .02                           | .09                           | .12                           |
|   | Tuberculosis/1000                                       | .06                           | .04                           | 1.00                          | .05                           | .79                           | .02                           | .18                           | .19                           | .15                           | .14                           | .34                           |
|   | HIV hotspots  | .24                           | .0                            | 1.00                          | .17                           | .0                            | .0                            | .04                           | .0                            | .0                            | .05                           | .99                           |
|   | Caste – Dalit (%)                                       | .90                           | .40                           | .26                           | 1.00                          | .31                           | .57                           | .51                           | .42                           | .00                           | .35                           | .73                           |
|   | Rural (%)   | 1.00                          | 1.00                          | .64                           | 1.00                          | .35                           | 1.00                          | .98                           | 1.00                          | 1.00                          | 1.00                          | .37                           |
|   | Dependency ratio (%)                                    | .78                           | .00                           | .44                           | .44                           | .40                           | 1.00                          | .22                           | .47                           | .43                           | .53                           | .47                           |
| <b>Resilience (coping)</b>                  | Loans (%)   | .20                           | .70                           | .27                           | .50                           | .10                           | .0                            | .23                           | .05                           | .15                           | .05                           | .40                           |
|   | Migrants – from abroad (%)                              | .65                           | .82                           | .85                           | .65                           | .74                           | 1.00                          | 1.00                          | 1.00                          | 1.00                          | .91                           | .82                           |
|   | <b>TOTAL</b>  | <b>4.32</b>                   | <b>3.95</b>                   | <b>5.74</b>                   | <b>4.36</b>                   | <b>4.00</b>                   | <b>4.55</b>                   | <b>3.43</b>                   | <b>3.56</b>                   | <b>3.25</b>                   | <b>3.38</b>                   | <b>4.63</b>                   |
|   | <b>VULNERABILITY TOTAL AND MEAN</b>                     | <b>7.91</b><br><b>(0.53)</b>  | <b>6.54</b><br><b>(0.44)</b>  | <b>8.12</b><br><b>(0.54)</b>  | <b>7.48</b><br><b>(0.50)</b>  | <b>6.63</b><br><b>(0.44)</b>  | <b>8.37</b><br><b>(0.56)</b>  | <b>4.68</b><br><b>(0.31)</b>  | <b>5.56</b><br><b>(0.37)</b>  | <b>6.14</b><br><b>(0.41)</b>  | <b>5.38</b><br><b>(0.36)</b>  | <b>5.63</b><br><b>(0.38)</b>  |
| <b>Food insecurity</b>                      | Agricultural land (persons per hectare)                 | .30                           | .64                           | .38                           | .05                           | .24                           | .02                           | .45                           | .27                           | .73                           | .31                           | .66                           |
|   | Area of Irrigated land (%)                              | .84                           | 1.00                          | .06                           | .33                           | .03                           | .95                           | .81                           | .75                           | .71                           | .77                           | .23                           |
|   | Food insecurity summer                                  | .79                           | .89                           | .36                           | .58                           | .00                           | 1.00                          | .41                           | .69                           | .49                           | .69                           | .67                           |
|   | Food insecurity winter                                  | .27                           | .52                           | .24                           | .65                           | .00                           | .60                           | .18                           | .33                           | .18                           | .05                           | .16                           |
|   | <b>TOTAL</b>  | <b>2.20</b>                   | <b>3.05</b>                   | <b>1.04</b>                   | <b>1.61</b>                   | <b>0.27</b>                   | <b>2.57</b>                   | <b>1.85</b>                   | <b>2.04</b>                   | <b>2.11</b>                   | <b>1.82</b>                   | <b>1.72</b>                   |
|   | <b>VULNERABILITY AND FOOD INSECURITY TOTAL AND MEAN</b> | <b>10.11</b><br><b>(0.53)</b> | <b>9.59</b><br><b>(0.50)</b>  | <b>9.16</b><br><b>(0.48)</b>  | <b>9.09</b><br><b>(0.48)</b>  | <b>6.90</b><br><b>(0.36)</b>  | <b>10.94</b><br><b>(0.58)</b> | <b>6.53</b><br><b>(0.34)</b>  | <b>7.60</b><br><b>(0.40)</b>  | <b>8.25</b><br><b>(0.43)</b>  | <b>7.20</b><br><b>(0.38)</b>  | <b>7.35</b><br><b>(0.39)</b>  |
|   | <b>GRAND TOTAL AND MEAN</b>                             | <b>29.41</b><br><b>(0.53)</b> | <b>31.56</b><br><b>(0.57)</b> | <b>22.25</b><br><b>(0.40)</b> | <b>34.43</b><br><b>(0.63)</b> | <b>19.83</b><br><b>(0.36)</b> | <b>33.74</b><br><b>(0.61)</b> | <b>21.32</b><br><b>(0.39)</b> | <b>30.07</b><br><b>(0.55)</b> | <b>32.03</b><br><b>(0.58)</b> | <b>26.58</b><br><b>(0.48)</b> | <b>20.25</b><br><b>(0.37)</b> |

**Table 4.12: Total Composite score by District and overall position (1 = best, 23 = worst district)**

| District    | Zone     | Ranking         |               |                 |                                 | Grand Total |
|-------------|----------|-----------------|---------------|-----------------|---------------------------------|-------------|
|             |          | Chronic Poverty | Vulnerability | Food Insecurity | Vulnerability & Food Insecurity |             |
| Baitadi     | Mahakali | 10              | 7             | 18              | 12                              | 11          |
| Bajhang     | Seti     | 18              | 12            | 12              | 14                              | 15          |
| Bajura      | Seti     | 16              | 18            | 23              | 21                              | 19          |
| Banke       | Bheri    | 1               | 3             | 10.5            | 5                               | 1           |
| Bardiya     | Bheri    | 6               | 16            | 3               | 9                               | 7           |
| Dandeldhura | Mahakali | 8               | 4             | 20              | 10                              | 10          |
| Dailekh     | Bheri    | 15              | 13            | 19              | 15.5                            | 16          |
| Dang        | Rapti    | 4               | 2             | 2               | 1                               | 2           |
| Darchula    | Mahakali | 9               | 5.5           | 14              | 8                               | 8           |
| Dolpa       | Karnali  | 21              | 20            | 22              | 22                              | 22          |
| Doti        | Seti     | 13              | 9             | 16              | 11                              | 12          |
| Humla       | Karnali  | 23              | 17            | 15              | 18                              | 23          |
| Jajarkot    | Bheri    | 11              | 21            | 13              | 20                              | 13          |
| Jumla       | Karnali  | 14              | 14            | 21              | 19                              | 17          |
| Kailali     | Seti     | 5               | 22            | 4               | 17                              | 6           |
| Kalikot     | Karnali  | 22              | 19            | 5               | 15.5                            | 21          |
| Kanchanpur  | Mahakali | 3               | 15            | 1               | 3                               | 3           |
| Mugu        | Karnali  | 19              | 23            | 17              | 23                              | 20          |
| Pyuthan     | Rapti    | 7               | 1             | 8               | 2                               | 5           |
| Rolpa       | Rapti    | 17              | 8             | 9               | 7                               | 14          |
| Rukum       | Rapti    | 20              | 11            | 10.5            | 13                              | 18          |
| Salyan      | Rapti    | 12              | 5.5           | 7               | 4                               | 9           |
| Surket      | Bheri    | 2               | 10            | 6               | 6                               | 4           |

## Report 5 – Analyses of NLSS III (2010/11) and UNICEF (2010) data bases

### 5.1 Introduction

The analyses presented used NLSS III to examine differences across the five regions, Eastern, Central, Western, Mid-West and Far-West as well as the three zones in the Mid-West (Bheri, Karnali and Rapti) and the two zones in the Far-West (Mahakali and Seti). Data were also obtained from UNICEF for all the districts in the Mid- and far-West and comparisons are made between NLSS III and UNICEF at the zonal level. In addition district level analyses were carried out just using the UNICEF database.

The analyses follow the same format as those presented in reports 3 and 4. In NLSS III there were a total of 32 indicators of which 25 indicators deal with chronic poverty and 7 indicators cover vulnerability and food security. Within chronic poverty the analyses have focussed on 5 dimensions of severity (6 indicators), health and nutrition (5 indicators), access to basic services and standard of living (8 indicators), women's empowerment and gender disparity (3 indicators) and remoteness (3 indicators). Vulnerability has been organised under one dimension of risk and resilience (5 indicators) and food insecurity (2 indicators). Because there are so few food insecurity indicators the analyses have been undertaken on vulnerability and food insecurity together (Table 5.1). The UNICEF database has information covering 16 indicators (Table 5.13) and no attempt was made to separate into chronic poverty and vulnerability groupings because there were only three vulnerability indicators (caste, rural/urban and land ownership)

The analyses have used the same three approaches described in report 3, namely ranking, zero-to-one transformation and PGI and SPGI.

Using NLSS III, three PGIs were computed, the overall poverty gap index, the food PGI and non-food PGI, as well as the three squared indices.

The analyses of the UNICEF data only used approaches (a) and (b) as there was no information on PGI or SPGI.

### 5.2 Results

#### 5.2.1 Introduction

This section examines the whole country as well as regional variation and so was entirely based on NLSS III. Information on all 32 indicators is presented in Table 5.1 for the whole country as well as by each region separately. Most of the indicators were recorded in percentages. Based on these 32 indicators, the picture for the country as a whole indicates that up to 27% of the population were living in poverty (non-food poverty) and over 40% of adults were illiterate. Long term undernutrition was evident and over 38% of children were stunted and 28% were underweight. Over 25% of households did not have electricity and sanitation facilities did not meet the millennium development goals in over 57% of households; nearly 70% of households cooked using wood, dung or charcoal. Over 25% of women were illiterate and only 22% of women had been at school for more than 11 years. The vast majority of the population live in rural areas many of which are in remote areas and

over 30% live more than 60 minutes from a market. Nearly two thirds of households have some form of loan and about over 30% of households receive remittances.

There were highly significant regional differences for all these indicators and this inter-regional variation is examined in the next two sections.

### **5.2.2 Ranking**

The ranked data are presented in Table 5.3. Poverty as defined by cost of basic needs was about 10% higher in the Mid- and Far-West (M&FW) regions than in Central and Western regions. Food and non-poverty was highest in the Far-West (35.0% and 45.3%, respectively), while adult illiteracy was over 50% in both M&FW regions. Childhood mortality, stunting and underweight were all higher in the M&FW, while wasting was highest in the FW region. Access to basic services and standard of living was generally worse in the M&FW regions with, for example, about 50% of households not having electricity compared with 31% in the Eastern region and 15% in the Central region. Women in the M&FW were more likely to be illiterate and there were more female headed households in these regions. Households in the M&FW regions tended to be more remote and about 25% lived more than 60 minutes away from a health centre compared with 4% to 14% in other regions.

For all five dimensions of chronic poverty the M&FW regions were significantly worse, particularly so for the severity dimension, standard of living, women's empowerment and remoteness. When the percentage of the maximum total rank for each dimension was calculated by region (higher percentages indicate greater chronic poverty), the M&FW regions scored 83% and 87% (Mid- and Far-West, respectively) on severity compared with 53%, 40% and 37% for Eastern, Central and Western regions, respectively (Figure 5.1). Remoteness was very high in the Mid-West (93%) and less so in the Far-West (87%) but well above remoteness values of 60%, 20% and 40% for Eastern, Western and Central regions, respectively. For each dimension the M&FW regions had much worse chronic percentages (range 74% to 93%) whereas in the other three regions the percentages ranged only between 20% and 60%.

Vulnerability was examined by risk and resilience dimensions (n=5 indicators) and food insecurity indicators (n=2 indicators). Vulnerability and food insecurity was worse in the Mid-West (81%) followed by the Far-West (67%), Eastern (63%), Western (51%) and Central regions (37%, Table 5.3 and Figure 5.1).

When all 32 indicators were combined the M&FW regions were suffering from about 81% chronic poverty and vulnerability compared with about 53% in the Eastern region, 46% in the Western region and 34% in the Central region (Figure 5.2). A post-hoc test on the total rank scores revealed that the M&FW regions were very significantly worse (mean ranks of between 3.9 and 4.1) than the other three regions in chronic poverty and vulnerability (mean ranks ranged from 1.7 to 2.6) such that the 5 regions could be split into two homogenous groups of M&FW regions together and Eastern, Central and Western regions together.

### 5.2.3 Composite index

The zero-to-one transformation (composite index) quantifies the magnitude of the difference between regions. It sets the best region a value of 0 and the worst region a value of 1. The zero-to-one scoring transformations are presented in Table 5.4 together with the total composite indices for each dimension. For the five chronic poverty dimensions the M&FW regions had significantly worse means (all  $p < 0.001$ ) than the other three regions but the M&FW regions were not significantly different from each other. In order to make comparisons between dimensions the total composite scores for each dimension as a percentage of the maximum have been calculated. For example the severity dimension total composite score for the Far-West is 5.20. The maximum total score for that dimension is 6 (as there are 6 indicators), so the Far-West had a percentage of 87% out of a maximum of 100% on that dimension.

Figure 5.3 presents the percentages for each dimension and the M&FW regions showed significantly greater chronic poverty across all dimensions. The four dimensions which showed greatest differences between M&FW and other regions were severity, access to basic services and standard of living, remoteness and women's empowerment. The Far-West had worse severity (87%) compared with the Mid-West (77%), while the Mid-West had worse standard of living (94% versus 82%) and women's empowerment (87% versus 75%) than the Far-West. For remoteness both regions were very high (99% and 96%, for Mid- and Far-West, respectively). For vulnerability the Mid-West was the worst region (80%) followed by the Far-West (67%), Eastern (60%), Western (50%) and Central (19%).

When all the 32 indicators were combined, the Mid-West was just worse than the Far-West (81% and 80%, respectively) and they were nearly twice as worse as the next region (41%, Eastern). Figure 5.4 shows that the M&FW regions were about 40% worse, close to double, than the other regions. In keeping with the ranking findings, the 5 regions could be split into two homogenous groups of M&FW regions together and Eastern, Central and Western regions together.

### 5.2.4 Poverty Gap and Squared Poverty Gap Indices

The poverty gap and squared poverty gap analyses focus only on poverty as defined by cost of basic needs and so they do not reflect the multidimensionality of chronic poverty.

The mean Poverty Gap indices (overall, food and non-food) by region are shown in Tables 5.5 to 5.7. There was highly significant heterogeneity between regions. Post-hoc tests revealed that the Far-West had significantly the worst overall poverty gap index (and was significantly worse than the Mid-West region) while the Mid-West was significantly worse than the Eastern, Central and Western regions. For food and non-food poverty, the M&FW regions were both worse than the other three regions but not significantly different from each other.

The squared poverty gap indices (Tables 5.8 to 5.10) revealed that the M&FW regions were the worst on all three measures (overall, food and non-food) and were significantly worse than the other three regions. The Far-West had the worst squared poverty indices but they were not significantly different from the Mid-West region.

### **5.3 Conclusions from regional analyses**

**5.3.1** A total of 32 indicators were used in these analyses, of which 25 indicators dealt with chronic poverty, and the other 7 indicators with vulnerability and food insecurity.

**5.3.2** The 25 chronic poverty indicators were grouped into 5 dimensions of severity, health and nutrition, access to basic services and standard of living, women's empowerment and remoteness. Vulnerability covered risk and resilience and food insecurity.

**5.3.3** There were highly significant differences between regions for all these indicators.

**5.3.4** The ranking analyses indicated that the M&FW regions had significantly more chronic poverty (all 5 dimensions combined) than the other three regions but there was no significant difference in chronic poverty between the Mid- and Far-West regions. In percentage terms the M&FW regions had over 80% chronic poverty compared with between 33% and 50% in the other three regions i.e. the M&FW regions were between 30% and 47% worse than the other regions.

**5.3.5** The ranking analyses also indicated that within the chronic poverty dimensions severity, access to basic services and standard of living, women's empowerment and remoteness were the largest differentiators between the M&FW and the other regions.

**5.3.6** The ranking analyses revealed that the Mid-West was by far the most vulnerable region (81%) followed by the Far-West (67%) and the Eastern region (63%).

**5.3.7** When all 32 ranked indicators were combined the M&FW regions were suffering from over 80% chronic poverty and vulnerability compared with about 50% in the Eastern region, 46% in Western and 34% in Central region and the five regions could be split into two homogenous groups of M&FW regions together and Eastern, Central and Western regions together.

**5.3.8** The results from the composite index analyses, were broadly in agreement with the ranking analyses, but they provided a more comprehensive and quantitative understanding of the variation between regions. Chronic poverty (combination of the 5 dimensions) was nearly identical in the M&FW regions (over 81%) and significantly worse than the other regions (Eastern, 36%, Central 13% and Western 26%) i.e. the M&FW regions were over 45% worse than the next region. The M&FW regions showed significantly greater chronic poverty across all dimensions.

**5.3.9** The composite analyses revealed that the Mid-West was the most vulnerable followed by the Far-West (67%), Eastern (60%), Western (50%) and Central (19%) regions

**5.3.10** When all 32 composite indicators were combined the M&FW regions were suffering from about 80% chronic poverty and vulnerability compared with 41% and 32% in the Eastern and Western regions, respectively and 14% in the Central region. The composite analyses provided greater differentiation between M&FW regions and the other 3 regions than the ranking analysis. In keeping with the ranking findings when all 32 indicators were

used, the 5 regions could be split into two homogenous groups of M&FW regions together and Eastern, Central and Western regions together.

**5.3.11** The poverty gap analyses revealed that the mean overall index was significantly worst in the Far-West, while the Mid-West was much worse than the other three regions. However for food and non-food poverty indices the Mid- and Far-West regions were not significantly different but both had worse indices than the other regions. The squared poverty gap indices were not significantly different between the Mid- and Far-West regions but both were significantly worse than the other three regions.

**Table 5.1: Variation in NLSS III indicators by region**

| <b>CHRONIC POVERTY</b> | <b>Dimension</b>           | <b>Indicator</b>                        | <b>Eastern</b>                          | <b>Central</b> | <b>Western</b> | <b>Mid-West</b> | <b>Far-West</b> | <b>Total</b> |      |
|------------------------|----------------------------|---|---|----------------|----------------|-----------------|-----------------|--------------|------|
| <b>CHRONIC POVERTY</b> | <b>Severity</b>            | Poverty - Total (%)                     | 16.3                                    | 14.7           | 14.8           | 26.2            | 37.3            | 18.5         |      |
|                        |                            | Poverty - food poor (%)                 | 13.6                                    | 14.6           | 14.2           | 27.6            | 35.0            | 17.8         |      |
|                        |                            | Poverty - non-food poor (%)             | 27.6                                    | 22.3           | 22.7           | 38.4            | 45.3            | 27.6         |      |
|                        |                            | Adult illiteracy rate (%)               | 47.3                                    | 38.9           | 43.3           | 58.2            | 50.8            | 44.4         |      |
|                        |                            | Adult 11+ years of schooling (%)        | 12.4                                    | 25.9           | 15.1           | 7.8             | 12.5            | 17.5         |      |
|                        |                            | Remittances (% not receiving)           | 32.4                                    | 25.7           | 42.9           | 29.8            | 28.4            | 31.2         |      |
|                        | <b>Health</b>              | Child mortality (%)                     | 14.6                                    | 15.9           | 17.2           | 21.0            | 27.7            | 17.5         |      |
|                        |                            | Child immunisation – no (%)             | 3.5                                     | 5.1            | 3.6            | 3.6             | 4.9             | 4.2          |      |
|                        | <b>Nutrition</b>           | Child stunting (%)                      | 38.6                                    | 32.7           | 37.5           | 48.6            | 38.7            | 38.1         |      |
|                        |                            | Child underweight (%)                   | 26.1                                    | 24.8           | 27.1           | 34.2            | 31.5            | 27.8         |      |
|                        |                            | Child wasting (%)                       | 11.0                                    | 11.8           | 12.5           | 11.2            | 13.5            | 11.8         |      |
|                        | <b>Standard of living</b>  | Electricity – no (%)                    | 30.7                                    | 15.0           | 18.6           | 52.9            | 45.8            | 26.5         |      |
|                        |                            | Drinking water not MDG (%)              | 13.8                                    | 15.9           | 12.0           | 26.9            | 27.3            | 17.1         |      |
|                        |                            | Sanitation not MDG (%)                  | 72.9                                    | 44.3           | 45.6           | 72.6            | 76.5            | 57.0         |      |
|                        |                            | Foundation construction – poor (%)      | 35.0                                    | 36.4           | 55.8           | 71.8            | 63.1            | 46.7         |      |
|                        |                            | Wall construction – poor (%)            | 75.3                                    | 51.4           | 59.9           | 81.9            | 84.3            | 64.8         |      |
|                        |                            | Roof construction – poor (%)            | 33.6                                    | 8.7            | 10.9           | 42.9            | 5.9             | 18.5         |      |
|                        |                            | Cooking – poor (%)                      | 84.0                                    | 48.8           | 68.6           | 89.4            | 91.7            | 69.0         |      |
|                        |                            | Assets – none (%)                       | 14.9                                    | 8.5            | 9.9            | 23.5            | 27.1            | 13.7         |      |
|                        | <b>Women's empowerment</b> | Literacy status female (% illiterate)   | 26.3                                    | 26.2           | 24.0           | 30.9            | 27.4            | 26.5         |      |
|                        |                            | Female 11+ years of schooling (%)       | 18.3                                    | 30.6           | 19.9           | 9.3             | 14.4            | 21.7         |      |
|                        |                            | Female headed (%)                       | 24.0                                    | 22.0           | 33.9           | 29.4            | 34.3            | 26.7         |      |
|                        | <b>Remoteness</b>          | Remoteness health post > 60 minutes (%) | 13.3                                    | 7.5            | 10.5           | 24.3            | 23.7            | 12.9         |      |
|                        |                            | Remoteness road head > 60 minutes (%)   | 13.9                                    | 4.2            | 8.2            | 25.7            | 26.3            | 11.7         |      |
|                        |                            | Remoteness market > 60 minutes (%)      | 34.6                                    | 20.1           | 38.1           | 49.9            | 47.2            | 32.8         |      |
|                        | <b>VULNERABILITY</b>       | <b>Risks</b>                            | Caste (Dalits, %)                       | 12.5           | 9.5            | 18.3            | 18.1            | 17.3         | 13.7 |
|                        |                            |   | Rural (%)                               | 74.1           | 51.2           | 75.0            | 86.4            | 79.9         | 68.0 |
|                        |                            |   | Dependency ratio                        | 99.7           | 78.3           | 94.5            | 116.9           | 114.8        | 94.1 |
|                        |                            | <b>Resilience (coping)</b>              | Loans (%)                               | 67.5           | 55.8           | 62.8            | 69.6            | 63.3         | 62.0 |
|                        |                            |   | Migrants from abroad (%)                | 4.2            | 3.9            | 4.9             | 1.9             | 2.3          | 3.7  |
|                        |                            | <b>Food insecurity</b>                  | Agricultural land (persons per hectare) | 14.9           | 8.6            | 12.1            | 12.5            | 12.5         | 11.4 |
| Land owned (no %)      |                            |   | 25.1                                    | 45.1           | 21.5           | 9.9             | 10.0            | 28.8         |      |

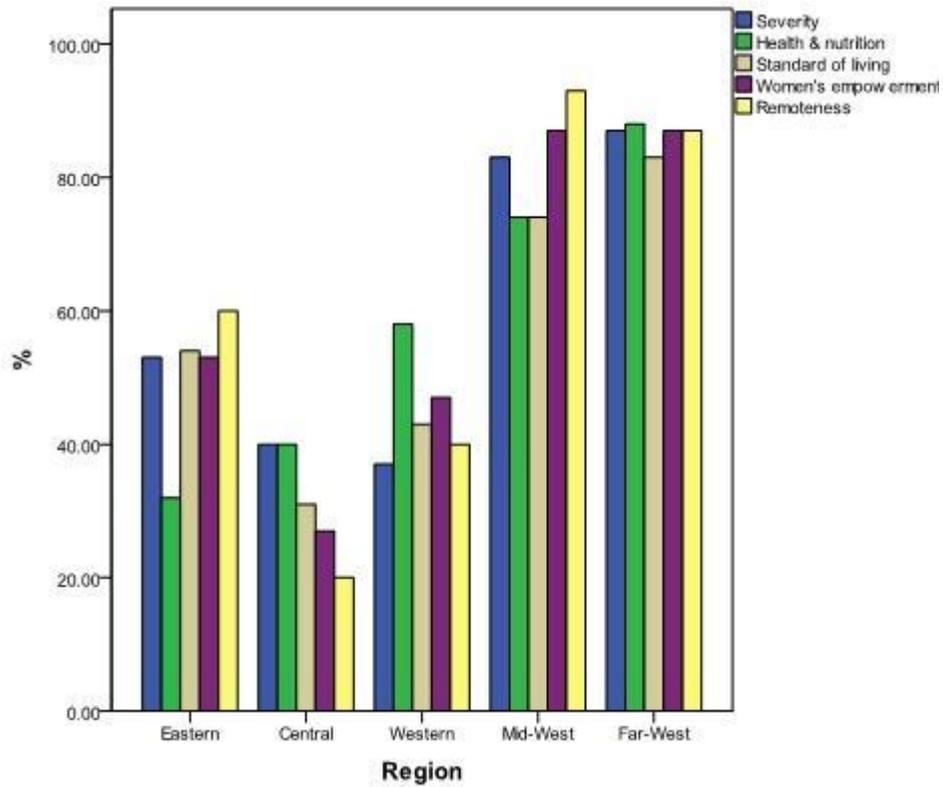
**Table 5.2: Zero-to-one scoring transformations used to derive the composite indices**

| Dimension                                   | <b>Group 1</b><br>The higher the value of the indicator the less developed the region<br>$d_{ij} = (x_{ij} - \min_j)/(max_j - \min_j)$ | <b>Group 2</b><br>The higher the value of the indicator the more developed the region<br>$d_{ij} = (max_j - x_{ij})/(max_j - \min_j)$ |
|---|--|---|
| <b>Severity</b>                             | Poverty – Total (%)  |   |
|   | Poverty - food poor (%)  |   |
|   | Poverty - non-food poor (%)  |   |
|   | Adult illiteracy rate (%)  |   |
|   | Remittances (% not receiving)  | Adult 11+ years of schooling (%)  |
| <b>Health</b>                               | Child mortality (%)  |   |
|   | Child immunisation – no (%)  |   |
| <b>Nutrition</b>                            | Child stunting (%)   |   |
|   | Child underweight (%)  |   |
|   | Child wasting (%)  |   |
| <b>Standard of living</b>                   | Electricity – no (%)   |   |
|   | Drinking water not MDG (%)   |   |
|   | Sanitation not MDG (%)   |   |
|   | Foundation construction – poor (%)   |   |
|   | Wall construction – poor (%)   |   |
|   | Roof construction – poor (%)   |   |
|   | Cooking – poor (%)   | Assets – none (%)   |
| <b>Women’s empowerment</b>                  | Literacy status female (illiterate, %)   |   |
|   | Female headed (%)  | Female 11+ years of schooling (%)   |
| <b>Remoteness</b>                           | Remoteness health post > 60 minutes (%)  |   |
|   | Remoteness road head > 60 minutes (%)  |   |
|   | Remoteness market > 60 minutes (%)   |   |
| <b>Risk &amp; exposure to health hazard</b> | Caste – Dalit (%)  |   |
|   | Rural (%)  |   |
|   | Dependency ratio (%)   |   |
| <b>Resilience (coping)</b>                  | Loans (%)  |   |
|   |  | Migrants from abroad (%)  |
| <b>Food insecurity</b>                      | Agricultural land (persons per hectare)  |   |
|   | Land owned (no, %)   |   |

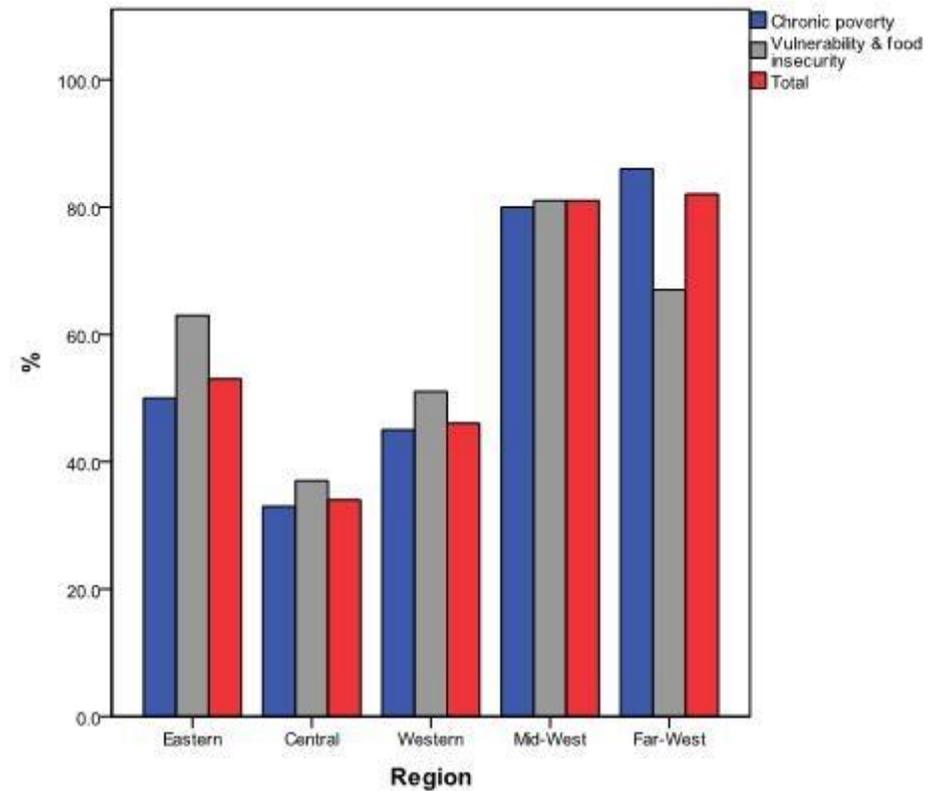
Table 5.3: NLSS III Indicators ranked by region (1 = best and 5 = worst rank)

| CHRONIC POVERTY   | Dimension                  | Indicator                               | Eastern         | Central         | Western           | Mid-West           | Far-West           |
|---|----------------------------|---|-----------------|-----------------|-------------------|--------------------|--------------------|
|   | <b>Severity</b>            | Poverty -Total (%)                      | 3               | 1               | 2                 | 4                  | 5                  |
|   |                            | Poverty - food poor (%)                 | 1               | 3               | 2                 | 4                  | 5                  |
|   |                            | Poverty - non-food poor (%)             | 3               | 1               | 2                 | 4                  | 5                  |
|   |                            | Adult illiteracy rate (%)               | 3               | 1               | 2                 | 5                  | 4                  |
|   |                            | Adult 11+ years of schooling (%)        | 4               | 1               | 2                 | 5                  | 3                  |
|   |                            | Remittances (% not receiving)           | 2               | 5               | 1                 | 3                  | 4                  |
| <b>TOTAL</b>  |                            |   | <b>16</b>       | <b>12</b>       | <b>11</b>         | <b>25</b>          | <b>26</b>          |
|   | <b>Health</b>              | Child mortality – all (%)               | 1               | 2               | 3                 | 4                  | 5                  |
|   |                            | Child immunisation – no (%)             | 1               | 5               | 2.5               | 2.5                | 4                  |
|   | <b>Nutrition</b>           | Child stunting (%)                      | 3               | 1               | 2                 | 5                  | 4                  |
|   |                            | Child underweight (%)                   | 2               | 1               | 3                 | 5                  | 4                  |
|   |                            | Child wasting (%)                       | 1               | 3               | 4                 | 2                  | 5                  |
| <b>TOTAL</b>  |                            | <b>8</b>                                | <b>10</b>       | <b>14.5</b>     | <b>18.5</b>       | <b>22</b>          |                    |
|   | <b>Standard of living</b>  | Electricity - no (%)                    | 2               | 1               | 2                 | 5                  | 4                  |
|   |                            | Drinking water not MDG (%)              | 2               | 3               | 1                 | 4                  | 5                  |
|   |                            | Sanitation not MDG (%)                  | 4               | 1               | 2                 | 3                  | 5                  |
|   |                            | Foundation construction - poor (%)      | 1               | 2               | 3                 | 5                  | 4                  |
|   |                            | Wall construction - poor (%)            | 3               | 1               | 2                 | 4                  | 5                  |
|   |                            | Roof construction - poor (%)            | 4               | 2               | 3                 | 5                  | 1                  |
|   |                            | Cooking - poor (%)                      | 3               | 1               | 2                 | 4                  | 5                  |
|   |                            | Assets – none (%)                       | 3               | 1               | 2                 | 4                  | 5                  |
| <b>TOTAL</b>  |                            | <b>22</b>                               | <b>12</b>       | <b>17</b>       | <b>30</b>         | <b>34</b>          |                    |
|   | <b>Women's empowerment</b> | Literacy status female (% illiterate)   | 3               | 2               | 1                 | 5                  | 4                  |
|   |                            | Female 11+ years of schooling (%)       | 3               | 1               | 2                 | 5                  | 4                  |
|   |                            | Female headed (%)                       | 2               | 1               | 4                 | 3                  | 5                  |
| <b>TOTAL</b>  |                            | <b>8</b>                                | <b>4</b>        | <b>7</b>        | <b>13</b>         | <b>13</b>          |                    |
|   | <b>Remoteness</b>          | Remoteness health post > 60 minutes (%) | 3               | 1               | 2                 | 5                  | 4                  |
|   |                            | Remoteness road head > 60 minutes (%)   | 3               | 1               | 2                 | 4                  | 5                  |
|   |                            | Remoteness market > 60 minutes (%)      | 3               | 1               | 2                 | 5                  | 4                  |
| <b>TOTAL</b>  |                            | <b>9</b>                                | <b>3</b>        | <b>6</b>        | <b>14</b>         | <b>13</b>          |                    |
| <b>CHRONIC POVERTY TOTAL AND MEAN VULNERABILITY</b>     |                            |   | <b>63 (2.5)</b> | <b>41 (1.6)</b> | <b>55.5 (2.2)</b> | <b>100.5 (4.0)</b> | <b>108 (4.3)</b>   |
|   | <b>Risks</b>               | Caste (Dalits, %)                       | 2               | 1               | 5                 | 4                  | 3                  |
|   |                            | Rural (%)                               | 2               | 1               | 3                 | 5                  | 4                  |
|   |                            | Dependency ratio                        | 3               | 1               | 2                 | 5                  | 4                  |
|   | <b>Resilience (coping)</b> | Loans (%)                               | 4               | 1               | 2                 | 5                  | 3                  |
|   |                            | Migrants from abroad (%)                | 2               | 3               | 1                 | 5                  | 4                  |
|   | <b>Food insecurity</b>     | Agricultural land (persons per hectare) | 5               | 1               | 2                 | 3.5                | 3.5                |
|   |                            | Land owned (no %)                       | 4               | 5               | 3                 | 1                  | 2                  |
| <b>VULNERABILITY TOTAL AND MEAN</b>                     |                            |   | <b>22 (3.1)</b> | <b>13 (1.9)</b> | <b>18 (2.6)</b>   | <b>28.5 (4.1)</b>  | <b>23.5 (3.4)</b>  |
| <b>CHRONIC POVERTY AND VULNERABILITY TOTAL AND MEAN</b> |                            |   | <b>85 (2.7)</b> | <b>54 (1.7)</b> | <b>73.5 (2.3)</b> | <b>129 (4.0)</b>   | <b>131.5 (4.1)</b> |

**Figure 5.1 Ranked chronic poverty dimensions by region (higher percentage indicative of worse condition)**



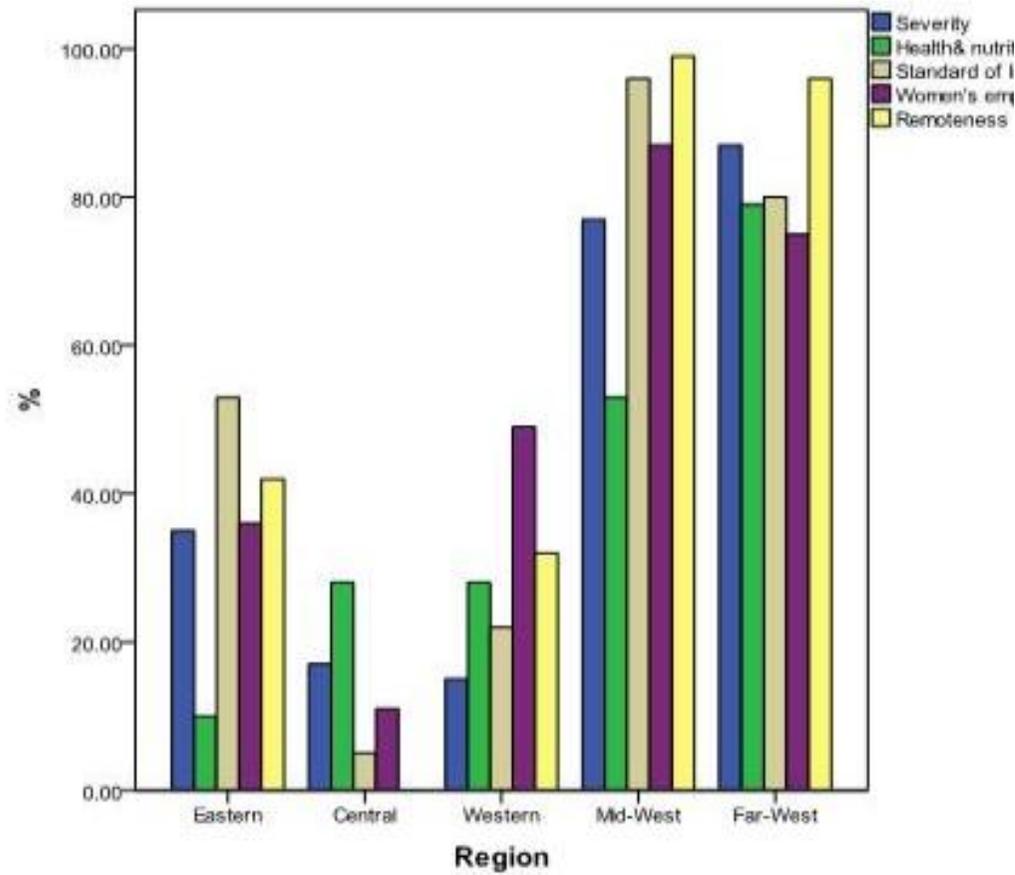
**Figure 5.2 Ranked chronic poverty, vulnerability and food insecurity and total by region (higher percentage indicative of worse condition)**



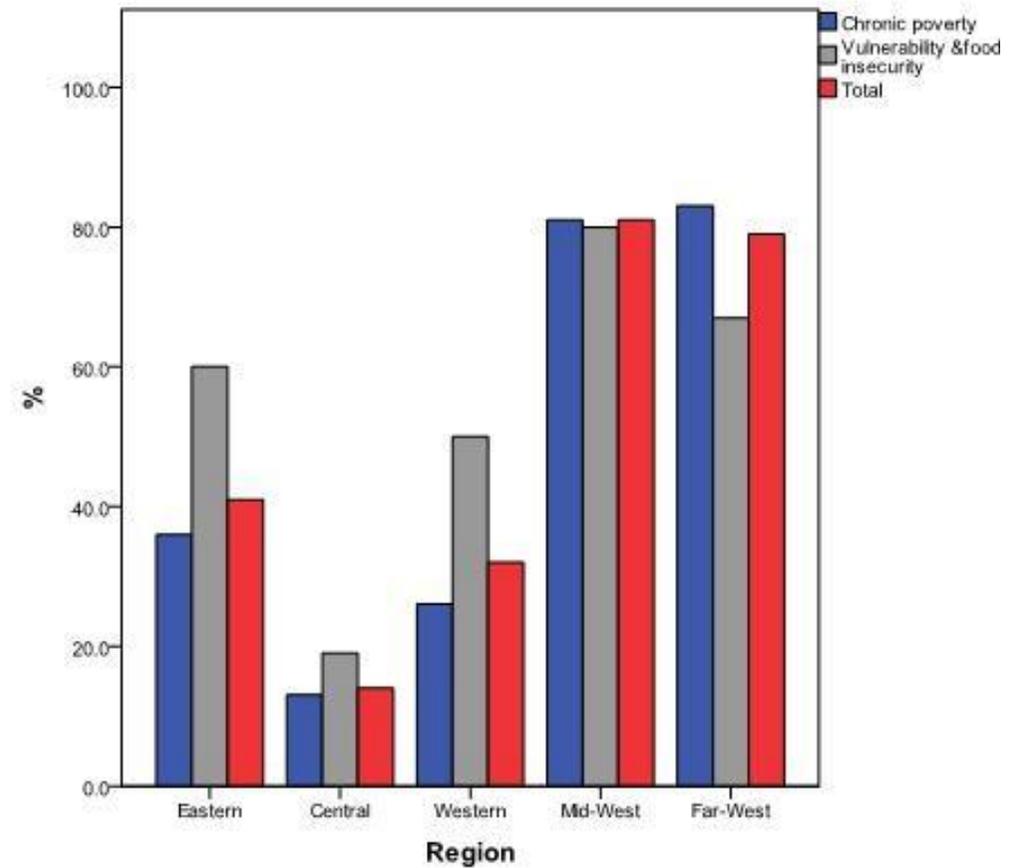
**Table 5.4: Zero-to-one scoring transformation and the mean composite indices by region (0= best, 1= worst)**

| CHRONIC POVERTY   | Dimension                  | Indicator                               | Eastern             | Central            | Western            | Mid-West            | Far-West            |
|---|----------------------------|---|---------------------|--------------------|--------------------|---------------------|---------------------|
|   | <b>Severity</b>            | Poverty - Total (%)                     | 0.07                | 0                  | 0.01               | 0.51                | 1                   |
|   |                            | Poverty - food poor (%)                 | 0                   | 0.04               | 0.03               | 0.62                | 1                   |
|   |                            | Poverty - non-food poor (%)             | 0.23                | 0                  | 0.02               | 0.70                | 1                   |
|   |                            | Adult illiteracy rate (%)               | 0.43                | 0                  | 0.23               | 1                   | 0.62                |
|   |                            | Adult 11+ years of schooling (%)        | 0.75                | 0                  | 0.60               | 1                   | 0.74                |
|   |                            | Remittances (% not receiving)           | 0.61                | 1                  | 0                  | 0.76                | 0.84                |
| <b>TOTAL</b>  |                            |   | <b>2.09</b>         | <b>1.04</b>        | <b>0.89</b>        | <b>4.59</b>         | <b>5.20</b>         |
|   | <b>Health</b>              | Child mortality – all (%)               | 0                   | 0.10               | 0.20               | 0.49                | 1                   |
|   |                            | Child immunisation – no (%)             | 0                   | 1                  | 0.06               | 0.06                | 0.88                |
|   | <b>Nutrition</b>           | Child stunting (%)                      | 0.37                | 0                  | 0.30               | 1                   | 0.38                |
|   |                            | Child underweight (%)                   | 0.14                | 0                  | 0.25               | 1                   | 0.71                |
|   |                            | Child wasting (%)                       | 0                   | 0.32               | 0.60               | 0.08                | 1                   |
| <b>TOTAL</b>  |                            |   | <b>0.51</b>         | <b>1.42</b>        | <b>1.41</b>        | <b>2.63</b>         | <b>3.97</b>         |
|   | <b>Standard of living</b>  | Electricity - no (%)                    | 0.41                | 0                  | 0.09               | 1                   | 0.81                |
|   |                            | Drinking water not MDG (%)              | 0.12                | 0.25               | 0                  | 0.97                | 1                   |
|   |                            | Sanitation not MDG (%)                  | 0.89                | 0                  | 0.04               | 0.88                | 1                   |
|   |                            | Foundation construction - poor (%)      | 0                   | 0.04               | 0.56               | 1                   | 0.76                |
|   |                            | Wall construction - poor (%)            | 0.73                | 0                  | 0.26               | 0.93                | 1                   |
|   |                            | Roof construction - poor (%)            | 0.75                | 0.08               | 0.14               | 1                   | 0                   |
|   |                            | Cooking - poor (%)                      | 0.82                | 0                  | 0.47               | 0.95                | 1                   |
|   |                            | Assets – none (%)                       | 0.34                | 0                  | 0.08               | 0.81                | 1                   |
| <b>TOTAL</b>  |                            |   | <b>4.06</b>         | <b>0.37</b>        | <b>1.64</b>        | <b>7.54</b>         | <b>6.57</b>         |
|   | <b>Women's empowerment</b> | Literacy status female (% illiterate)   | 0.33                | 0.32               | 0                  | 1                   | 0.49                |
|   |                            | Female 11+ years of schooling (%)       | 0.58                | 0                  | 0.50               | 1                   | 0.76                |
|   |                            | Female headed (%)                       | 0.16                | 0                  | 0.97               | 0.60                | 1                   |
| <b>TOTAL</b>  |                            |   | <b>1.07</b>         | <b>0.32</b>        | <b>1.47</b>        | <b>2.60</b>         | <b>2.25</b>         |
|   | <b>Remoteness</b>          | Remoteness health post > 60 minutes (%) | 0.34                | 0                  | 0.18               | 1                   | 0.96                |
|   |                            | Remoteness road head > 60 minutes (%)   | 0.44                | 0                  | 0.18               | 0.97                | 1                   |
|   |                            | Remoteness market > 60 minutes (%)      | 0.49                | 0                  | 0.60               | 1                   | 0.91                |
| <b>TOTAL</b>  |                            |   | <b>1.27</b>         | <b>0</b>           | <b>0.96</b>        | <b>2.97</b>         | <b>2.87</b>         |
| <b>CHRONIC POVERTY TOTAL AND MEAN</b>                   |                            |   | <b>9.00 (0.36)</b>  | <b>3.15 (0.13)</b> | <b>6.37 (0.25)</b> | <b>20.33 (0.81)</b> | <b>20.86 (0.83)</b> |
| <b>VULNERABILITY</b>                                    | <b>Risks</b>               | Caste (Dalits, %)                       | 0.34                | 0                  | 1                  | 0.98                | 0.89                |
|   |                            | Rural (%)                               | 0.65                | 0                  | 0.68               | 1                   | 0.82                |
|   |                            | Dependency ratio                        | 0.55                | 0                  | 0.42               | 1                   | 0.95                |
|   | <b>Resilience (coping)</b> | Loans (%)                               | 0.85                | 0                  | 0.51               | 1                   | 0.54                |
|   |                            | Migrants from abroad (%)                | 0.23                | 0.33               | 0                  | 1                   | 0.87                |
|   | <b>Food insecurity</b>     | Agricultural land (persons per hectare) | 1                   | 0                  | 0.56               | 0.62                | 0.62                |
| Land owned (no %)                                       |                            | 0.57                                    | 1                   | 0.33               | 0                  | 0.01                |                     |
| <b>VULNERABILITY TOTAL AND MEAN</b>                     |                            |   | <b>4.19 (0.60)</b>  | <b>1.33 (0.19)</b> | <b>3.5 (0.50)</b>  | <b>5.60 (0.80)</b>  | <b>4.70 (0.67)</b>  |
| <b>CHRONIC POVERTY AND VULNERABILITY TOTAL AND MEAN</b> |                            |   | <b>13.13 (0.41)</b> | <b>4.48 (0.14)</b> | <b>9.87 (0.31)</b> | <b>25.93 (0.81)</b> | <b>25.56 (0.80)</b> |

**Figure 5.3 Chronic poverty composite index dimensions by region (%)**



**Figure 5.4 Chronic poverty, vulnerability and food insecurity and total composite index by region (%)**



**Table 5.5: Mean Overall Poverty Gap index (PG) by region**

| Region   | Overall PG | p      | Post-hoc differences between regions |         |          |          |
|----------|------------|--------|--------------------------------------|---------|----------|----------|
|          |            |        | Central                              | Western | Mid-West | Far-West |
| Eastern  | 2.82       | <0.001 | ns                                   | ns      | <0.001   | <0.001   |
| Central  | 3.38       |        |                                      | ns      | <0.001   | <0.001   |
| Western  | 2.91       |        |                                      |         | <0.001   | <0.001   |
| Mid-West | 6.18       |        |                                      |         |          | <0.001   |
| Far-West | 8.34       |        |                                      |         |          |          |

**Table 5.6: Mean Food Poverty Gap index (PG) by region**

| Region   | Food PG | p      | Post-hoc differences between regions |         |          |          |
|----------|---------|--------|--------------------------------------|---------|----------|----------|
|          |         |        | Central                              | Western | Mid-West | Far-West |
| Eastern  | 2.46    | <0.001 | ns                                   | ns      | <0.001   | <0.001   |
| Central  | 3.38    |        |                                      | ns      | <0.001   | <0.001   |
| Western  | 2.86    |        |                                      |         | <0.001   | <0.001   |
| Mid-West | 6.35    |        |                                      |         |          | ns       |
| Far-West | 7.80    |        |                                      |         |          |          |

**Table 5.7: Mean Non-food Poverty Gap index (PG) by region**

| Region   | Non-food PG | p      | Post-hoc differences between regions |         |          |          |
|----------|-------------|--------|--------------------------------------|---------|----------|----------|
|          |             |        | Central                              | Western | Mid-West | Far-West |
| Eastern  | 8.91        | <0.001 | ns                                   | ns      | <0.001   | <0.001   |
| Central  | 7.01        |        |                                      | ns      | <0.001   | <0.001   |
| Western  | 6.77        |        |                                      |         | <0.001   | <0.001   |
| Mid-West | 13.37       |        |                                      |         |          | ns       |
| Far-West | 15.99       |        |                                      |         |          |          |

**Table 5.8: Overall Squared Poverty Gap Index (SPGI) by region**

| Region   | Overall SPGI | p      | Post-hoc differences between regions |         |          |          |
|----------|--------------|--------|--------------------------------------|---------|----------|----------|
|          |              |        | Central                              | Western | Mid-West | Far-West |
| Eastern  | 0.75         | <0.001 | ns                                   | ns      | <0.001   | <0.001   |
| Central  | 1.22         |        |                                      | ns      | <0.001   | <0.001   |
| Western  | 0.94         |        |                                      |         | <0.001   | <0.001   |
| Mid-West | 2.10         |        |                                      |         |          | ns       |
| Far-West | 2.82         |        |                                      |         |          |          |

**Table 5.9: Food Squared Poverty Gap Index (SPGI) by region**

| Region   | Food SPGI | p      | Post-hoc differences between regions |         |          |          |
|----------|-----------|--------|--------------------------------------|---------|----------|----------|
|          |           |        | Central                              | Western | Mid-West | Far-West |
| Eastern  | 2.46      | <0.001 | ns                                   | ns      | <0.001   | <0.001   |
| Central  | 3.38      |        |                                      | ns      | <0.001   | <0.001   |
| Western  | 2.86      |        |                                      |         | <0.001   | <0.001   |
| Mid-West | 6.35      |        |                                      |         |          | ns       |
| Far-West | 7.89      |        |                                      |         |          |          |

**Table 5.10: Non-food Squared Poverty Gap Index (SPGI) by region**

| Region   | Non-food SPGI | p      | Post-hoc differences between regions |         |          |          |
|----------|---------------|--------|--------------------------------------|---------|----------|----------|
|          |               |        | Central                              | Western | Mid-West | Far-West |
| Eastern  | 3.79          | <0.001 | ns                                   | ns      | <0.001   | <0.001   |
| Central  | 3.19          |        |                                      | ns      | <0.001   | <0.001   |
| Western  | 2.88          |        |                                      |         | <0.001   | <0.001   |
| Mid-West | 6.25          |        |                                      |         |          | ns       |
| Far-West | 7.46          |        |                                      |         |          |          |

## 5.4 Zonal analysis

The analysis examined the same 32 indicators for the three Mid-West zones (Bheri, Karnali and Rapti) and two Far-West zones (Mahakali and Seti) based on NLSS III and the 16 indicators from the UNICEF database

### 5.4.1 Ranking

#### NLSS III

The variation in indicators by zone is presented in Table 5.11. All 32 indicators were then ranked by zone and the results are presented in Table 5.12. When all 25 chronic poverty indicators were combined there was highly significant variation between zones ( $p < 0.001$ ) with Karnali zone having the worst overall ranking as well as the worst or equal worst ranking on all five dimensions. Figure 5.5 presents the dimension percentages (out of the maximum ranking for each dimension, so higher percentages are indicative of greater chronic poverty) and Karnali's overall chronic poverty percentage was 90% followed by Seti (60%), Rapti (56%), (Mahakali (48%) and Bheri (39%).

Vulnerability rankings were much more homogeneous across zones with Karnali being just the most vulnerable (73%) followed by Seti (71%), Rapti (66%), Bheri (61%) and Mahakali (40%). When all 32 indicators were combined (Figure 5.6), Karnali was the worst zone (86%) followed by Seti (63%), Rapti (58%), Bheri and Mahakali (both 44%).

#### UNICEF

Table 5.13 presents the percentages for the 16 indicators across the 5 zones and Table 5.14 shows the rankings for each zone. Overall there was significant heterogeneity between zones ( $p < 0.001$ ). Post hoc tests showed that both Karnali and Seti had worse means than either Mahakali and Bheri. In percentage terms Karnali was the worst zone (78%) followed by Seti (74%), Rapti (59%), Mahakali (48%) and Bheri (42%). So although the percentages are different the ordering of zones is very similar between the NLSS III and UNICEF surveys.

### 5.4.2 Composite index

#### NLSS III

The results of the composite index analyses are presented in Table 5.15. Karnali was the worst zone across all five chronic poverty dimensions. Very significant differences between zones were found for basic services and standard of living. For severity Karnali was 60% worse than the next zone and for standard of living 42% worse than the next zone. When all

25 chronic indicators were combined, Karnali was significantly the worst zone at 87% (Figure 5.7) followed by Rapti (45%), Seti (41%), Mahakali (19%) and Bheri (18%).

There was much less zonal variation in vulnerability indicators except for Mahakali. Karnali and Seti were equal most vulnerable zones (both 62%) followed by Rapti (56%), Bheri (51%) and Mahakali (10%).

When all 32 indicators were considered Karnali was significantly the worst zone (82%,  $p < 0.001$  and Figure 5.8) followed by Rapti (48%), Seti (45%), Bheri (25%) and Mahakali (17%).

## **UNICEF**

The results of the composite index analyses for the UNICEF data are presented in Table 5.16. Very significant differences zonal differences were found ( $p < 0.001$ ) with Karnali being the worst zone. Post-hoc tests revealed that Karnali was significantly worse than Mahakali and Bheri, while Seti was significantly worse than Bheri.

### **5.4.3 Poverty Gap and Squared Poverty Gap Indices**

The poverty gap indices analyses revealed that there was significant variation in all three poverty indices between zones (Tables 5.17 to 5.22). The overall poverty gap index and non-food poverty gap index was significantly worse in Karnali than in all other zones. Mean food poverty gap was significantly worse in Karnali compared with Bheri and Rapti. The squared poverty gap indices also varied significantly across the five zones and post-hoc tests revealed that Karnali was the worst overall and for non-food squared poverty. There were no significant post-hoc differences in food squared poverty index between zones.

## **5.5 District level analyses**

District level analyses were carried out using the UNICEF data. Table 5.23 presents the variation by indicator for the 24 districts and Table 5.24 presents the rankings. Across all 16 indicators Aachem was the worst district (Table 5.25). The five Karnali districts were ranked 22<sup>nd</sup>, 21<sup>st</sup>, 20<sup>th</sup>, 19<sup>th</sup> and 15<sup>th</sup>.

Details of the composite index score are presented in Table 5.26. Overall Aachem was the worst district (Table 5.27). The five Karnali districts ranked 22<sup>nd</sup>, 21<sup>st</sup>, 19<sup>th</sup>, 17<sup>th</sup>, and 16<sup>th</sup>. There was broad agreement in the order of districts based on ranking and composite index score.

## **5.6 Conclusions**

**5.6.1.** The ranking analysis using the NLSS III survey revealed that Karnali had the greatest overall chronic poverty of 90% followed by Seti (60%), Rapti (56%), Mahakali (48%) and Bheri (40%). The composite analyses gave slightly different percentages but the order of zones was identical with Karnali being the worst zone (87%) followed by Rapti (45%), Seti (41%), Mahakali (19%) and Bheri (18%).

**5.6.2.** Both analyses found that Karnali had by far the worst severity and standard of living dimensions. Severity was 59% worse in Karnali than the next zone based on the composite

index and 40% worse base on ranking. For access to facilities and standard of living Karnali was 42% worse than the next zone based on composite index and 25% worse on ranking.

**5.6.3.** The poverty gap analyses confirmed Karnali as having much higher overall and non-food poverty as well as greater overall and non-food inequality (squared poverty gap index).

**5.6.4.** Vulnerability rankings were much more homogeneous across zones. Overall Karnali was the most vulnerable (73%), followed by Seti (71%), Rapti (66%), Bheri (61%) and Bheri (63%), Mahakali (40%). The composite index analyses revealed that Karnali and Seti were the worst zones (both 62%) followed by Rapti (56%), Bheri (51%) and Mahakali (10%). and Rapti (33%).

**5.6.5.** The ranking analyses using both NLSS III and UNICEF surveys revealed that Karnali was the worst zone, followed by Seti and Rapti. Bheri and Mahakali were the best two zones in the two surveys. Using the composite index Karnali was the worst zone, Rapti was the next worst in NLSS III and Seti in UNICEF and Bheri and Mahakali were the best two zones in both surveys.

**5.6.6.** District level analyses of the UNICEF data revealed using either ranking or composite index score that Aachem was the worst of the 24 districts with the five Karnali districts also showing high levels of chronic poverty and vulnerability.

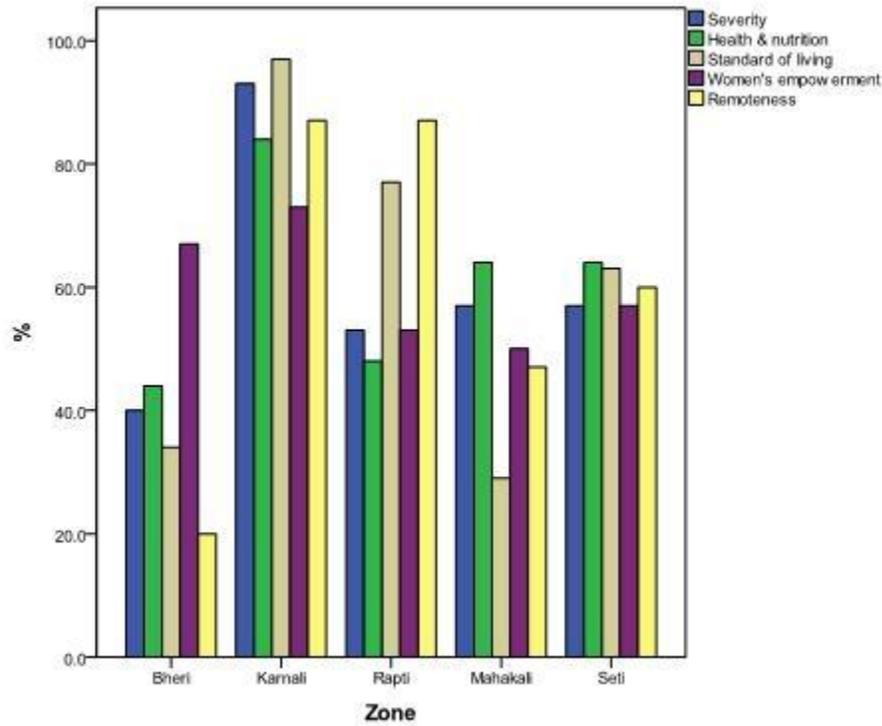
**Table 5.11: Variation in NLSS III indicators by zone**

| CHRONIC POVERTY      | Dimension           | Indicator                               | Mid-West |         |       | Far-West |       |
|----------------------|---------------------|---|----------|---------|-------|----------|-------|
|                      |                     |   | Bheri    | Karnali | Rapti | Mahakali | Seti  |
|                      | Severity            | Poverty - Total (%)                     | 24.0     | 48.3    | 24.7  | 32.4     | 40.7  |
|                      |                     | Poverty - food poor (%)                 | 25.3     | 45.0    | 27.2  | 32.9     | 36.5  |
|                      |                     | Poverty - non-food poor (%)             | 35.7     | 76.7    | 34.3  | 42.6     | 47.1  |
|                      |                     | Adult illiteracy rate (%)               | 49.5     | 65.0    | 55.4  | 40.5     | 51.0  |
|                      |                     | Adult 11+ years of schooling (%)        | 9.9      | 8.3     | 5.1   | 10.6     | 13.8  |
|                      |                     | Remittances (% not receiving)           | 29.4     | 11.7    | 33.7  | 7.4      | 42.9  |
| <b>TOTAL</b>         |                     |   |          |         |       |          |       |
|                      | Health              | Child mortality (%)                     | 20.0     | 29.6    | 20.5  | 22.4     | 31.5  |
|                      |                     | Child immunisation – no (%)             | 3.3      | 8.0     | 2.2   | 4.0      | 5.6   |
|                      | Nutrition           | Child stunting (%)                      | 39.6     | 58.7    | 56.9  | 39.2     | 38.3  |
|                      |                     | Child underweight (%)                   | 29.6     | 48.9    | 34.5  | 31.3     | 31.7  |
|                      |                     | Child wasting (%)                       | 13.2     | 10.6    | 8.6   | 16.5     | 11.6  |
| <b>TOTAL</b>         |                     |   |          |         |       |          |       |
|                      | Standard of living  | Electricity - no (%)                    | 43.8     | 60.0    | 62.8  | 35.6     | 52.9  |
|                      |                     | Drinking water not MDG (%)              | 23.2     | 41.7    | 28.5  | 20.4     | 32.1  |
|                      |                     | Sanitation not MDG (%)                  | 70.6     | 85.0    | 72.8  | 69.0     | 81.7  |
|                      |                     | Foundation construction - poor (%)      | 56.0     | 93.3    | 87.2  | 59.3     | 65.7  |
|                      |                     | Wall construction - poor (%)            | 70.3     | 100.0   | 92.6  | 75.0     | 90.7  |
|                      |                     | Roof construction - poor (%)            | 28.9     | 85.0    | 51.9  | 2.8      | 8.0   |
|                      |                     | Cooking - poor (%)                      | 83.9     | 100.0   | 94.2  | 90.7     | 92.3  |
|                      |                     | Assets – none (%)                       | 19.8     | 51.7    | 22.8  | 23.1     | 29.9  |
| <b>TOTAL</b>         |                     |   |          |         |       |          |       |
|                      | Women's empowerment | Literacy status female (% illiterate)   | 30.6     | 52.5    | 27.1  | 23.9     | 29.9  |
|                      |                     | Female 11+ years of schooling (%)       | 12.0     | 3.4     | 7.1   | 12.7     | 15.6  |
|                      |                     | Female headed (%)                       | 33.3     | 10.0    | 28.2  | 34.3     | 34.3  |
| <b>TOTAL</b>         |                     |   |          |         |       |          |       |
|                      | Remoteness          | Remoteness health post > 60 minutes (%) | 12.2     | 20.0    | 40.1  | 19.9     | 26.3  |
|                      |                     | Remoteness road head > 60 minutes (%)   | 15.4     | 60.0    | 31.7  | 23.1     | 28.5  |
|                      |                     | Remoteness market > 60 minutes (%)      | 34.1     | 80.0    | 63.5  | 50.5     | 44.9  |
| <b>TOTAL</b>         |                     |   |          |         |       |          |       |
| <b>VULNERABILITY</b> | Risks               | Caste (Dalits, %)                       | 21.7     | 12.5    | 15.4  | 12.2     | 20.8  |
|                      |                     | Rural (%)                               | 78.1     | 100.0   | 88.5  | 72.2     | 84.6  |
|                      |                     | Dependency ratio                        | 115.8    | 133.2   | 115.1 | 108.0    | 120.0 |
|                      | Resilience (coping) | Loans (%)                               | 66.7     | 66.7    | 73.7  | 60.2     | 65.4  |
|                      |                     | Migrants from abroad (%)                | 3.4      | 0       | 0.7   | 2.6      | 2.1   |
|                      | Food insecurity     | Agricultural land (persons per hectare) | 12.7     | 11.3    | 12.4  | 15.3     | 10.6  |
|                      |                     | Land owned (no %)                       | 15.6     | 0       | 4.8   | 7.4      | 11.9  |
| <b>TOTAL</b>         |                     |   |          |         |       |          |       |

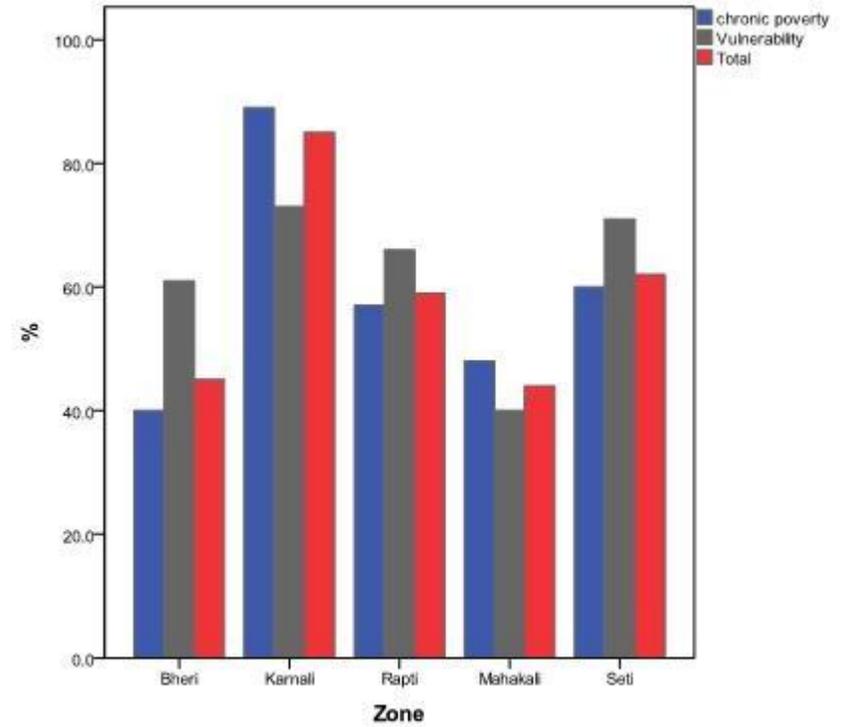
**Table 5.12: NLSS III Indicators ranked by zone (1 = best and 5 = worst rank)**

| CHRONIC POVERTY   | Dimension           | Indicator                               | Mid-West                    |                              |                           | Far-West                    |                              |
|---|---------------------|---|-----------------------------|------------------------------|---------------------------|-----------------------------|------------------------------|
|   |                     |   | Bheri                       | Karnali                      | Rapti                     | Mahakali                    | Seti                         |
|   | Severity            | Poverty Total (%)                       | 1                           | 5                            | 2                         | 3                           | 4                            |
|   |                     | Poverty - food poor (%)                 | 1                           | 5                            | 2                         | 3                           | 4                            |
|   |                     | Poverty - non-food poor (%)             | 2                           | 5                            | 1                         | 3                           | 4                            |
|   |                     | Adult illiteracy rate (%)               | 2                           | 5                            | 4                         | 1                           | 3                            |
|   |                     | Adult 11+ years of schooling (%)        | 3                           | 4                            | 5                         | 2                           | 1                            |
|   |                     | Remittances (% not receiving)           | 3                           | 4                            | 2                         | 5                           | 1                            |
| <b>TOTAL</b>  |                     |   | <b>12</b>                   | <b>28</b>                    | <b>16</b>                 | <b>17</b>                   | <b>17</b>                    |
|   | Health              | Child mortality (%)                     | 1                           | 4                            | 2                         | 3                           | 5                            |
|   |                     | Child immunisation – no (%)             | 2                           | 5                            | 1                         | 3                           | 4                            |
|   | Nutrition           | Child stunting (%)                      | 3                           | 5                            | 4                         | 2                           | 1                            |
|   |                     | Child underweight (%)                   | 1                           | 5                            | 4                         | 3                           | 2                            |
|   |                     | Child wasting (%)                       | 4                           | 2                            | 1                         | 5                           | 3                            |
| <b>TOTAL</b>  |                     |   | <b>11</b>                   | <b>21</b>                    | <b>12</b>                 | <b>16</b>                   | <b>15</b>                    |
|   | Standard of living  | Electricity - no (%)                    | 2                           | 4                            | 5                         | 1                           | 3                            |
|   |                     | Drinking water not MDG (%)              | 2                           | 5                            | 3                         | 1                           | 4                            |
|   |                     | Sanitation not MDG (%)                  | 2                           | 5                            | 3                         | 1                           | 4                            |
|   |                     | Foundation construction - poor (%)      | 1                           | 5                            | 4                         | 2                           | 3                            |
|   |                     | Wall construction - poor (%)            | 1                           | 5                            | 4                         | 2                           | 3                            |
|   |                     | Roof construction - poor (%)            | 3                           | 5                            | 4                         | 1                           | 2                            |
|   |                     | Cooking - poor (%)                      | 1                           | 5                            | 4                         | 2                           | 3                            |
|   |                     | Assets – none (%)                       | 1                           | 5                            | 2                         | 3                           | 4                            |
| <b>TOTAL</b>  |                     |   | <b>13</b>                   | <b>39</b>                    | <b>29</b>                 | <b>13</b>                   | <b>26</b>                    |
|   | Women's empowerment | Literacy status female (% illiterate)   | 4                           | 5                            | 2                         | 1                           | 3                            |
|   |                     | Female 11+ years of schooling (%)       | 3                           | 5                            | 4                         | 2                           | 1                            |
|   |                     | Female headed (%)                       | 3                           | 1                            | 2                         | 4.5                         | 4.5                          |
| <b>TOTAL</b>  |                     |   | <b>10</b>                   | <b>11</b>                    | <b>8</b>                  | <b>7.5</b>                  | <b>8.5</b>                   |
|   | Remoteness          | Remoteness health post > 60 minutes (%) | 1                           | 3                            | 5                         | 2                           | 4                            |
|   |                     | Remoteness road head > 60 minutes (%)   | 1                           | 5                            | 4                         | 2                           | 3                            |
|   |                     | Remoteness market > 60 minutes (%)      | 1                           | 5                            | 4                         | 3                           | 2                            |
| <b>TOTAL</b>  |                     |   | <b>3</b>                    | <b>13</b>                    | <b>13</b>                 | <b>7</b>                    | <b>9</b>                     |
| <b>CHRONIC POVERTY TOTAL AND MEAN</b>                   |                     |   | <b>49</b><br><b>(2.0)</b>   | <b>112</b><br><b>(4.5)</b>   | <b>70</b><br><b>(2.8)</b> | <b>60.5</b><br><b>(2.4)</b> | <b>75.5</b><br><b>(3.0)</b>  |
| <b>VULNERABILITY</b>                                    | Risks               | Caste (Dalits, %)                       | 5                           | 2                            | 3                         | 1                           | 4                            |
|   |                     | Rural (%)                               | 2                           | 5                            | 4                         | 1                           | 3                            |
|   |                     | Dependency ratio                        | 3                           | 5                            | 2                         | 1                           | 4                            |
|   | Resilience (coping) | Loans (%)                               | 3.5                         | 3.5                          | 5                         | 1                           | 2                            |
|   |                     | Migrant from abroad (%)                 | 1                           | 5                            | 4                         | 2                           | 3                            |
|   | Food insecurity     | Agricultural land (persons per hectare) | 2                           | 4                            | 3                         | 1                           | 5                            |
|   |                     | Land owned (no %)                       | 5                           | 1                            | 2                         | 3                           | 4                            |
| <b>TOTAL</b>  |                     |   | <b>21.5</b><br><b>(3.1)</b> | <b>25.5</b><br><b>(3.6)</b>  | <b>23</b><br><b>(3.3)</b> | <b>10</b><br><b>(1.4)</b>   | <b>25</b><br><b>(3.6)</b>    |
| <b>CHRONIC POVERTY AND VULNERABILITY TOTAL AND MEAN</b> |                     |   | <b>70.5</b><br><b>(2.2)</b> | <b>137.5</b><br><b>(4.3)</b> | <b>93</b><br><b>(2.9)</b> | <b>70.5</b><br><b>(2.2)</b> | <b>100.5</b><br><b>(3.1)</b> |

**Figure 5.5 Ranked chronic poverty and vulnerability dimensions (%) by zone (higher percentage indicative of worse condition)**



**Figure 5.6 Ranked chronic poverty, vulnerability, food insecurity and total (%) by zone (higher percentage indicative of worse condition)**



**Table 5.13: Variation in UNICEF indicators by zone**

| CHRONIC POVERTY      | Dimension           | Indicator                             | Mid-West |         |       | Far-West |      | Total |
|----------------------|---------------------|---------------------------------------|----------|---------|-------|----------|------|-------|
|                      |                     |                                       | Bheri    | Karnali | Rapti | Mahakali | Seti |       |
|                      | Severity            | Wealth quintile – poorest 2 (%)       | 31.0     | 78.6    | 49.7  | 35.9     | 62.6 | 53.9  |
|                      |                     | Adult illiteracy rate (%)             | 43.3     | 51.7    | 51.2  | 43.1     | 54.0 | 49.0  |
|                      | Health              | Child immunisation – no (%)           | 12.0     | 9.0     | 4.0   | 14.0     | 8.1  | 9.3   |
|                      | Standard of living  | Electricity – no (%)                  | 32.6     | 68.3    | 35.8  | 39.8     | 56.3 | 47.2  |
|                      |                     | Drinking water not MDG (%)            | 10.2     | 16.8    | 24.0  | 12.6     | 21.2 | 17.1  |
|                      |                     | Sanitation not MDG (%)                | 56.6     | 65.3    | 55.2  | 61.7     | 75.8 | 64.7  |
|                      |                     | Floor construction – poor (%)         | 73.4     | 99.9    | 90.5  | 84.0     | 89.2 | 86.8  |
|                      |                     | Wall construction – poor (%)          | 29.3     | 17.9    | 24.4  | 22.9     | 33.1 | 26.8  |
|                      |                     | Roof construction – poor (%)          | 21.4     | 56.1    | 39.7  | 6.3      | 15.1 | 24.4  |
|                      |                     | Cooking – poor (%)                    | 82.5     | 99.9    | 91.0  | 94.4     | 94.2 | 92.4  |
|                      |                     | Assets – none (%)                     | 16.0     | 52.5    | 18.6  | 22.7     | 29.3 | 27.3  |
|                      | Women's empowerment | Literacy status female (% illiterate) | 48.5     | 83.1    | 49.6  | 54.9     | 70.4 | 63.7  |
|                      |                     | Female headed (%)                     | 21.2     | 7.5     | 25.3  | 18.8     | 20.4 | 19.0  |
| <b>VULNERABILITY</b> | Risks               | Caste (Dalits, %)                     | 13.6     | 22.2    | 15.8  | 7.5      | 13.8 | 14.1  |
|                      |                     | Rural (%)                             | 60.0     | 100.0   | 80.0  | 73.9     | 82.4 | 78.7  |
|                      |                     | Land owned (no %)                     | 21.8     | 3.7     | 6.8   | 3.9      | 7.7  | 9.2   |

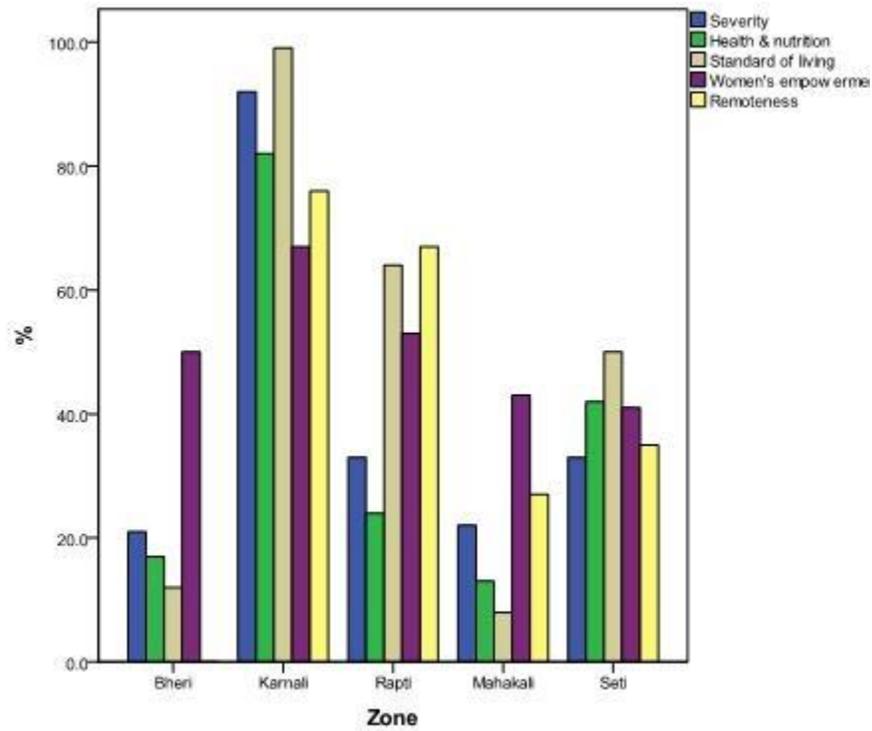
**Table 5.14: UNICEF indicators ranked by zone (1 = best and 5 = worst rank)**

| CHRONIC POVERTY                                | Dimension           | Indicator                             | Mid-West                  |                           |                           | Far-West                  |                           |
|--|---------------------|---------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
|  |                     |                                       | Bheri                     | Karnali                   | Rapti                     | Mahakali                  | Seti                      |
|  | Severity            | Wealth quintile – poorest 2 (%)       | 1                         | 5                         | 3                         | 2                         | 4                         |
|  |                     | Adult illiteracy rate (%)             | 2                         | 4                         | 3                         | 1                         | 5                         |
|  | Health              | Child immunisation – no (%)           | 4                         | 3                         | 1                         | 5                         | 2                         |
|  | Standard of living  | Electricity – no (%)                  | 1                         | 5                         | 2                         | 3                         | 4                         |
|  |                     | Drinking water not MDG (%)            | 1                         | 3                         | 5                         | 2                         | 4                         |
|  |                     | Sanitation not MDG (%)                | 2                         | 4                         | 1                         | 3                         | 5                         |
|  |                     | Floor construction – poor (%)         | 1                         | 5                         | 4                         | 2                         | 3                         |
|  |                     | Wall construction – poor (%)          | 4                         | 1                         | 3                         | 2                         | 5                         |
|  |                     | Roof construction – poor (%)          | 3                         | 5                         | 4                         | 1                         | 2                         |
|  |                     | Cooking – poor (%)                    | 1                         | 5                         | 2                         | 4                         | 3                         |
|  |                     | Assets – none (%)                     | 1                         | 5                         | 2                         | 3                         | 4                         |
|  | Women's empowerment | Literacy status female (% illiterate) | 1                         | 5                         | 2                         | 3                         | 4                         |
|  |                     | Female headed (%)                     | 4                         | 1                         | 5                         | 2                         | 3                         |
| <b>VULNERABILITY</b>                           | Risks               | Caste (Dalits, %)                     | 2                         | 5                         | 4                         | 1                         | 3                         |
|  |                     | Rural (%)                             | 1                         | 5                         | 3                         | 2                         | 4                         |
|  |                     | Land owned (no %)                     | 5                         | 1                         | 3                         | 2                         | 4                         |
| <b>TOTAL CHRONIC POVERTY AND VULNERABILITY</b> |                     |                                       | <b>34</b><br><b>(2.1)</b> | <b>62</b><br><b>(3.9)</b> | <b>47</b><br><b>(2.9)</b> | <b>38</b><br><b>(2.4)</b> | <b>59</b><br><b>(3.7)</b> |

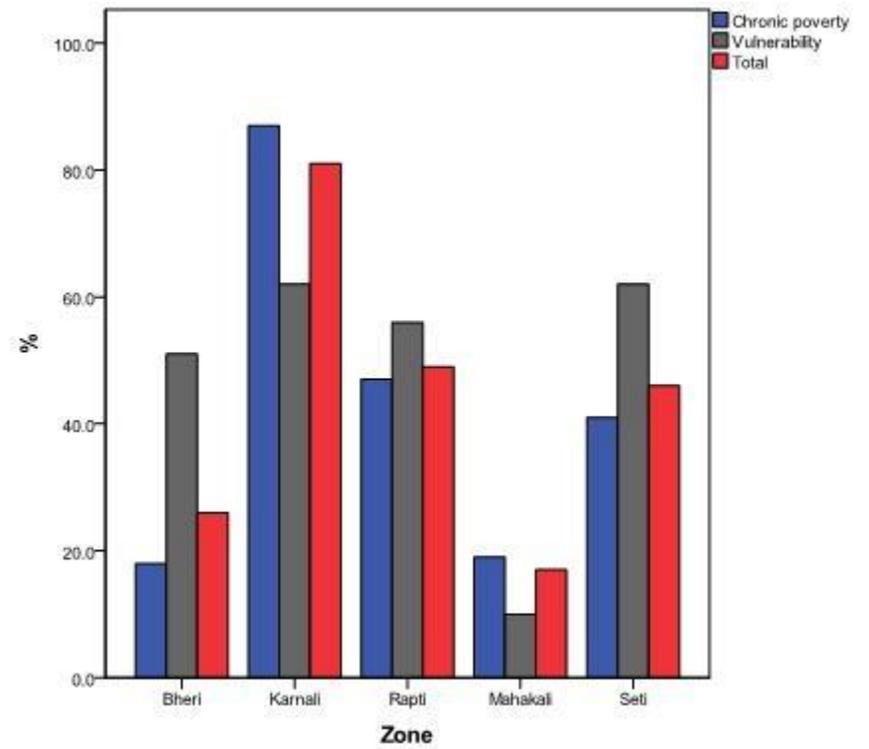
Table 5.15: NLSS III Zero-to-one scoring transformations used to derive the zonal composite indices (0 = best, 1 = worst zone)

| CHRONIC POVERTY   | Dimension           | Indicator                               | Bheri                        | Karnali                       | Rapti                         | Mahakali                     | Seti                          |
|---|---------------------|---|------------------------------|-------------------------------|-------------------------------|------------------------------|-------------------------------|
|   | Severity            | Poverty Total (%)                       | 0                            | 1                             | 0.02                          | 0.35                         | 0.69                          |
|   |                     | Poverty - food poor (%)                 | 0                            | 1                             | 0.10                          | 0.38                         | 0.57                          |
|   |                     | Poverty – non-food poor (%)             | 0.03                         | 1                             | 0                             | 0.20                         | 0.30                          |
|   |                     | Adult illiteracy rate (%)               | 0.37                         | 1                             | 0.61                          | 0                            | 0.43                          |
|   |                     | Adult 11+ years of schooling (%)        | 0.45                         | 0.63                          | 1                             | 0.37                         | 0                             |
|   |                     | Remittances (% not receiving)           | 0.38                         | 0.88                          | 0.26                          | 1                            | 0                             |
| <b>TOTAL</b>  |                     |   | <b>1.23</b>                  | <b>5.51</b>                   | <b>1.99</b>                   | <b>1.30</b>                  | <b>1.99</b>                   |
|   | Health              | Child mortality (%)                     | 0                            | 0.83                          | 0.04                          | 0.21                         | 1                             |
|   |                     | Child immunisation - no (%)             | 0.19                         | 1                             | 0                             | 0.31                         | 0.59                          |
|   | Nutrition           | Child stunting (%)                      | 0.06                         | 1                             | 0.91                          | 0.04                         | 0                             |
|   |                     | Child underweight (%)                   | 0                            | 1                             | 0.25                          | 0.09                         | 0.11                          |
|   |                     | Child wasting (%)                       | 0.58                         | 0.25                          | 0                             | 1                            | 0.38                          |
| <b>TOTAL</b>  |                     |   | <b>0.83</b>                  | <b>4.08</b>                   | <b>1.20</b>                   | <b>0.65</b>                  | <b>2.08</b>                   |
|   | Standard of living  | Electricity - no (%)                    | 0.30                         | 0.90                          | 1                             | 0                            | 0.64                          |
|   |                     | Drinking water not MDG (%)              | 0.13                         | 1                             | 0.38                          | 0                            | 0.55                          |
|   |                     | Sanitation not MDG (%)                  | 0.10                         | 1                             | 0.24                          | 0                            | 0.79                          |
|   |                     | Foundation construction - poor (%)      | 0                            | 1                             | 0.84                          | 0.09                         | 0.26                          |
|   |                     | Wall construction - poor (%)            | 0                            | 1                             | 0.75                          | 0.16                         | 0.69                          |
|   |                     | Roof construction - poor (%)            | 0.31                         | 1                             | 0.60                          | 0                            | 0.06                          |
|   |                     | Cooking - poor (%)                      | 0                            | 1                             | 0.64                          | 0.42                         | 0.52                          |
|   |                     | Assets – none (%)                       | 0                            | 1                             | 0.09                          | 0.10                         | 0.31                          |
| <b>TOTAL</b>  |                     |   | <b>0.84</b>                  | <b>7.90</b>                   | <b>4.54</b>                   | <b>0.77</b>                  | <b>3.82</b>                   |
|   | Women's empowerment | Literacy status female (% illiterate)   | 0.23                         | 1                             | 0.11                          | 0                            | 0.21                          |
|   |                     | Female 11+ years of schooling (%)       | 0.30                         | 1                             | 0.70                          | 0.23                         | 0                             |
|   |                     | Female headed (%)                       | 0.96                         | 0                             | 0.78                          | 1                            | 1                             |
| <b>TOTAL</b>  |                     |   | <b>1.49</b>                  | <b>2.00</b>                   | <b>1.59</b>                   | <b>1.23</b>                  | <b>1.21</b>                   |
|   | Remoteness          | Remoteness health post > 60 minutes (%) | 0                            | 0.28                          | 1                             | 0.28                         | 0.51                          |
|   |                     | Remoteness road head > 60 minutes (%)   | 0                            | 1                             | 0.36                          | 0.17                         | 0.29                          |
|   |                     | Remoteness market > 60 minutes (%)      | 0                            | 1                             | 0.64                          | 0.36                         | 0.24                          |
| <b>TOTAL</b>  |                     |   | <b>0</b>                     | <b>2.28</b>                   | <b>2.00</b>                   | <b>0.81</b>                  | <b>1.04</b>                   |
| <b>CHRONIC POVERTY TOTAL AND MEAN</b>                   |                     |   | <b>4.39</b><br><b>(0.18)</b> | <b>21.77</b><br><b>(0.87)</b> | <b>11.32</b><br><b>(0.45)</b> | <b>4.76</b><br><b>(0.19)</b> | <b>10.14</b><br><b>(0.41)</b> |
| <b>VULNERABILITY</b>                                    | Risks               | Caste (Dalits, %)                       | 1                            | 0.03                          | 0.34                          | 0                            | 0.91                          |
|   |                     | Rural (%)                               | 0.22                         | 1                             | 0.59                          | 0                            | 0.45                          |
|   | Resilience (coping) | Dependency ratio                        | 0.31                         | 1                             | 0.28                          | 0                            | 0.48                          |
|   |                     | Loans (%)                               | 0.48                         | 0.48                          | 1                             | 0                            | 0.39                          |
|   |                     | Migrants from abroad (%)                | 0                            | 1                             | 0.79                          | 0.24                         | 0.38                          |
|   | Food insecurity     | Agricultural land (persons per hectare) | 0.55                         | 0.85                          | 0.62                          | 0                            | 1                             |
|   |                     | Land owned (no %)                       | 1                            | 0                             | 0.31                          | 0.47                         | 0.75                          |
| <b>TOTAL</b>  |                     |   | <b>3.56</b><br><b>(0.51)</b> | <b>4.36</b><br><b>(0.62)</b>  | <b>3.93</b><br><b>(0.56)</b>  | <b>0.71</b><br><b>(0.10)</b> | <b>4.36</b><br><b>(0.62)</b>  |
| <b>CHRONIC POVERTY AND VULNERABILITY TOTAL AND MEAN</b> |                     |   | <b>7.95</b><br><b>(0.25)</b> | <b>26.13</b><br><b>(0.82)</b> | <b>15.25</b><br><b>(0.48)</b> | <b>5.47</b><br><b>(0.17)</b> | <b>14.50</b><br><b>(0.45)</b> |

**Figure 5.7 Chronic poverty composite index dimensions (%) by zone**



**Figure 5.8 Chronic poverty, vulnerability and food insecurity and total composite index (%) by zone**



**Table 5.16: UNICEF Zero-to-one scoring transformations used to derive the zonal composite indices (0 = best, 1 = worst zone)**

| CHRONIC POVERTY                                | Dimension           | Indicator                             | Mid-West                     |                               |                              | Far-West                     |                              |
|--|---------------------|---------------------------------------|------------------------------|-------------------------------|------------------------------|------------------------------|------------------------------|
|  |                     |                                       | Bheri                        | Karnali                       | Rapti                        | Mahakali                     | Seti                         |
|  | Severity            | Wealth quintile – poorest 2 (%)       | 0                            | 1.0                           | .39                          | .10                          | .66                          |
|  |                     | Adult illiteracy rate (%)             | .02                          | .79                           | .74                          | 0                            | 1.0                          |
|  | Health              | Child immunisation – no (%)           | .80                          | .5                            | 0                            | 1.0                          | .41                          |
|  | Standard of living  | Electricity - no (%)                  | 0                            | 1.0                           | .09                          | .20                          | .66                          |
|  |                     | Drinking water not MDG (%)            | 0                            | .48                           | 1.0                          | .17                          | .80                          |
|  |                     | Sanitation not MDG (%)                | .07                          | .49                           | 0                            | .32                          | 1.0                          |
|  |                     | Floor construction - poor (%)         | 0                            | 1.0                           | .65                          | .40                          | .60                          |
|  |                     | Wall construction - poor (%)          | .75                          | 0                             | .43                          | .33                          | 1.0                          |
|  |                     | Roof construction - poor (%)          | .30                          | 1.0                           | .67                          | 0                            | .18                          |
|  |                     | Cooking - poor (%)                    | 0                            | 1.0                           | .49                          | .68                          | .67                          |
|  |                     | Assets – none (%)                     | 0                            | 1.0                           | .07                          | .18                          | .36                          |
|  | Women's empowerment | Literacy status female (% illiterate) | 0                            | 1.0                           | .03                          | .18                          | .63                          |
|  |                     | Female headed (%)                     | .77                          | 0                             | 1.0                          | .63                          | .72                          |
| <b>VULNERABILITY</b>                           | Risks               | Caste (Dalits, %)                     | .41                          | 1.0                           | .56                          | 0                            | .43                          |
|  |                     | Rural (%)                             | 0                            | 1.0                           | .5                           | .35                          | .56                          |
|  |                     | Land owned (no %)                     | 1.0                          | 0                             | .17                          | .01                          | .22                          |
| <b>TOTAL CHRONIC POVERTY AND VULNERABILITY</b> |                     |                                       | <b>4.12</b><br><b>(0.26)</b> | <b>11.26</b><br><b>(0.70)</b> | <b>6.79</b><br><b>(0.42)</b> | <b>4.55</b><br><b>(0.28)</b> | <b>9.90</b><br><b>(0.62)</b> |

**Table 5.17: Mean Overall Poverty Gap Index (PGI) by zone**

| Region   | Overall PGI | p      | Post-hoc differences between regions |        |          |        |
|----------|-------------|--------|--------------------------------------|--------|----------|--------|
|          |             |        | Karnali                              | Rapti  | Mahakali | Seti   |
| Bheri    | 5.86        | <0.001 | <0.001                               | ns     | ns       | 0.01   |
| Karnali  | 15.09       |        |                                      | <0.001 | <0.001   | <0.001 |
| Rapti    | 4.87        |        |                                      |        | ns       | 0.001  |
| Mahakali | 6.98        |        |                                      |        |          | ns     |
| Seti     | 9.28        |        |                                      |        |          |        |

**Table 5.18: Mean Food Poverty Gap Index (PGI) by zone**

| Region   | Food PGI | p      | Post-hoc differences between regions |       |          |      |
|----------|----------|--------|--------------------------------------|-------|----------|------|
|          |          |        | Karnali                              | Rapti | Mahakali | Seti |
| Bheri    | 5.96     | <0.001 | 0.038                                | ns    | ns       | ns   |
| Karnali  | 11.42    |        |                                      | 0.037 | ns       | ns   |
| Rapti    | 5.86     |        |                                      |       | ns       | ns   |
| Mahakali | 7.19     |        |                                      |       |          | ns   |
| Seti     | 8.23     |        |                                      |       |          |      |

**Table 5.19: Mean Non-Food Poverty Gap Index (PGI) by zone**

| Region   | Non-Food PGI | p      | Post-hoc differences between regions |        |          |        |
|----------|--------------|--------|--------------------------------------|--------|----------|--------|
|          |              |        | Karnali                              | Rapti  | Mahakali | Seti   |
| Bheri    | 12.00        | <0.001 | <0.001                               | ns     | ns       | 0.017  |
| Karnali  | 32.77        |        |                                      | <0.001 | <0.001   | <0.001 |
| Rapti    | 11.34        |        |                                      |        | ns       | 0.007  |
| Mahakali | 14.44        |        |                                      |        |          | ns     |
| Seti     | 17.06        |        |                                      |        |          |        |

**Table 5.20: Overall Squared Poverty Gap Index (SPGI) by zone**

| Region   | Overall SPGI | p      | Post-hoc differences between regions |        |          |       |
|----------|--------------|--------|--------------------------------------|--------|----------|-------|
|          |              |        | Karnali                              | Rapti  | Mahakali | Seti  |
| Bheri    | 2.10         | <0.001 | <0.001                               | ns     | ns       | ns    |
| Karnali  | 5.94         |        |                                      | <0.001 | <0.001   | 0.015 |
| Rapti    | 1.36         |        |                                      |        | ns       | 0.003 |
| Mahakali | 2.34         |        |                                      |        |          | ns    |
| Seti     | 3.16         |        |                                      |        |          |       |

**Table 5.21: Food Squared Poverty Gap Index (SPGI) by zone**

| Region   | Food SPGI | p      | Post-hoc differences between regions |       |          |      |
|----------|-----------|--------|--------------------------------------|-------|----------|------|
|          |           |        | Karnali                              | Rapti | Mahakali | Seti |
| Bheri    | 2.09      | <0.001 | ns                                   | ns    | ns       | ns   |
| Karnali  | 3.88      |        |                                      | ns    | ns       | ns   |
| Rapti    | 1.79      |        |                                      |       | ns       | ns   |
| Mahakali | 2.62      |        |                                      |       |          | ns   |
| Seti     | 2.71      |        |                                      |       |          |      |

**Table 5.22: Non-Food Squared Poverty Gap Index (SPGI) by zone**

| Region   | Non-Food SPGI | p      | Post-hoc differences between regions |        |          |        |
|----------|---------------|--------|--------------------------------------|--------|----------|--------|
|          |               |        | Karnali                              | Rapti  | Mahakali | Seti   |
| Bheri    | 4.25          | <0.001 | <0.001                               | ns     | ns       | 0.036  |
| Karnali  | 12.74         |        |                                      | <0.001 | <0.001   | <0.001 |
| Rapti    | 3.79          |        |                                      |        | ns       | 0.013  |
| Mahakali | 4.70          |        |                                      |        |          | ns     |
| Seti     | 6.66          |        |                                      |        |          |        |

**Table 5.23: Variation in UNICEF indicators by district**

| Dimension                  | Indicator                             | Aacham | Baitadi | Bajhang | Bajura | Banke | Bardiya | Dandeldhura | Dailekh | Dang | Darchula | Dolpa | Doti |
|----------------------------|---------------------------------------|--------|---------|---------|--------|-------|---------|-------------|---------|------|----------|-------|------|
| <b>Severity</b>            | Wealth quintile – poorest (%)         | 65.7   | 23.4    | 43.4    | 63.4   | 1.6   | 1.2     | 10.9        | 22.8    | 11.5 | 25.9     | 41.4  | 39.3 |
|                            | Adult illiteracy rate (%)             | 57.7   | 47.8    | 51.4    | 65.1   | 42.8  | 49.0    | 45.7        | 47.2    | 51.2 | 43.9     | 48.5  | 66.7 |
| <b>Health</b>              | Child immunisation – no (%)           | 3.9    | 4.2     | 8.5     | 4.5    | 12.2  | 24.3    | 22.7        | 11.7    | 5.0  | 13.3     | 4.9   | 17.1 |
| <b>Standard of living</b>  | Electricity - no (%)                  | 88.3   | 52.8    | 53.5    | 83.5   | 23.8  | 24.5    | 32.6        | 45.7    | 34.7 | 57.8     | 74.7  | 61.0 |
|                            | Drinking water not MDG (%)            | 32.7   | 12.7    | 39.3    | 26.8   | 4.4   | 0       | 26.9        | 13.2    | 27.5 | 19.0     | 10.1  | 26.2 |
|                            | Sanitation not MDG (%)                | 86.7   | 45.2    | 83.5    | 93.3   | 54.7  | 73.1    | 45.7        | 62.9    | 41.4 | 84.0     | 63.6  | 66.7 |
|                            | Floor construction - poor (%)         | 100.0  | 88.3    | 97.9    | 99.6   | 54.1  | 84.9    | 93.1        | 96.4    | 86.6 | 94.9     | 100.0 | 98.9 |
|                            | Wall construction - poor (%)          | 18.1   | 0.3     | 26.2    | 39.4   | 30.9  | 52.0    | 29.7        | 28.4    | 46.3 | 10.9     | 9.1   | 9.0  |
|                            | Roof construction - poor (%)          | 16.5   | 0       | 12.3    | 32.0   | 20.3  | 25.7    | 12.0        | 29.9    | 33.5 | 1.7      | 61.6  | 7.1  |
|                            | Cooking - poor (%)                    | 99.6   | 98.0    | 100.0   | 100.0  | 68.1  | 93.5    | 100.0       | 98.0    | 86.1 | 99.0     | 100.0 | 98.5 |
|                            | Assets – none (%)                     | 45.6   | 25.8    | 33.4    | 48.2   | 9.7   | 5.7     | 30.3        | 27.4    | 16.5 | 31.6     | 50.5  | 36.3 |
| <b>Women's empowerment</b> | Literacy status female (% illiterate) | 76.9   | 54.7    | 82.5    | 83.5   | 50.6  | 62.6    | 68.3        | 53.2    | 49.4 | 51.1     | 84.8  | 73.7 |
|                            | Female headed (%)                     | 25.0   | 29.8    | 8.7     | 16.5   | 19.7  | 20.4    | 21.7        | 15.2    | 26.3 | 15.3     | 18.2  | 43.8 |
| <b>Risks</b>               | Caste (Dalits, %)                     | 34.7   | 15.1    | 10.8    | 11.3   | 16.9  | 7.8     | 10.3        | 15.3    | 12.0 | 2.4      | 18.2  | 15.7 |
|                            | Rural (%)                             | 100.0  | 75.0    | 100.0   | 100.0  | 61.5  | 70.0    | 57.1        | 50.0    | 58.8 | 100.0    | 100.0 | 63.6 |
|                            | Land owned (no %)                     | 4.8    | 5.0     | 3.6     | 3.9    | 28.1  | 27.3    | 9.7         | 7.1     | 11.5 | 3.7      | 4.0   | 10.5 |

**Table 5.23: Variation in UNICEF indicators by district (continued)**

| Dimension                  | Indicator                             | Humla | Jajarkot | Jumla | Kailali | Kalikot | Kanchanpur | Mugu  | Pyuthan | Rolpa | Rukum | Salyan | Surket |
|----------------------------|---------------------------------------|-------|----------|-------|---------|---------|------------|-------|---------|-------|-------|--------|--------|
| <b>Severity</b>            | Wealth quintile – poorest 2 (%)       | 52.8  | 52.0     | 38.0  | 2.6     | 54.9    | 0.3        | 47.0  | 21.6    | 38.4  | 26.3  | 21.1   | 8.5    |
|                            | Adult illiteracy rate (%)             | 56.8  | 50.7     | 50.0  | 43.5    | 55.6    | 37.2       | 49.0  | 53.6    | 57.6  | 38.4  | 52.6   | 33.8   |
| <b>Health</b>              | Child immunisation – no (%)           | 0.8   | 16.9     | 11.0  | 6.7     | 2.3     | 18.4       | 15.9  | 6.8     | 0     | 4.9   | 0      | 2.4    |
| <b>Standard of living</b>  | Electricity - no (%)                  | 72.8  | 100.0    | 60.6  | 30.6    | 67.6    | 17.9       | 80.5  | 33.6    | 30.4  | 49.5  | 36.8   | 22.4   |
|                            | Drinking water not MDG (%)            | 32.8  | 8.0      | 25.0  | 0.5     | 4.6     | 0.3        | 31.5  | 10.4    | 28.8  | 27.3  | 16.8   | 24.6   |
|                            | Sanitation not MDG (%)                | 87.2  | 56.0     | 62.3  | 62.6    | 62.7    | 65.0       | 77.9  | 44.8    | 87.2  | 71.7  | 70.5   | 39.7   |
|                            | Floor construction - poor (%)         | 98.4  | 100.0    | 99.0  | 70.5    | 100.0   | 67.2       | 96.0  | 89.6    | 100.0 | 100.0 | 86.3   | 61.8   |
|                            | Wall construction - poor (%)          | 15.2  | 0        | 49.3  | 51.0    | 0.3     | 47.9       | 0.7   | 12.8    | 0     | 0     | 1.1    | 15.8   |
|                            | Roof construction - poor (%)          | 35.2  | 0        | 46.9  | 11.9    | 46.0    | 12.4       | 92.6  | 16.8    | 64.8  | 40.4  | 63.2   | 18.4   |
|                            | Cooking - poor (%)                    | 100.0 | 100.0    | 99.7  | 84.0    | 100.0   | 85.1       | 100.0 | 91.2    | 100.0 | 99.0  | 91.6   | 73.5   |
|                            | Assets – none (%)                     | 59.2  | 37.3     | 49.0  | 8.5     | 57.7    | 9.4        | 49.7  | 20.0    | 29.6  | 17.2  | 12.6   | 18.4   |
| <b>Women's empowerment</b> | Literacy status female (% illiterate) | 84.5  | 62.0     | 82.5  | 47.9    | 80.7    | 50.5       | 87.9  | 48.1    | 62.0  | 43.5  | 40.5   | 24.6   |
|                            | Female headed (%)                     | 8.0   | 9.3      | 8.2   | 17.4    | 5.2     | 11.3       | 4.0   | 24.8    | 20.8  | 15.2  | 37.9   | 31.3   |
| <b>Risks</b>               | Caste (Dalits, %)                     | 5.6   | 16.0     | 15.4  | 7.7     | 31.8    | 4.2        | 17.4  | 17.7    | 20.8  | 14.1  | 25.3   | 12.9   |
|                            | Rural (%)                             | 100.0 | 100.0    | 100.0 | 64.0    | 100.0   | 60.0       | 100.0 | 100.0   | 100.0 | 100.0 | 100.0  | 45.5   |
|                            | Land owned (no %)                     | 3.2   | 0        | 6.8   | 10.5    | 1.5     | 6.6        | 2.0   | 3.2     | 0.8   | 2.0   | 4.2    | 26.1   |

**Table 5.24: UNICEF indicators ranked by zone (1 = best and 5 = worst rank)**

| Dimension                                      | Indicator                             | Aacham                  | Baitadi                | Bajhang                 | Bajura                  | Banke                  | Bardiya                 | Dandeldhura             | Dailekh                 | Dang                    | Darchula                | Dolpa                   | Doti                    |
|--|---------------------------------------|-------------------------|------------------------|-------------------------|-------------------------|------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>Severity</b>                                | Wealth quintile – poorest (%)         | 24.0                    | 11.0                   | 18.0                    | 23.0                    | 3.0                    | 2.0                     | 6.0                     | 10.0                    | 7.0                     | 12.0                    | 17.0                    | 16.0                    |
|  | Adult illiteracy rate (%)             | 22.0                    | 9.0                    | 16.0                    | 23.0                    | 4.0                    | 11.5                    | 7.0                     | 8.0                     | 15.0                    | 6.0                     | 10.0                    | 24.0                    |
| <b>Health</b>                                  | Child immunisation – no (%)           | 6.0                     | 7.0                    | 14.0                    | 8.0                     | 17.0                   | 24.0                    | 23.0                    | 16.0                    | 11.0                    | 18.0                    | 9.5                     | 21.0                    |
| <b>Standard of living</b>                      | Electricity - no (%)                  | 23.0                    | 13.0                   | 14.0                    | 22.0                    | 3.0                    | 4.0                     | 7.0                     | 11.0                    | 9.0                     | 15.0                    | 20.0                    | 17.0                    |
|  | Drinking water not MDG (%)            | 22.0                    | 9.0                    | 24.0                    | 16.0                    | 4.0                    | 1.0                     | 17.0                    | 10.0                    | 19.0                    | 12.0                    | 7.0                     | 15.0                    |
|  | Sanitation not MDG (%)                | 21.0                    | 4.0                    | 19.0                    | 24.0                    | 6.0                    | 17.0                    | 5.0                     | 11.0                    | 2.0                     | 20.0                    | 12.0                    | 14.0                    |
|  | Floor construction - poor (%)         | 21.5                    | 8.0                    | 14.0                    | 18.0                    | 1.0                    | 5.0                     | 10.0                    | 13.0                    | 7.0                     | 11.0                    | 21.5                    | 16.0                    |
|  | Wall construction - poor (%)          | 14.0                    | 4.5                    | 15.0                    | 19.0                    | 18.0                   | 24.0                    | 17.0                    | 16.0                    | 20.0                    | 10.0                    | 9.0                     | 8.0                     |
|  | Roof construction - poor (%)          | 9.0                     | 1.5                    | 7.0                     | 15.0                    | 12.0                   | 13.0                    | 6.0                     | 14.0                    | 16.0                    | 3.0                     | 21.0                    | 4.0                     |
|  | Cooking - poor (%)                    | 14.0                    | 9.5                    | 20.0                    | 20.0                    | 1.0                    | 8.0                     | 20.0                    | 9.5                     | 5.0                     | 12.5                    | 20.0                    | 11.0                    |
|  | Assets – none (%)                     | 18.0                    | 10.0                   | 15.0                    | 19.0                    | 4.0                    | 1.0                     | 13.0                    | 11.0                    | 6.0                     | 14.0                    | 22.0                    | 16.0                    |
| <b>Women's empowerment</b>                     | Literacy status female (% illiterate) | 17.0                    | 11.0                   | 19.5                    | 21.0                    | 8.0                    | 14.0                    | 15.0                    | 10.0                    | 6.0                     | 9.0                     | 23.0                    | 16.0                    |
|  | Female headed (%)                     | 19.0                    | 21.0                   | 5.0                     | 11.0                    | 14.0                   | 15.0                    | 17.0                    | 8.5                     | 20.0                    | 10.0                    | 13.0                    | 24.0                    |
| <b>Risks</b>                                   | Caste (Dalits, %)                     | 24.0                    | 12.0                   | 7.0                     | 8.0                     | 17.0                   | 5.0                     | 6.0                     | 13.0                    | 9.0                     | 1.0                     | 20.0                    | 15.0                    |
|  | Rural (%)                             | 17.5                    | 10.0                   | 17.5                    | 17.5                    | 6.0                    | 9.0                     | 3.0                     | 2.0                     | 4.0                     | 17.5                    | 17.5                    | 7.0                     |
|  | Land owned (no %)                     | 13.0                    | 14.0                   | 8.0                     | 10.0                    | 24.0                   | 23.0                    | 18.0                    | 17.0                    | 21.0                    | 9.0                     | 11.0                    | 19.5                    |
| <b>TOTAL CHRONIC POVERTY AND VULNERABILITY</b> |                                       | <b>285.0<br/>(17.8)</b> | <b>154.5<br/>(9.7)</b> | <b>233.0<br/>(14.6)</b> | <b>274.5<br/>(17.2)</b> | <b>142.0<br/>(8.9)</b> | <b>176.5<br/>(11.0)</b> | <b>190.0<br/>(11.9)</b> | <b>180.0<br/>(11.3)</b> | <b>177.0<br/>(11.1)</b> | <b>180.0<br/>(11.3)</b> | <b>253.5<br/>(15.8)</b> | <b>243.5<br/>(15.2)</b> |

**Table 5.24: UNICEF indicators ranked by zone (1 = best and 5 = worst rank) (continued)**

| <b>Dimension</b>                               | <b>Indicator</b>                      | <b>Humla</b>            | <b>Jajarkot</b>         | <b>Jumla</b>            | <b>Kailali</b>         | <b>Kalikot</b>          | <b>Kanchanpur</b>      | <b>Mugu</b>             | <b>Pyuthan</b>          | <b>Rolpa</b>            | <b>Rukum</b>            | <b>Salyan</b>           | <b>Surket</b>          |
|--|---------------------------------------|-------------------------|-------------------------|-------------------------|------------------------|-------------------------|------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|------------------------|
| <b>Severity</b>                                | Wealth quintile – poorest 2 (%)       | 21.0                    | 20.0                    | 14.0                    | 4.0                    | 22.0                    | 1.0                    | 19.0                    | 9.0                     | 15.0                    | 13.0                    | 8.0                     | 5.0                    |
|  | Adult illiteracy rate (%)             | 20.0                    | 14.0                    | 13.0                    | 5.0                    | 19.0                    | 2.0                    | 11.5                    | 18.0                    | 21.0                    | 3.0                     | 17.0                    | 1.0                    |
| <b>Health</b>                                  | Child immunisation – no (%)           | 3.0                     | 20.0                    | 15.0                    | 12.0                   | 4.0                     | 22.0                   | 19.0                    | 13.0                    | 1.5                     | 9.5                     | 1.5                     | 5.0                    |
| <b>Standard of living</b>                      | Electricity - no (%)                  | 19.0                    | 24.0                    | 16.0                    | 6.0                    | 18.0                    | 1.0                    | 21.0                    | 8.0                     | 5.0                     | 12.0                    | 10.0                    | 2.0                    |
|  | Drinking water not MDG (%)            | 23.0                    | 6.0                     | 14.0                    | 3.0                    | 5.0                     | 2.0                    | 21.0                    | 8.0                     | 20.0                    | 18.0                    | 11.0                    | 13.0                   |
|  | Sanitation not MDG (%)                | 22.5                    | 7.0                     | 8.0                     | 9.0                    | 10.0                    | 13.0                   | 18.0                    | 3.0                     | 22.5                    | 16.0                    | 15.0                    | 1.0                    |
|  | Floor construction - poor (%)         | 15.0                    | 21.5                    | 17.0                    | 4.0                    | 21.5                    | 3.0                    | 12.0                    | 9.0                     | 21.5                    | 21.5                    | 6.0                     | 2.0                    |
|  | Wall construction - poor (%)          | 12.0                    | 2.0                     | 22.0                    | 23.0                   | 4.5                     | 21.0                   | 6.0                     | 11.0                    | 2.0                     | 2.0                     | 7.0                     | 13.0                   |
|  | Roof construction - poor (%)          | 17.0                    | 1.5                     | 20.0                    | 5.0                    | 19.0                    | 8.0                    | 24.0                    | 10.0                    | 23.0                    | 18.0                    | 22.0                    | 11.0                   |
|  | Cooking - poor (%)                    | 20.0                    | 20.0                    | 15.0                    | 3.0                    | 20.0                    | 4.0                    | 20.0                    | 6.0                     | 20.0                    | 12.5                    | 7.0                     | 2.0                    |
|  | Assets – none (%)                     | 24.0                    | 17.0                    | 20.0                    | 2.0                    | 23.0                    | 3.0                    | 21.0                    | 9.0                     | 12.0                    | 7.0                     | 5.0                     | 8.0                    |
| <b>Women's empowerment</b>                     | Literacy status female (% illiterate) | 22.0                    | 12.5                    | 19.5                    | 4.0                    | 18.0                    | 7.0                    | 24.0                    | 5.0                     | 12.5                    | 3.0                     | 2.0                     | 1.0                    |
|  | Female headed (%)                     | 3.0                     | 6.0                     | 4.0                     | 12.0                   | 2.0                     | 7.0                    | 1.0                     | 18.0                    | 16.0                    | 8.5                     | 23.0                    | 22.0                   |
| <b>Risks</b>                                   | Caste (Dalits, %)                     | 3.0                     | 16.0                    | 14.0                    | 4.0                    | 23.0                    | 2.0                    | 18.0                    | 19.0                    | 21.0                    | 11.0                    | 22.0                    | 10.0                   |
|  | Rural (%)                             | 17.5                    | 17.5                    | 17.5                    | 8.0                    | 17.5                    | 5.0                    | 17.5                    | 17.5                    | 17.5                    | 17.5                    | 17.5                    | 1.0                    |
|  | Land owned (no %)                     | 6.5                     | 1.0                     | 16.0                    | 19.5                   | 3.0                     | 15.0                   | 4.5                     | 6.5                     | 2.0                     | 4.5                     | 12.0                    | 22.0                   |
| <b>TOTAL CHRONIC POVERTY AND VULNERABILITY</b> |                                       | <b>248.5<br/>(15.5)</b> | <b>206.0<br/>(12.9)</b> | <b>245.0<br/>(15.3)</b> | <b>123.5<br/>(7.7)</b> | <b>229.5<br/>(14.3)</b> | <b>116.0<br/>(7.3)</b> | <b>257.5<br/>(16.1)</b> | <b>170.0<br/>(10.6)</b> | <b>232.5<br/>(14.5)</b> | <b>177.0<br/>(11.1)</b> | <b>186.0<br/>(11.6)</b> | <b>119.0<br/>(7.4)</b> |

**Table 5.25 Total Rank by District and overall position (1 = best, 24= worst district)**

| District    | Zone     | Total |
|-------------|----------|-------|
| Aachem      | Seti     | 24    |
| Baitadi     | Mahakali | 5     |
| Bajhang     | Seti     | 17    |
| Bajura      | Seti     | 23    |
| Banke       | Bheri    | 4     |
| Bardiya     | Bheri    | 7     |
| Dandeldhura | Mahakali | 13    |
| Dailekh     | Bheri    | 10.5  |
| Dang        | Rapti    | 8.5   |
| Darchula    | Mahakali | 10.5  |
| Dolpa       | Karnali  | 21    |
| Doti        | Seti     | 18    |
| Humla       | Karnali  | 20    |
| Jajarkot    | Bheri    | 14    |
| Jumla       | Karnali  | 19    |
| Kailali     | Seti     | 3     |
| Kalikot     | Karnali  | 15    |
| Kanchanpur  | Mahakali | 1     |
| Mugu        | Karnali  | 22    |
| Pyuthan     | Rapti    | 6     |
| Rolpa       | Rapti    | 16    |
| Rukum       | Rapti    | 8.5   |
| Salyan      | Rapti    | 12    |
| Surket      | Bheri    | 2     |

**Table 5.26: UNICEF Zero-to-one scoring transformations used to derive the district composite indices (0 = best, 1 = worst zone)**

| <b>Dimension</b>                               | <b>Indicator</b>                      | <b>Aacham</b>           | <b>Baitadi</b>         | <b>Bajhang</b>         | <b>Bajura</b>           | <b>Banke</b>           | <b>Bardiya</b>         | <b>Dandeldhura</b>     | <b>Dailekh</b>         | <b>Dang</b>            | <b>Darchula</b>        | <b>Dolpa</b>           | <b>Doti</b>            |
|--|---------------------------------------|-------------------------|------------------------|------------------------|-------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| <b>Severity</b>                                | Wealth quintile – poorest (%)         | 1.00                    | .35                    | .66                    | .96                     | .02                    | .01                    | .16                    | .34                    | .17                    | .39                    | .63                    | .60                    |
|  | Adult illiteracy rate (%)             | .73                     | .43                    | .53                    | .95                     | .27                    | .46                    | .36                    | .41                    | .53                    | .31                    | .45                    | 1.00                   |
| <b>Health</b>                                  | Child immunisation – no (%)           | .16                     | .17                    | .35                    | .19                     | .50                    | 1.00                   | .93                    | .48                    | .21                    | .55                    | .20                    | .70                    |
| <b>Standard of living</b>                      | Electricity - no (%)                  | .86                     | .43                    | .43                    | .80                     | .07                    | .08                    | .18                    | .34                    | .20                    | .49                    | .69                    | .52                    |
|  | Drinking water not MDG (%)            | .83                     | .32                    | 1.00                   | .68                     | .11                    | .00                    | .68                    | .34                    | .70                    | .48                    | .26                    | .67                    |
|  | Sanitation not MDG (%)                | .88                     | .10                    | .82                    | 1.00                    | .28                    | .62                    | .11                    | .43                    | .03                    | .83                    | .45                    | .50                    |
|  | Floor construction - poor (%)         | 1.00                    | .75                    | .95                    | .99                     | .0                     | .67                    | .85                    | .92                    | .71                    | .89                    | 1.00                   | .98                    |
|  | Wall construction - poor (%)          | .35                     | .01                    | .50                    | .76                     | .59                    | 1.00                   | .57                    | .55                    | .89                    | .21                    | .17                    | .17                    |
|  | Roof construction - poor (%)          | .18                     | .00                    | .13                    | .35                     | .22                    | .28                    | .13                    | .32                    | .36                    | .02                    | .67                    | .08                    |
|  | Cooking - poor (%)                    | .99                     | .94                    | 1.00                   | 1.00                    | .0                     | .80                    | 1.00                   | .94                    | .56                    | .97                    | 1.00                   | .95                    |
|  | Assets – none (%)                     | .75                     | .38                    | .52                    | .79                     | .07                    | .0                     | .46                    | .41                    | .20                    | .48                    | .84                    | .57                    |
| <b>Women's empowerment</b>                     | Literacy status female (% illiterate) | .83                     | .48                    | .91                    | .93                     | .41                    | .60                    | .69                    | .45                    | .39                    | .42                    | .95                    | .78                    |
|  | Female headed (%)                     | .53                     | .65                    | .12                    | .31                     | .39                    | .41                    | .44                    | .28                    | .56                    | .28                    | .36                    | 1.00                   |
| <b>Risks</b>                                   | Caste (Dalits, %)                     | 1.00                    | .39                    | .26                    | .28                     | .45                    | .17                    | .24                    | .40                    | .30                    | .0                     | .49                    | .41                    |
|  | Rural (%)                             | 1.00                    | .54                    | 1.00                   | 1.00                    | .29                    | .45                    | .21                    | .08                    | .24                    | 1.00                   | 1.00                   | .33                    |
|  | Land owned (no %)                     | .17                     | .18                    | .13                    | .14                     | 1.00                   | .97                    | .35                    | .25                    | .41                    | .13                    | .14                    | .37                    |
| <b>TOTAL CHRONIC POVERTY AND VULNERABILITY</b> |                                       | <b>11.24<br/>(0.70)</b> | <b>6.10<br/>(0.38)</b> | <b>9.32<br/>(0.58)</b> | <b>11.13<br/>(0.70)</b> | <b>4.69<br/>(0.29)</b> | <b>7.52<br/>(0.47)</b> | <b>7.38<br/>(0.46)</b> | <b>6.94<br/>(0.43)</b> | <b>6.47<br/>(0.40)</b> | <b>7.45<br/>(0.47)</b> | <b>9.29<br/>(0.58)</b> | <b>9.64<br/>(0.60)</b> |

**Table 5.26: UNICEF Zero-to-one scoring transformations used to derive the district composite indices (0 = best, 1 = worst zone)  
(continued)**

| <b>Dimension</b>                               | <b>Indicator</b>                      | <b>Humla</b>           | <b>Jajarkot</b>        | <b>Jumla</b>            | <b>Kailali</b>         | <b>Kalikot</b>         | <b>Kanchanpur</b>      | <b>Mugu</b>             | <b>Pyuthan</b>         | <b>Rolpa</b>           | <b>Rukum</b>           | <b>Salyan</b>          | <b>Surket</b>          |
|--|---------------------------------------|------------------------|------------------------|-------------------------|------------------------|------------------------|------------------------|-------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| <b>Severity</b>                                | Wealth quintile – poorest 2 (%)       | .80                    | .79                    | .58                     | .04                    | .83                    | .0                     | .71                     | .33                    | .58                    | .40                    | .32                    | .13                    |
|  | Adult illiteracy rate (%)             | .70                    | .51                    | .49                     | .29                    | .66                    | .10                    | .46                     | .60                    | .72                    | .14                    | .57                    | .0                     |
| <b>Health</b>                                  | Child immunisation – no (%)           | .03                    | .70                    | .45                     | .28                    | .09                    | .76                    | .65                     | .28                    | .00                    | .20                    | .00                    | .10                    |
| <b>Standard of living</b>                      | Electricity - no (%)                  | .67                    | 1.00                   | .52                     | .15                    | .61                    | .0                     | .76                     | .19                    | .15                    | .38                    | .23                    | .05                    |
|  | Drinking water not MDG (%)            | .83                    | .20                    | .64                     | .01                    | .12                    | .01                    | .80                     | .26                    | .73                    | .69                    | .43                    | .63                    |
|  | Sanitation not MDG (%)                | .89                    | .30                    | .42                     | .43                    | .43                    | .47                    | .71                     | .10                    | .89                    | .60                    | .57                    | .0                     |
|  | Floor construction - poor (%)         | .97                    | 1.00                   | .98                     | .36                    | 1.00                   | .29                    | .91                     | .77                    | 1.00                   | 1.00                   | .70                    | .17                    |
|  | Wall construction - poor (%)          | .29                    | .00                    | .95                     | .98                    | .01                    | .92                    | .01                     | .25                    | .00                    | .00                    | .02                    | .30                    |
|  | Roof construction - poor (%)          | .38                    | .00                    | .51                     | .13                    | .50                    | .13                    | 1.00                    | .18                    | .70                    | .44                    | .68                    | .20                    |
|  | Cooking - poor (%)                    | 1.00                   | 1.00                   | .99                     | .50                    | 1.00                   | .53                    | 1.00                    | .72                    | 1.00                   | .97                    | .74                    | .17                    |
|  | Assets – none (%)                     | 1.00                   | .59                    | .81                     | .05                    | .97                    | .07                    | .82                     | .27                    | .45                    | .21                    | .13                    | .24                    |
| <b>Women's empowerment</b>                     | Literacy status female (% illiterate) | .95                    | .59                    | .91                     | .37                    | .89                    | .41                    | 1.00                    | .37                    | .59                    | .30                    | .25                    | .0                     |
|  | Female headed (%)                     | .10                    | .13                    | .11                     | .34                    | .03                    | .18                    | .0                      | .52                    | .42                    | .28                    | .85                    | .69                    |
| <b>Risks</b>                                   | Caste (Dalits, %)                     | .10                    | .42                    | .40                     | .16                    | .91                    | .06                    | .46                     | .47                    | .57                    | .36                    | .71                    | .33                    |
|  | Rural (%)                             | 1.00                   | 1.00                   | 1.00                    | .34                    | 1.00                   | .27                    | 1.00                    | 1.00                   | 1.00                   | 1.00                   | 1.00                   | .0                     |
|  | Land owned (no %)                     | .11                    | .00                    | .24                     | .37                    | .05                    | .23                    | .07                     | .11                    | .03                    | .07                    | .15                    | .93                    |
| <b>TOTAL CHRONIC POVERTY AND VULNERABILITY</b> |                                       | <b>9.82<br/>(0.61)</b> | <b>8.24<br/>(0.52)</b> | <b>10.00<br/>(0.62)</b> | <b>4.80<br/>(0.30)</b> | <b>9.10<br/>(0.57)</b> | <b>4.43<br/>(0.28)</b> | <b>10.39<br/>(0.65)</b> | <b>6.43<br/>(0.40)</b> | <b>8.83<br/>(0.55)</b> | <b>7.05<br/>(0.44)</b> | <b>7.35<br/>(0.46)</b> | <b>3.92<br/>(0.25)</b> |

**Table 5.27 Total Composite score by District and overall position (1 = best, 24= worst district)**

| District    | Zone     | Total |
|-------------|----------|-------|
| Aachem      | Seti     | 24    |
| Baitadi     | Mahakali | 5     |
| Bajhang     | Seti     | 18    |
| Bajura      | Seti     | 23    |
| Banke       | Bheri    | 3     |
| Bardiya     | Bheri    | 13    |
| Dandeldhura | Mahakali | 11    |
| Dailekh     | Bheri    | 8     |
| Dang        | Rapti    | 7     |
| Darchula    | Mahakali | 12    |
| Dolpa       | Karnali  | 17    |
| Doti        | Seti     | 20    |
| Humla       | Karnali  | 19    |
| Jajarkot    | Bheri    | 14    |
| Jumla       | Karnali  | 21    |
| Kailali     | Seti     | 4     |
| Kalikot     | Karnali  | 16    |
| Kanchanpur  | Mahakali | 2     |
| Mugu        | Karnali  | 22    |
| Pyuthan     | Rapti    | 6     |
| Rolpa       | Rapti    | 15    |
| Rukum       | Rapti    | 9     |
| Salyan      | Rapti    | 10    |
| Surket      | Bheri    | 5     |

## Report 6 – Trends in chronic poverty and vulnerability: a comparison of NLSS II and III

### 6.1 Introduction

The analyses presented here examine the trends in two ways (a) comparison of NLSS II and III cross-sectional surveys and (b) the same households studied in NLSS II and III (panel survey). Households were classified as total (overall) poor if their expenditure fell below the Government of Nepal poverty line. In addition two other poverty lines were constructed, the food poverty line and the non-food poverty line and households were independently classified as poor or non-poor in relation to these two additional poverty lines. The extent and inequality of poverty (poverty gap index and squared poverty gap index, respectively) were computed for total poor, food poor only and non-food poor only.

### 6.2 Results

#### 6.2.1 Cross-sectional changes in total poor, food poor and non-food poor, PGI and SPGI between NLSS II and NLSS III

Table 6.1 presents information on the percentages of households classified as total poor, food poor and non-food poor in the two surveys. There was a very significant fall in the total poor between NLSS II and III surveys from 23.2% to 18.5%, a net fall of 4.7% (relative fall of 20.3%), food poor fell by 7.3% (relative fall of 29.1%), but non-food poor only fell by 2.2% (relative fall of 7.4%). However the percentage of households who were total poor and non-food poor increased significantly in the Far-West region by 5.1% and 11.1%, respectively..

Table 6.2 shows the changes in mean PGIs and SPGIs by region as well as for all households. Overall all three mean PGIs and SPGIs fell significantly between NLSS II and NLSS III. However in the Far-West the means in NLSS III were all higher than in NLSS II, significantly so for non-food PGI and SPGI.

#### 6.2.2 Relationship between chronic poverty and vulnerability indicators and total poor, food poor and non-food poor in NLSS II and NLSS III; cross-sectional analyses

A total of 23 chronic poverty and vulnerability indicators were identified which were common to both surveys (Table 6.3). As a large number of tests have been undertaken there is an increased risk of a Type I error (one in which the null hypothesis is incorrectly rejected). To overcome this type of error a Bonferroni correction was used in which the usual cut-off for significance ( $p=0.05$ ) has been lowered to take into account the number of tests undertaken. As 23 indicators were used the  $p$  value for a 'significant' result becomes  $0.05/23 = 0.0022$ .

There were significant differences between surveys for 18 of the 23 indicators (the non significant changes after Bonferroni correction were drinking water, sanitation, marital status, loans and region). In general there were improvements with a fall in the percentage of adults who were illiterate, reductions in child mortality and the time taken to reach a health centre, road post or market; the number of assets increased substantially as did the dependency ratio, and there was a marked shift to urban residency. Migration within Nepal and from abroad fell substantially between NLSS II and III.

There were also quite marked changes between surveys in the percentages that were poor, food poor and non-food poor in relation to the 23 indicators (Table 6.4). For most indicators there were significant falls between the two surveys, for example, the percentage who were poor and illiterate fell from 32.1% in NLSS II to 26.4% in NLSS III, food poor from 33.3% to 23.4%, respectively and non-food poor from 41.7% to 39.6%. The main indicator which increased between the two surveys was assets; food poor fell from 42.3% to 1.4% from 0 to 3+ assets, respectively in NLSS II while in NLSS III the percentage fell from 41.3% to 7.0%, respectively; for non-food poor 55.8% to 0.9%, respectively in NLSS II while in NLSS III the percentage fell from 60.0% to 10.2%, respectively.

Sequential binary logistic regressions were undertaken to test whether survey differences remained after removing the effects of the 23 chronic poverty indicators. The odds ratios for each indicator and survey are presented in Table 6.5. After Bonferroni correction there was no significant difference in odds ratios between surveys for total poor or food poor, but households in NLSS III were 1.78 times more likely to be non-food poor than households in NLSS II after removing the effects of the 23 indicators.

### **6.2.3 Relationship between chronic poverty and vulnerability indicators and food poor only, non-food poor only and both food and non-food poor in NLSS II and NLSS III; cross-sectional analyses**

In order to accommodate the different types of poverty a new index of food and non-food poverty has been created in which households have been classified as neither food or non-food poor, food poor only, non-food poor only, and both food and non-food poor. In NLSS II 61% of households were not poor increasing to 66.2% in NLSS III (Table 6.6); more households were non-food poor in NLSS III but more households in NLSS II were food poor only and both food and non-food poor.

Table 6.7 presents a breakdown of the percentages that are food poor only, non-food poor only and both food and non-food poor for the 23 indicators by survey. The percentages that are food poor only are generally the lowest in both surveys. In NLSS II the percentage of households that are non-food poor only was generally lower than the percentage that were both food and non-food poor while for NLSS III the association is in the opposite direction (higher percentage of non-food poor only). A multinomial logistic regression analysis was used to test whether there were significant differences between surveys in food poor only, non-food poor only and both food and non-food poor. Table 6.8 presents the odd ratios for each indicator as well as for survey. After removing the effects of the 23 indicators, NLSS II households were 1.26 times more likely to be food poor only, but 1.85 times less likely to be non-food poor and 1.56 times less likely to be both food and non-food poor compared with NLSS III households.

### **6.2.4 Relationship between chronic poverty and vulnerability indicators and Poverty Gap Indices in NLSS II and NLSS III; cross-sectional analyses**

The trends (means) in poverty gap indices in relation to each indicator are presented in Table 6.9. Analysis 1 presents the results of sequential multiple regression analyses which determine whether there was a significant effect of an indicator and also a significant interaction effect between the survey and the indicator. In these analyses one category of an indicator is the reference category (mean set to 0). Interaction effects are most easily

understood graphically. Figure 6.1 shows, for example, that the total PGI became smaller between surveys II and III for the two roof construction categories. If the lines had been parallel then there would have been no significant interaction effect. As the sample size is close to 10,000 only very significant interactions with an effect size greater than 0.1 have been considered. In analyses 2 the effects of all the other indicators were removed before testing for the specific indicator and the interaction effect between that indicator and survey.

In analysis 2 of the 23 indicators, 19 showed inconsistent trends (interaction effect) between surveys for total poverty gap index, 9 for food poverty gap index and all 23 indicators showed heterogeneity for non-food poverty gap index.

Figure 6.1 presents the interactions for the five most important indicators for total PGI (all figures are based on the results of analysis 2). For assets the total PGI worsened slightly for those with 2 or 3+ assets, much more for those with only 1 asset and was stable for those households with no assets. There was a gradation in mean PGI with the highest for those with no assets, down to 1 asset and followed by those with 2 and 3+ which had very similar means in both surveys. For caste Dalits, Advantaged Janajatis and Upper Caste mean PGIs worsened between the two surveys while the other three castes showed some improvement. The difference in mean total PGI between the two dependency ratio categories increased between surveys. There was a marked worsening in the total PGI for the Far-West and to a lesser extent Central and Western regions.

For food poor the two most significant interactions were with dependency ratio and region (Figure 6.2). There was a slight diminution of the food PGI between the surveys for dependency ratio. Far-West and Western food PGI means worsened between NLSS II and III while the other three regions showed a slight improvement.

For non-food poor PGI the mean difference between poor and good roof construction fell from 9 to 5 (Figure 6.3) between NLSS II and III. For assets, the means all worsened except for no assets between surveys. For caste the means of Dalits, Disadvantaged non-Dalits and Disadvantaged Janajatis worsened considerably between NLSS II and III and only the upper caste group showed a small improvement.

#### **6.2.5 Relationship between chronic poverty and vulnerability indicators and Squared Poverty Gap Indices in NLSS II and NLSS III; cross-sectional analyses**

The trends (means) in squared poverty gap indices in relation to each indicator are presented in Table 6.10 and analysis 1 and 2 are as described in the previous section. In analysis 2 of the 23 indicators, 16 showed inconsistent trends (interaction effect) between surveys for total squared poverty gap index, 8 for food squared poverty gap index and all 23 indicators showed heterogeneity for non-food squared poverty gap index.

Figure 6.4 shows that the difference in the total squared poverty gap index for roof construction fell by about 1 unit between the two surveys. The means for households with 1 to 3+ assets all worsened between NLSS II and NLSS III while for those with no assets there was a slight improvement. The difference between in dependency ratio fell slightly for both total and food squared poverty index (Figure 6.5).

For non-food, the difference between roof construction categories fell from about six to three (Figure 6.6). All four asset categories worsened especially for those with 1 asset. There was a reversal of the trend for the time to reach the road post between surveys. Five of the six caste groups worsened between NLSS II and NLSS III particularly the Dalits, Disadvantaged non-Dalits and Disadvantaged Janajatis, only the Upper Caste improved. The dependency ratio there was a slight worsening between the two surveys.

### **6.2.6 Panel survey NLSS II and NLSS III**

In total 435 households were studied in both NLSS II and III surveys and analyses have focussed on changes in total poor, food poor and non-food poor categories as well as PGI and SPGI. Given the small sample sizes it was not possible to analyse regional variation.

Table 6.11 presents the changes in overall (total) poor, food poor and non-food poor between the two surveys. In the total sample there was significant improvement as 9.3% became poor, while 13.3% moved from poor to non-poor so the net change was a reduction of total poor of 3.9%. Food poor showed a significant reduction of 6.2% while non-food poor worsened by 1.9%.

For PGI and SPGI paired analyses revealed little significant change between NLSS II and III (Table 6.12). The notable change was a significant fall in food PGI between NLSS II and III.

The panel survey data were also used to test whether there were any significant associations between change in poverty status (worse/better) and the indicators. In summary the significant findings were:-

- (a) For Total poor – there was a tendency to move from non-poor to poor if the household had been a non-migrant while a household was more likely to move from poor to non-poor if it had received remittances
- (b) For food poor – children more likely to be fully immunised if the household had moved from food poor to no longer food poor
- (c) For non-food poor – a household was more likely to move out of non-food poor if living in a rural area and if taken a loan.

### **6.2.7 Comparison of Cross-sectional and panel studies**

Table 6.13 examines the changes in total poor, food poor and non-food poor by region for the cross-sectional and panel studies. In the cross-sectional study there were reductions between the two surveys in these three measures of 4.7%, 7.3% and 1.2% respectively, while the comparable reductions for total and food poor in the panel study were 3.9% and 6.2% respectively while non-food poor worsened by 1.9%.

Both the cross-sectional and panel surveys found that for all households that there were falls in mean PGI and SPGI analyses between NLSS II and III (Table 6.14) except for non-food indices in the panel survey.

### **6.2.8 Mid- and Far-West district level comparisons of NLSS II and other datasets collected up to 2004 with the UNICEF survey of 2010**

Table 6.15 presents the districts in order based on the ranking and composite index score methods at two time periods, up to 2004 and 2010 with 23 being the worst district. Although

there were some changes Karnali districts occupied positions between 22 and 16 up to 2004 and between 22 to 15 in 2010 for ranking and between 23 to 17 and between 22 to 16 for composite index score.

### **6.3 Conclusions**

**6.3.1** In the cross-sectional survey the percentage of households who were below the total (overall) poverty line fell by 4.7% (from 23.2% to 18.5%) between NLSS II and NLSS III. Households below the food poverty line fell by 7.3% (from 25.1% to 17.8%) while those below the non-food poverty line fell by only 2.2% (from 29.8% to 27.6%). The panel survey also showed falls of a similar magnitude for overall poor (3.9%) and food poor (6.2%) but there was an increase in non-food poor (1.9%).

**6.3.2** Both the cross-sectional and panel surveys found that for all households that there were falls in mean total and food PGI and SPGI analyses between NLSS II and III.

**6.3.3** A total of 23 chronic poverty and vulnerability indicators were identified which were common to both NLSS surveys. There were significant differences in 18 of these indicators between surveys and in general there was evidence of improvements with falls in illiteracy, child mortality, dependency ratio and the time taken to reach a health centre, road post and market. The number of assets owned by households increased substantially and households owning 0 assets fell from 25.0% in NLSS II to 13.7% in NLSS III, while those owning 3+ assets increased from 16.6% in NLSS II to 41.1% in NLSS III.

**6.3.4** There were marked differences between surveys in the percentages that were poor, food poor and non-food poor by indicator. For example the percentage who were illiterate and poor fell from 32.1% in NLSS II to 26.4% in NLSS III. This trend was replicated for most indicators as well as for food and non-food poor. The main exception was number of assets where only 1.4% of households owning 3+ assets were poor in NLSS II compared with 7.0% in NLSS III. The difference was more marked for non-food poor where the respective percentages were 0.9% and 10.2%.

**6.3.5** When the variation in the 23 indicators was taken into account no significant difference in total poor or food poor remained between surveys, but households in NLSS III were 1.78 times more likely to be non-food poor than households in NLSS II.

**6.3.6** A new poverty index was created in which households were classified as neither food nor non-food poor, food poor only, non-food poor only and both food and non-food poor. The percentage of non poor households increased from 61.0% to 66.2% between NLSS II and NLSS III, food poor only fell from 9.3% in NLSS II to 6.3% in NLSS III, non-food poor increased from 13.9% to 16.1% and both food and non-food poor fell from 15.8% to 11.5% between surveys.

**6.3.7** After taking into account the differences in the 23 indicators households in NLSS II were 1.26 times more likely to be food poor only, 1.85 times less likely to be non-food poor and 1.56 times more likely to be both food and non-food poor compared with NLSS III households.

**6.3.8** The changes in poverty gap indices by indicator across the two surveys were also examined. Of the 23 indicators, 19 showed inconsistent trends between surveys for total poverty gap index, 9 for food poverty gap index and all 23 indicators showed heterogeneity for non-food poverty gap index.

**6.3.9** The main heterogeneity for total poverty gap index was for caste and region. Dalits, Disadvantaged non-Dalits, Disadvantaged Janajatis and Upper Caste all worsened (higher PGI) between NLSS II and NLSS III. Three of the regions worsened between the two surveys (Far-West, Western and Central) particularly the Far-West while the other two regions showed slight improvement.

**6.3.10** For food poverty gap index the main heterogeneity was for region with much worse means in the Far-West and Western regions, slightly worse in the Central region and slight improvement in the Eastern and Mid-West regions.

**6.3.11** For non-food poverty gap index five of the six castes worsened between NLSS II and NLSS III particularly the Dalits, Disadvantaged non-Dalits and Disadvantaged Janajatis. Only the Upper caste showed any improvement.

**6.3.12** The changes in squared poverty gap indices by indicator across the two surveys were also examined. Of the 23 indicators, 16 showed inconsistent trends between surveys for total SPGI, 8 for food SPGI and all 23 indicators showed heterogeneity for non-food SPGI. The main heterogeneity was for non-food SPGI where five of the six castes worsened between NLSS II and NLSS III particularly the Dalits, Disadvantaged non-Dalits and Disadvantaged Janajatis. Only the Upper caste showed any improvement.

**6.3.13** District level comparisons of the Mid- and Far-West regions at two time periods of up to 2004 and 2010 did not indicate much change and Karnali districts continued to be among the worst Mid- and Far-West districts using both ranking and composite index scores.

**6.3.14** The panel survey data showed that there was a tendency to move from non-poor to poor if the household had been a non-migrant while a household was more likely to move from poor to non-poor if it had received remittances. For food poor children more likely to be fully immunised if the household had moved from food poor to no longer food poor and for non-food poor a household was more likely to move out of non-food poor if living in a rural area and if taken a loan.

**Table 6.1: Percentages of total poor, food poor and non-food poor households in NLSS II and NLSS III; cross-sectional analyses**

| Region   | Total poor |      |        | Food poor |      |        | Non-food poor |      |        |
|----------|------------|------|--------|-----------|------|--------|---------------|------|--------|
|          | NLSS       |      |        | NLSS      |      |        | NLSS          |      |        |
|          | II         | III  | change | II        | III  | change | II            | III  | change |
| Eastern  | 24.1       | 16.3 | -7.8   | 24.9      | 13.6 | -11.3  | 34.1          | 27.6 | -6.5   |
| Central  | 19.2       | 14.7 | -4.5   | 24.5      | 14.6 | -9.9   | 21.7          | 22.3 | +0.6   |
| Western  | 18.3       | 14.8 | -3.5   | 16.0      | 14.2 | -1.8   | 28.6          | 22.7 | -5.9   |
| Mid-West | 37.0       | 26.2 | -10.8  | 34.1      | 27.6 | -6.5   | 46.6          | 38.4 | -8.2   |
| Far-West | 32.2       | 37.3 | +5.1   | 39.5      | 35.0 | -4.5   | 35.1          | 45.3 | +10.2  |
| Total    | 23.2       | 18.5 | -4.7   | 25.1      | 17.8 | -7.3   | 28.8          | 27.6 | -1.2   |

Change + = worse, - = better

**Table 6.2: Poverty Gap index and Squared Poverty Gap Indices in NLSS II and NLSS III; cross-sectional analyses**

| Region   | Overall poverty |          |        | Food poverty |          |        | Non-food poverty |          |        |
|----------|-----------------|----------|--------|--------------|----------|--------|------------------|----------|--------|
|          | NLSS II         | NLSS III | p      | NLSS II      | NLSS III | p      | NLSS II          | NLSS III | p      |
| PGI      |                 |          |        |              |          |        |                  |          |        |
| Eastern  | 6.14            | 2.82     | <0.001 | 5.35         | 2.46     | <0.001 | 14.18            | 8.91     | <0.001 |
| Central  | 4.65            | 3.38     | <0.001 | 5.29         | 3.38     | <0.001 | 8.37             | 7.01     | 0.024  |
| Western  | 4.28            | 2.91     | 0.004  | 3.49         | 2.86     | ns     | 10.26            | 6.77     | <0.001 |
| Mid-West | 8.28            | 6.18     | 0.011  | 7.92         | 6.35     | ns     | 16.00            | 13.37    | 0.042  |
| Far-West | 7.07            | 8.34     | ns     | 7.70         | 7.80     | ns     | 11.21            | 16.00    | 0.002  |
| Total    | 5.51            | 3.96     | <0.001 | 5.42         | 3.85     | <0.001 | 11.17            | 8.96     | <0.001 |
| SPGI     |                 |          |        |              |          |        |                  |          |        |
| Eastern  | 2.24            | 0.75     | <0.001 | 1.73         | 0.68     | <0.001 | 7.68             | 3.79     | <0.001 |
| Central  | 1.69            | 1.22     | 0.010  | 1.74         | 1.24     | 0.008  | 4.38             | 3.19     | 0.002  |
| Western  | 1.49            | 0.94     | 0.012  | 1.14         | 0.92     | ns     | 4.96             | 2.88     | <0.001 |
| Mid-West | 2.73            | 2.10     | ns     | 2.69         | 2.11     | ns     | 7.19             | 6.25     | ns     |
| Far-West | 2.22            | 2.82     | ns     | 2.19         | 2.67     | ns     | 4.97             | 7.46     | 0.005  |
| Total    | 1.94            | 1.32     | <0.001 | 1.76         | 1.30     | <0.001 | 5.62             | 4.02     | <0.001 |

**Table 6.3 Chronic poverty and vulnerability indicators (%) common to NLSS II and NLSS III; cross-sectional analyses**

| Indicator                    | Categories              | NLSS II (%) | NLSS III (%) | p      |
|------------------------------|-------------------------|-------------|--------------|--------|
| Adult illiteracy rate        | Literate                | 45.9        | 55.6         | <0.001 |
|                              | Illiterate              | 54.1        | 44.4         |        |
| Remittances                  | Yes                     | 88.2        | 68.8         | <0.001 |
|                              | No                      | 11.8        | 31.2         |        |
| Child mortality              | No death                | 77.2        | 82.5         | <0.001 |
|                              | Death                   | 22.8        | 17.5         |        |
| Child immunisation           | Yes                     | 45.7        | 56.6         | <0.001 |
|                              | No                      | 54.3        | 43.4         |        |
| Electricity                  | Yes                     | 44.6        | 73.5         | <0.001 |
|                              | No                      | 55.4        | 26.5         |        |
| Drinking water               | Yes MDG                 | 82.2        | 82.9         | ns     |
|                              | Not MDG                 | 17.8        | 17.1         |        |
| Sanitation                   | Yes MDG                 | 45.4        | 43.0         | 0.018* |
|                              | Not MDG                 | 54.6        | 57.0         |        |
| Wall construction            | Good                    | 53.8        | 35.2         | <0.001 |
|                              | Poor                    | 46.2        | 64.8         |        |
| Roof construction            | Good                    | 70.1        | 81.5         | <0.001 |
|                              | Poor                    | 29.9        | 18.5         |        |
| Cooking                      | Good                    | 20.4        | 31.0         | <0.001 |
|                              | Poor                    | 79.6        | 69.0         |        |
| Assets                       | 0                       | 25.0        | 13.7         | <0.001 |
|                              | 1                       | 38.8        | 21.1         |        |
|                              | 2                       | 19.7        | 24.2         |        |
|                              | 3+                      | 16.6        | 41.1         |        |
| Household head               | Female                  | 19.3        | 26.7         | <0.001 |
|                              | Male                    | 80.7        | 73.3         |        |
| Marital Status               | Not married             | 2.2         | 3.0          | 0.008* |
|                              | Married                 | 85.5        | 86.3         |        |
|                              | Divorced                | 12.3        | 10.7         |        |
| Time to health post > 1 hour | No                      | 82.0        | 87.1         | <0.001 |
|                              | Yes                     | 18.0        | 12.9         |        |
| Time to road head > 1 hour   | No                      | 79.3        | 88.3         | <0.001 |
|                              | Yes                     | 20.7        | 11.7         |        |
| Time to market > 1 hour      | No                      | 58.7        | 67.2         | <0.001 |
|                              | Yes                     | 41.3        | 32.8         |        |
| Caste                        | Dalit                   | 11.7        | 12.8         | 0.002  |
|                              | Disadvantaged non-Dalit | 8.2         | 9.2          |        |
|                              | Disadvantaged Janajatis | 30.6        | 29.0         |        |
|                              | Religious minority      | 4.3         | 3.2          |        |
|                              | Advantaged Janajatis    | 10.6        | 9.6          |        |
|                              | Upper Caste             | 34.5        | 36.2         |        |
| Residency                    | Urban                   | 7.3         | 34.9         | <0.001 |
|                              | Rural                   | 92.7        | 65.2         |        |
| Dependency ratio             | <1                      | 52.6        | 71.6         | <0.001 |
|                              | ≥1                      | 47.4        | 28.4         |        |
| Loans                        | None                    | 35.1        | 38.0         | 0.004* |
|                              | Yes                     | 64.9        | 62.0         |        |
| Migration                    | Non                     | 16.8        | 53.2         | <0.001 |
|                              | Within Nepal            | 69.2        | 43.0         |        |
|                              | From abroad             | 14.1        | 3.9          |        |
| Land owned                   | None                    | 27.4        | 28.8         | <0.001 |
|                              | 0.2 ha                  | 38.5        | 17.6         |        |
|                              | 0.2-1.0 ha              | 30.9        | 40.3         |        |
|                              | 1.01+ ha                | 3.3         | 13.3         |        |
| Region                       | Eastern                 | 23.0        | 21.2         | 0.005* |
|                              | Central                 | 38.3        | 38.1         |        |
|                              | Western                 | 19.9        | 19.2         |        |
|                              | Mid-West                | 11.7        | 12.6         |        |
|                              | Far-West                | 7.1         | 8.8          |        |

**Table 6.4: Relationship of poor, food poor and non-food poor households with chronic poverty and vulnerability indicators in NLSS II and NLSS III; cross-sectional analyses**

|                              | Survey                  | Total poor % |      |        | Food poor % |      |        | Non-food poor % |      |        |
|------------------------------|-------------------------|--------------|------|--------|-------------|------|--------|-----------------|------|--------|
|                              |                         | II           | III  | p      | II          | III  | p      | II              | III  | p      |
| Adult illiteracy rate        | Illiterate              | 32.1         | 26.4 | <0.001 | 33.3        | 23.4 | <0.001 | 41.7            | 39.6 | <0.001 |
| Remittances                  | No                      | 25.4         | 19.5 | <0.001 | 27.3        | 18.4 | <0.001 | 32.4            | 29.2 | <0.001 |
| Child mortality              | Death                   | 31.5         | 28.3 | 0.022* | 31.4        | 25.1 | ns     | 40.2            | 39.7 | 0.001  |
| Child immunisation           | No                      | 43.9         | 35.0 | 0.004* | 44.8        | 31.9 | 0.001  | 46.9            | 45.4 | <0.001 |
| Electricity                  | No                      | 36.6         | 35.9 | <0.001 | 35.1        | 31.4 | <0.001 | 47.3            | 51.9 | <0.001 |
| Drinking water               | Not MDG                 | 38.8         | 28.1 | 0.048* | 37.1        | 26.3 | ns     | 47.8            | 38.5 | 0.005* |
| Sanitation                   | Not MDG                 | 36.2         | 27.9 | ns     | 35.9        | 24.8 | ns     | 45.0            | 40.6 | ns     |
| Wall construction            | Poor                    | 29.5         | 25.2 | <0.001 | 29.5        | 23.1 | <0.001 | 39.4            | 36.6 | <0.001 |
| Roof construction            | Poor                    | 42.7         | 35.1 | <0.001 | 39.2        | 28.8 | <0.001 | 56.5            | 53.0 | <0.001 |
| Cooking                      | Poor                    | 29.6         | 24.9 | <0.001 | 29.9        | 2.8  | 0.001  | 38.3            | 36.1 | <0.001 |
| Assets                       | 0                       | 42.3         | 41.3 | <0.001 | 40.8        | 34.0 | <0.001 | 55.8            | 60.0 | <0.001 |
|                              | 1                       | 26.3         | 31.0 |        | 26.9        | 27.5 |        | 34.2            | 45.2 |        |
|                              | 2                       | 10.8         | 14.3 |        | 15.6        | 14.3 |        | 12.1            | 23.4 |        |
|                              | +3                      | 1.4          | 7.0  |        | 8.3         | 9.4  |        | 0.9             | 10.2 |        |
| Household head               | Male                    | 24.3         | 18.9 | <0.001 | 25.7        | 17.6 | <0.001 | 30.9            | 29.0 | <0.001 |
| Marital Status               | Not married             | 13.6         | 5.1  | ns     | 13.6        | 6.8  | ns     | 17.0            | 13.0 | ns     |
|                              | Married                 | 23.5         | 19.1 |        | 25.5        | 18.1 |        | 29.7            | 28.0 |        |
|                              | Divorced                | 22.5         | 17.9 |        | 24.6        | 18.1 |        | 32.3            | 27.9 |        |
| Time to health post > 1 hour | Yes                     | 44.7         | 32.2 | <0.001 | 40.7        | 30.8 | <0.001 | 57.4            | 44.9 | <0.001 |
| Time to road head > 1 hour   | Yes                     | 41.8         | 36.1 | <0.001 | 38.0        | 33.3 | <0.001 | 57.2            | 48.2 | <0.001 |
| Time to market > 1 hour      | Yes                     | 36.7         | 29.3 | <0.001 | 34.9        | 26.5 | <0.001 | 48.1            | 42.1 | <0.001 |
| Caste                        | Dalit                   | 39.0         | 34.6 | <0.001 | 37.9        | 29.4 | <0.001 | 46.3            | 49.7 | <0.001 |
|                              | Disadvantaged non-Dalit | 21.7         | 25.4 |        | 25.8        | 21.0 |        | 26.4            | 36.7 |        |
|                              | Disadvantaged Janajatis | 31.7         | 20.2 |        | 31.3        | 19.4 |        | 41.6            | 30.8 |        |
|                              | Religious minority      | 34.9         | 20.4 |        | 40.2        | 12.6 |        | 35.5            | 36.6 |        |
|                              | Advantaged Janajatis    | 8.5          | 9.3  |        | 17.7        | 9.4  |        | 11.4            | 14.7 |        |
|                              | Upper Caste             | 13.5         | 12.3 |        | 15.3        | 14.3 |        | 19.3            | 17.6 |        |
| Residency                    | Rural                   | 24.8         | 22.4 | <0.001 | 25.8        | 21.7 | <0.001 | 32.1            | 32.3 | <0.001 |
| Dependency ratio             | ≥1                      | 32.8         | 33.1 | <0.001 | 33.9        | 30.6 | <0.001 | 39.4            | 43.6 | <0.001 |
| Loans                        | Yes                     | 26.2         | 19.8 | 0.001  | 27.7        | 19.0 | 0.013* | 33.1            | 28.5 | <0.001 |
| Migration                    | Non                     | 28.4         | 23.8 | <0.001 | 28.2        | 21.6 | <0.001 | 39.5            | 35.6 | <0.001 |
|                              | Within Nepal            | 21.9         | 11.4 |        | 23.6        | 12.8 |        | 28.1            | 16.9 |        |
|                              | From abroad             | 22.9         | 25.5 |        | 28.5        | 20.8 |        | 26.2            | 35.5 |        |
| Land owned                   | None                    | 16.4         | 14.9 | <0.001 | 22.5        | 12.7 | <0.001 | 18.7            | 24.1 | <0.001 |
|                              | 0.2 ha                  | 27.9         | 24.0 |        | 29.1        | 22.2 |        | 36.8            | 36.5 |        |
|                              | 0.2-1.0 ha              | 24.5         | 21.1 |        | 23.8        | 20.9 |        | 32.1            | 29.3 |        |
|                              | +1.01ha                 | 10.1         | 11.4 |        | 10.9        | 13.4 |        | 17.1            | 18.0 |        |
| Region                       | Eastern                 | 24.1         | 16.3 | <0.001 | 24.9        | 13.6 | <0.001 | 34.1            | 27.6 | <0.001 |
|                              | Central                 | 19.2         | 14.7 |        | 24.5        | 14.6 |        | 21.7            | 22.3 |        |
|                              | Western                 | 18.3         | 14.8 |        | 16.0        | 14.2 |        | 28.6            | 22.7 |        |
|                              | Mid-West                | 37.0         | 26.2 |        | 34.1        | 27.6 |        | 46.6            | 38.4 |        |
|                              | Far-West                | 32.2         | 37.3 |        | 39.5        | 35.0 |        | 35.1            | 45.3 |        |

\* not significant after correction for multiple testing (Bonferroni correction)

**Table 6.5: Combined analysis of NLSS II and NLSS III showing odds ratios for each indicator and survey for total poor, food poor and non-food poor; cross-sectional analyses**

| Indicator                    | Categories              | Total poor |        | Food poor  |        | Non-food poor |        |
|------------------------------|-------------------------|------------|--------|------------|--------|---------------|--------|
|                              |                         | Odds ratio | p      | Odds ratio | p      | Odds ratio    | p      |
| Adult illiteracy rate        | Literate                | 1          |        | 1          |        | 1             |        |
|                              | Illiterate              | 1.46       | <0.001 | 1.35       | <0.001 | 1.81          | <0.001 |
| Remittances                  | Yes                     | 1          |        | 1          |        | 1             |        |
|                              | No                      | 1.23       | 0.008* | 1.19       | 0.016* | 1.27          | 0.001  |
| Child mortality              | No death                | 1          |        | 1          |        | 1             |        |
|                              | Death                   | 1.02       | ns     | 1.14       | ns     | 0.93          | ns     |
| Child immunisation           | Yes                     | 1          |        | 1          |        | 1             |        |
|                              | No                      | 1.42       | <0.001 | 1.38       | <0.001 | 1.12          | ns     |
| Electricity                  | Yes                     | 1          |        | 1          |        | 1             |        |
|                              | No                      | 1.40       | <0.001 | 1.21       | 0.010* | 1.61          | <0.001 |
| Drinking water               | Yes MDG                 | 1          |        | 1          |        | 1             |        |
|                              | Not MDG                 | 1.22       | 0.006* | 1.18       | 0.017* | 1.08          | ns     |
| Sanitation                   | Yes MDG                 | 1          |        | 1          |        | 1             |        |
|                              | Not MDG                 | 2.14       | <0.001 | 1.67       | <0.001 | 1.99          | <0.001 |
| Wall construction            | Good                    | 1          |        | 1          |        | 1             |        |
|                              | Poor                    | 1.48       | <0.001 | 1.26       | 0.001  | 1.62          | <0.001 |
| Roof construction            | Good                    | 1          |        | 1          |        | 1             |        |
|                              | Poor                    | 1.66       | <0.001 | 1.33       | <0.001 | 1.98          | <0.001 |
| Cooking                      | Good                    | 1          |        | 1          |        | 1             |        |
|                              | Poor                    | 2.61       | <0.001 | 1.35       | 0.014* | 2.39          | <0.001 |
| Assets                       | 0                       | 3.00       | <0.001 | 1.80       | <0.001 | 4.93          | <0.001 |
|                              | 1                       | 2.21       |        | 1.42       |        | 3.01          |        |
|                              | 2                       | 1.43       |        | 1.08       |        | 1.78          |        |
|                              | 3+                      | 1          |        | 1          |        | 1             |        |
| Household head               | Female                  | 1          |        | 1          |        | 1             |        |
|                              | Male                    | 1.55       | <0.001 | 1.22       | 0.008* | 2.00          | <0.001 |
| Marital Status               | Not married             | 0.69       |        | 0.70       |        | 0.87          |        |
|                              | Married                 | 1.29       | 0.004* | 1.19       | 0.024* | 1.17          | ns     |
|                              | Divorced                | 1          |        | 1          |        | 1             |        |
| Time to health post > 1 hour | No                      | 1          |        | 1          |        | 1             |        |
|                              | Yes                     | 1.26       | 0.003* | 1.25       | 0.004* | 1.27          | 0.002* |
| Time to road head > 1 hour   | No                      | 1          |        | 1          |        | 1             |        |
|                              | Yes                     | 1.23       | 0.015* | 1.20       | 0.030* | 1.18          | 0.047* |
| Time to market > 1 hour      | No                      | 1          |        | 1          |        | 1             |        |
|                              | Yes                     | 1.12       | ns     | 1.02       | ns     | 1.19          | 0.018  |
| Caste                        | Dalit                   | 2.19       | <0.001 | 1.84       | <0.001 | 2.09          | <0.001 |
|                              | Disadvantaged non-Dalit | 2.33       |        | 1.78       |        | 2.21          |        |
|                              | Disadvantaged Janajatis | 2.17       |        | 1.84       |        | 2.08          |        |
|                              | Religious minority      | 1.98       |        | 1.49       |        | 1.83          |        |
|                              | Advantaged Janajatis    | 1.91       |        | 1.72       |        | 1.69          |        |
|                              | Upper Caste             | 1          |        | 1          |        | 1             |        |
| Residency                    | Urban                   | 1          |        | 1          |        | 1             |        |
|                              | Rural                   | 2.35       | <0.001 | 1.26       | 0.021  | 3.25          | <0.001 |
| Dependency ratio             | <1                      | 1          |        | 1          |        | 1             |        |
|                              | ≥1                      | 2.53       | <0.001 | 2.22       | <0.001 | 2.16          | <0.001 |
| Loans                        | None                    | 1          |        | 1          |        | 1             |        |
|                              | Yes                     | 1.03       | ns     | 1.08       | ns     | 0.93          | ns     |
| Migration                    | Non                     | 0.79       |        | 0.75       |        | 0.97          |        |
|                              | Within Nepal            | 0.76       | ns     | 0.73       | 0.011* | 0.85          | ns     |
|                              | From abroad             | 1          |        | 1          |        | 1             |        |
| Land owned                   | None                    | 2.89       | <0.001 | 1.86       | <0.001 | 3.18          | <0.001 |
|                              | 0.2 ha                  | 2.03       |        | 1.54       |        | 2.33          |        |
|                              | 0.2-1.0 ha              | 1.83       |        | 1.45       |        | 1.72          |        |
|                              | 1.01+ ha                | 1          |        | 1          |        | 1             |        |
|                              | Eastern                 | 0.27       | <0.001 | 0.28       | <0.001 | 0.38          | <0.001 |
| Region                       | Central                 | 0.39       |        | 0.43       |        | 0.45          |        |
|                              | Western                 | 0.39       |        | 0.32       |        | 0.60          |        |
|                              | Mid-West                | 0.45       |        | 0.51       |        | 0.56          |        |
|                              | Far-West                | 1          |        | 1          |        | 1             |        |
| Survey                       | II                      | 1          |        | 1          |        | 1             |        |
|                              | III                     | 1.30       | 0.002* | 0.95       | ns     | 1.78          | <0.001 |

\* not significant after correction for multiple testing (Bonferroni correction)

**Table 6.6: Percentages of not poor, food poor only, non-food poor only and both food and non-food poor households in NLSS II and NLSS III; cross-sectional analyses**

| Index                       | NLSS II (%) | NLSS III (%) | p      |
|-----------------------------|-------------|--------------|--------|
| Not poor                    | 61.0        | 66.2         | <0.001 |
| Food poor only              | 9.3         | 6.3          |        |
| Non-food poor only          | 13.9        | 16.1         |        |
| Both food and non-food poor | 15.8        | 11.5         |        |

**Table 6.7: Percentages of food poor only, non-food poor only and both food and non-food poor for each chronic poverty and vulnerability indicator in NLSS II and NLSS III; cross-sectional analyses**

| Indicator                    | Categories              | Food poor only |      | Non-food poor only |      | Both food and non-food poor |      |
|------------------------------|-------------------------|----------------|------|--------------------|------|-----------------------------|------|
|                              |                         | II             | III  | II                 | III  | II                          | III  |
| Adult illiteracy rate        | Illiterate              | 10.8           | 6.2  | 19.2               | 22.4 | 22.5                        | 17.2 |
| Remittances                  | No                      | 10.0           | 6.1  | 15.0               | 16.9 | 17.4                        | 12.3 |
| Child mortality              | Death                   | 9.9            | 6.7  | 18.7               | 21.3 | 21.5                        | 18.4 |
| Child immunisation           | No                      | 14.8           | 8.2  | 16.9               | 21.7 | 30.0                        | 23.7 |
| Electricity                  | No                      | 9.7            | 7.9  | 21.9               | 28.3 | 25.5                        | 23.6 |
| Drinking water               | Not MDG                 | 9.9            | 7.5  | 20.7               | 19.7 | 27.2                        | 18.8 |
| Sanitation                   | Not MDG                 | 11.0           | 7.3  | 20.2               | 23.0 | 24.8                        | 17.6 |
| Wall construction            | Poor                    | 9.8            | 7.1  | 19.6               | 20.6 | 19.7                        | 16.0 |
| Roof construction            | Poor                    | 8.7            | 6.0  | 26.0               | 30.2 | 30.5                        | 22.8 |
| Cooking                      | Poor                    | 9.5            | 7.2  | 17.9               | 20.5 | 20.4                        | 15.6 |
| Assets                       | 0                       | 9.3            | 5.6  | 24.3               | 31.7 | 31.5                        | 28.4 |
|                              | 1                       | 10.0           | 7.9  | 17.3               | 25.5 | 16.9                        | 19.7 |
|                              | 2                       | 9.0            | 5.8  | 5.5                | 14.8 | 6.6                         | 8.6  |
|                              | +3                      | 7.9            | 5.9  | 0.5                | 6.8  | 0.5                         | 3.5  |
| Household head               | Male                    | 9.5            | 6.0  | 14.5               | 17.4 | 16.5                        | 11.6 |
| Marital Status               | Not married             | 4.5            | 5.1  | 8.0                | 11.3 | 9.1                         | 1.7  |
|                              | Married                 | 9.3            | 6.3  | 13.6               | 16.3 | 16.1                        | 11.8 |
|                              | Divorced                | 9.6            | 5.9  | 17.3               | 15.7 | 15.0                        | 12.1 |
| Time to health post > 1 hour | Yes                     | 7.9            | 8.7  | 24.7               | 22.9 | 32.8                        | 22.1 |
| Time to road head > 1 hour   | Yes                     | 8.2            | 9.7  | 27.4               | 24.6 | 29.8                        | 23.6 |
| Time to market > 1 hour      | Yes                     | 9.1            | 7.3  | 22.4               | 22.9 | 25.8                        | 19.2 |
| Caste                        | Dalit                   | 12.1           | 7.0  | 20.4               | 27.2 | 25.9                        | 22.5 |
|                              | Disadvantaged non-Dalit | 11.0           | 5.7  | 11.6               | 21.4 | 14.8                        | 15.3 |
|                              | Disadvantaged Janajatis | 8.8            | 7.0  | 10.1               | 18.4 | 22.5                        | 12.3 |
|                              | Religious minority      | 17.2           | 4.7  | 12.4               | 28.8 | 23.1                        | 7.9  |
|                              | Advantaged Janajatis    | 12.1           | 4.5  | 5.8                | 9.8  | 5.6                         | 4.9  |
|                              | Upper Caste             | 6.2            | 6.2  | 10.2               | 9.5  | 9.1                         | 8.1  |
| Residency                    | Rural                   | 8.9            | 7.2  | 15.2               | 17.8 | 16.9                        | 14.5 |
| Dependency ratio             | ≥1                      | 10.5           | 8.2  | 15.9               | 21.2 | 23.5                        | 22.4 |
| Loans                        | Yes                     | 9.9            | 6.7  | 15.3               | 16.2 | 17.8                        | 12.3 |
| Migration                    | Non                     | 9.0            | 6.5  | 20.3               | 20.5 | 19.2                        | 15.1 |
|                              | Within Nepal            | 8.5            | 6.0  | 13.0               | 10.1 | 15.1                        | 6.8  |
|                              | From abroad             | 13.1           | 6.1  | 10.7               | 20.8 | 15.5                        | 14.7 |
| Land owned                   | None                    | 11.3           | 4.1  | 7.5                | 15.6 | 11.2                        | 8.6  |
|                              | 0.2 ha                  | 9.1            | 7.0  | 16.8               | 21.3 | 20.0                        | 15.2 |
|                              | 0.2-1.0 ha              | 8.0            | 7.3  | 16.3               | 15.7 | 15.8                        | 13.6 |
|                              | +1.01ha                 | 5.4            | 6.8  | 11.6               | 11.4 | 5.4                         | 6.6  |
| Region                       | Eastern                 | 7.8            | 5.3  | 17.0               | 19.3 | 17.1                        | 8.3  |
|                              | Central                 | 11.2           | 5.2  | 8.3                | 12.9 | 13.3                        | 9.4  |
|                              | Western                 | 4.0            | 4.8  | 16.5               | 13.3 | 12.1                        | 9.5  |
|                              | Mid-West                | 9.6            | 10.4 | 22.1               | 21.2 | 24.5                        | 17.2 |
|                              | Far-West                | 17.8           | 10.2 | 13.4               | 20.5 | 21.7                        | 24.8 |

Table 6.8: Combined analysis of NLSS II and NLSS III showing odds ratios for each indicator and survey for food poor only, non-food poor only and both food and non-food poor; cross-sectional analyses

| Indicator                    | Categories              | Food poor only | Non-food poor only | Both food and non-food poor | p      |
|------------------------------|-------------------------|----------------|--------------------|-----------------------------|--------|
| Adult illiteracy rate        | Literate                | 0.82           | 0.56               | 0.58                        | <0.001 |
|                              | Illiterate              | 1              | 1                  | 1                           |        |
| Remittances                  | Yes                     | 1              | 1                  | 1                           | 0.003* |
|                              | No                      | 1.19           | 1.26               | 1.36                        |        |
| Child mortality              | No death                | 1              | 1                  | 1                           | ns     |
|                              | Death                   | 1.20           | 0.92               | 0.67                        |        |
| Child immunisation           | Yes                     | 1              | 1                  | 1                           | 0.001  |
|                              | No                      | 1.45           | 1.08               | 1.39                        |        |
| Electricity                  | Yes                     | 1              | 1                  | 1                           | <0.001 |
|                              | No                      | 1.17           | 1.65               | 1.63                        |        |
| Drinking water               | Yes MDG                 | 1              | 1                  | 1                           | ns     |
|                              | Not MDG                 | 1.13           | 1.02               | 1.23                        |        |
| Sanitation                   | Yes MDG                 | 1              | 1                  | 1                           | <0.001 |
|                              | Not MDG                 | 1.61           | 1.99               | 2.31                        |        |
| Wall construction            | Good                    | 1              | 1                  | 1                           | <0.001 |
|                              | Poor                    | 1.33           | 1.77               | 1.60                        |        |
| Roof construction            | Good                    | 1              | 1                  | 1                           | <0.001 |
|                              | Poor                    | 1.08           | 1.91               | 2.14                        |        |
| Cooking                      | Good                    | 1              | 1                  | 1                           | <0.001 |
|                              | Poor                    | 1.01           | 2.13               | 2.81                        |        |
| Assets                       | 0                       | 1.18           | 4.68               | 5.54                        | <0.001 |
|                              | 1                       | 1.15           | 3.06               | 3.10                        |        |
|                              | 2                       | 0.91           | 1.77               | 1.74                        |        |
|                              | 3+                      | 1              | 1                  | 1                           |        |
| Household head               | Female                  | 0.87           | 0.47               | 0.52                        | <0.001 |
|                              | Male                    | 1              | 1                  | 1                           |        |
| Marital Status               | Not married             | 0.84           | 0.97               | 0.58                        | ns     |
|                              | Married                 | 1.10           | 1.10               | 1.30                        |        |
|                              | Divorced                | 1              | 1                  | 1                           |        |
| Time to health post > 1 hour | No                      | 0.88           | 0.84               | 0.68                        | 0.002  |
|                              | Yes                     | 1              | 1                  | 1                           |        |
| Time to road head > 1 hour   | No                      | 0.77           | 0.84               | 0.77                        | 0.040* |
|                              | Yes                     | 1              | 1                  | 1                           |        |
| Time to market > 1 hour      | No                      | 1.05           | 0.84               | 0.87                        | ns     |
|                              | Yes                     | 1              | 1                  | 1                           |        |
| Caste                        | Dalit                   | 2.16           | 2.24               | 2.62                        | <0.001 |
|                              | Disadvantaged non-Dalit | 1.73           | 2.22               | 2.69                        |        |
|                              | Disadvantaged Janajatis | 1.91           | 2.11               | 2.58                        |        |
|                              | Religious minority      | 2.07           | 2.24               | 1.81                        |        |
|                              | Advantaged Janajatis    | 1.85           | 1.71               | 2.07                        |        |
|                              | Upper Caste             | 1              | 1                  | 1                           |        |
| Residency                    | Urban                   | 0.91           | 0.28               | 0.35                        | <0.001 |
|                              | Rural                   | 1              | 1                  | 1                           |        |
| Dependency ratio             | <1                      | 0.54           | 0.56               | 0.28                        | <0.001 |
|                              | ≥1                      | 1              | 1                  | 1                           |        |
| Loans                        | None                    | 0.87           | 1.10               | 1.03                        | ns     |
|                              | Yes                     | 1              | 1                  | 1                           |        |
| Migration                    | Non                     | 0.67           | 0.99               | 0.81                        | 0.026* |
|                              | Within Nepal            | 0.66           | 0.84               | 0.72                        |        |
|                              | From abroad             | 1              | 1                  | 1                           |        |
| Land owned                   | None                    | 1.41           | 2.89               | 4.31                        | <0.001 |
|                              | 0.2 ha                  | 1.20           | 2.14               | 2.95                        |        |
|                              | 0.2-1.0 ha              | 1.16           | 1.52               | 2.24                        |        |
|                              | 1.01+ ha                | 1              | 1                  | 1                           |        |
| Region                       | Eastern                 | 0.26           | 0.43               | 0.18                        | <0.001 |
|                              | Central                 | 0.36           | 0.42               | 0.30                        |        |
|                              | Western                 | 0.21           | 0.62               | 0.31                        |        |
|                              | Mid-West                | 0.6            | 0.62               | 0.38                        |        |
|                              | Far-West                | 1              | 1                  | 1                           |        |
| Survey                       | II                      | 1.26           | 0.54               | 0.64                        | <0.001 |
|                              | III                     | 1              | 1                  | 1                           |        |

**Table 6.9: Combined analysis of NLSS II and NLSS III showing mean Poverty Gap Indices by chronic poverty and vulnerability indicators; cross-sectional analyses**

| Indicator             | Categories      | Total poor only |                     | Food poor only |            | Non-food poor only |                     |
|-----------------------|-----------------|-----------------|---------------------|----------------|------------|--------------------|---------------------|
|                       |                 | Analysis 1      | Analysis 2          | Analysis 1     | Analysis 2 | Analysis 1         | Analysis 2          |
| Adult illiteracy rate | Literate        | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | Illiterate      | 3.69            | 1.67                | -2.54          | -1.12      | -8.48              | -3.47               |
|                       | Interaction (p) | 0.001           | <0.001              | <0.001         | <0.001     | 0.007*             | <0.001              |
| Remittances           | Yes             | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | No              | 1.40            | 0.78                | 1.08           | 0.76       | 2.35               | 1.07                |
|                       | Interaction (p) | <0.001          | <0.001              | <0.001         | 0.003*     | <0.001             | <0.001              |
| Child mortality       | No death        | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | Death           | 2.49            | -0.26               | 1.90           | 0.33       | 5.00               | 0.62                |
|                       | Interaction (p) | ns              | <0.001              | ns             | ns         | ns                 | <0.001              |
| Child immunisation    | Yes             | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | No              | 3.00            | 1.73                | 2.66           | 2.12       | 4.53               | 1.54                |
|                       | Interaction (p) | <0.001          | <0.001              | ns             | <0.001     | ns                 | <0.001              |
| Electricity           | Yes             | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | No              | 6.19            | 1.78                | 5.24           | 1.15       | 13.23              | 3.16                |
|                       | Interaction (p) | 0.002*          | <0.001              | ns             | 0.004*     | <0.001             | <0.001              |
| Drinking water        | Yes MDG         | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | Not MDG         | 3.22            | 1.12                | 2.93           | 0.98       | 5.46               | 1.17                |
|                       | Interaction (p) | <0.001          | <0.001              | ns             | 0.002*     | <0.001             | <0.001              |
| Sanitation            | Yes MDG         | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | Not MDG         | 4.88            | 1.54                | 3.67           | 1.16       | 11.20              | 3.03                |
|                       | Interaction (p) | <0.001          | <0.001              | <0.001         | <0.001     | 0.003*             | <0.001              |
| Wall construction     | Good            | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | Poor            | 4.35            | 0.16                | 3.55           | 0.27       | 9.34               | 1.07                |
|                       | Interaction (p) | <0.001          | 0.004*              | 0.006*         | ns         | <0.001             | <0.001              |
| Roof construction     | Good            | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | Poor            | 5.04            | 2.85                | 3.42           | 1.43       | 17.83              | 6.91                |
|                       | Interaction (p) | <0.001          | <0.001 <sup>†</sup> | <0.001         | <0.001     | <0.001             | <0.001 <sup>†</sup> |
| Cooking               | Good            | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | Poor            | 4.45            | 0.11                | 3.63           | -0.26      | 10.05              | 0.97                |
|                       | Interaction (p) | <0.001          | 0.011*              | 0.016*         | ns         | <0.001             | <0.001              |
| Assets                | 0               | 9.18            | 4.66                | 6.72           | 3.08       | 20.37              | 10.46               |
|                       | 1               | 5.96            | 1.40                | 4.77           | 1.01       | 13.26              | 3.97                |
|                       | 2               | 1.58            | -0.03               | 1.27           | -0.10      | 3.83               | 0.42                |
|                       | +3              | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | Interaction (p) | <0.001          | <0.001              | 0.009*         | <0.001     | <0.001             | <0.001 <sup>†</sup> |
| Household head        | Female          | -0.30           | -1.56               | -0.08          | 0.77       | 1.56               | 4.06                |
|                       | Male            | 0               | 0                   | 0              | 0          | 0                  | 0                   |

| Indicator                    | Categories              | Total poor only |                     | Food poor only |                     | Non-food poor only |                     |
|------------------------------|-------------------------|-----------------|---------------------|----------------|---------------------|--------------------|---------------------|
|                              |                         | Analysis 1      | Analysis 2          | Analysis 1     | Analysis 2          | Analysis 1         | Analysis 2          |
|                              | Interaction (p)         | ns              | <0.001              | ns             | 0.019*              | ns                 | <0.001              |
| Marital Status               | Not married             | -2.89           | 0.17                | -2.15          | 0.21                | -6.73              | -1.32               |
|                              | Married                 | 0.44            | 0.97                | 0.49           | 0.91                | -0.25              | 0.68                |
|                              | Divorced                | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | Interaction (p)         | ns              | 0.001               | ns             | ns                  | ns                 | <0.001              |
| Time to health post > 1 hour | No                      | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | Yes                     | -4.32           | -1.71               | 4.37           | 1.67                | 8.10               | 2.22                |
|                              | Interaction (p)         | <0.001          | <0.001              | ns             | <0.001              | <0.001             | <0.001              |
| Time to road head > 1 hour   | No                      | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | Yes                     | -4.59           | -0.71               | 4.39           | 0.50                | 9.69               | 3.00                |
|                              | Interaction (p)         | <0.001          | <0.001              | ns             | ns                  | <0.001             | <0.001              |
| Time to market > 1 hour      | No                      | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | Yes                     | -4.19           | -0.40               | 3.80           | 0.37                | 8.43               | 0.67                |
|                              | Interaction (p)         | <0.001          | <0.001              | ns             | ns                  | <0.001             | <0.001              |
| Caste                        | Dalit                   | 5.37            | 2.21                | 3.52           | 2.10                | 13.02              | 4.78                |
|                              | Disadvantaged non-Dalit | 2.15            | 1.35                | 0.90           | 1.07                | 6.38               | 2.97                |
|                              | Disadvantaged Janajatis | 1.76            | 1.92                | 1.24           | 1.77                | 4.96               | 3.87                |
|                              | Religious minority      | 1.03            | 0.82                | -0.45          | 0.97                | 7.10               | 2.92                |
|                              | Advantaged Janajatis    | -0.74           | 0.78                | -1.19          | 0.97                | -1.13              | 1.68                |
|                              | Upper Caste             | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | Interaction (p)         | <0.001          | <0.001 <sup>†</sup> | <0.001         | <0.001              | <0.001             | <0.001 <sup>†</sup> |
| Residency                    | Urban                   | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | Rural                   | 2.49            | -1.85               | 2.64           | -0.93               | 4.66               | -4.70               |
|                              | Interaction (p)         | 0.039*          | <0.001              | ns             | 0.002*              | <0.001             | <0.001 <sup>†</sup> |
| Dependency ratio             | <1                      | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | ≥1                      | 5.65            | 4.09                | 4.74           | 3.55                | 9.72               | 5.90                |
|                              | Interaction (p)         | ns              | <0.001 <sup>†</sup> | ns             | <0.001 <sup>†</sup> | ns                 | <0.001 <sup>†</sup> |
| Loans                        | None                    | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | Yes                     | 0.70            | -0.04               | 0.75           | 0.26                | 0.98               | -0.65               |
|                              | Interaction (p)         | 0.013*          | 0.011*              | 0.019          | ns                  | 0.002*             | <0.001              |
| Migration                    | Non                     | 1.09            | 0.27                | 1.79           | 0.02                | 0.75               | 0.13                |
|                              | Within Nepal            | -1.69           | 0.16                | -0.41          | -0.16               | -5.44              | -0.14               |
|                              | From abroad             | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | Interaction (p)         | ns              | 0.003*              | ns             | ns                  | <0.001             | <0.001              |
| Land owned                   | None                    | 1.16            | 2.47                | -0.05          | 1.41                | 3.00               | 5.46                |
|                              | 0.2 ha                  | 3.49            | 2.16                | 2.40           | 1.41                | 7.21               | 4.14                |
|                              | 0.2-1.0 ha              | 2.53            | 1.34                | 2.06           | 0.94                | 4.45               | 2.41                |
|                              | 1.01+ ha                | 0               | 0                   | 0              | 0                   | 0                  | 0                   |

| Indicator | Categories      | Total poor only |                     | Food poor only |                     | Non-food poor only |            |
|-----------|-----------------|-----------------|---------------------|----------------|---------------------|--------------------|------------|
|           |                 | Analysis 1      | Analysis 2          | Analysis 1     | Analysis 2          | Analysis 1         | Analysis 2 |
|           | Interaction (p) | ns              | <0.001              | 0.008*         | 0.018*              | 0.009*             | <0.001     |
| Region    | Eastern         | -5.52           | -4.21               | -5.34          | -4.33               | -7.08              | -4.61      |
|           | Central         | -4.95           | -2.54               | -4.43          | -2.38               | -8.98              | -3.74      |
|           | Western         | -5.43           | -2.89               | -4.94          | -3.50               | -9.22              | -2.87      |
|           | Mid-West        | -2.16           | -2.45               | -1.45          | -1.84               | -2.61              | -3.53      |
|           | Far-West        | 0               | 0                   | 0              | 0                   | 0                  | 0          |
|           | Interaction (p) | <0.001          | <0.001 <sup>†</sup> | 0.004*         | <0.001 <sup>†</sup> | <0.001             | <0.001     |

\* not significant after correction for multiple testing (Bonferroni correction), <sup>†</sup> effect size > 0.1

**Table 6.10: Combined analysis of NLSS II and NLSS III showing mean Squared Poverty Gap Indices by chronic poverty and vulnerability indicators**

| Indicator             | Categories      | Total poor only |                     | Food poor only |            | Non-food poor only |                     |
|-----------------------|-----------------|-----------------|---------------------|----------------|------------|--------------------|---------------------|
|                       |                 | Analysis 1      | Analysis 2          | Analysis 1     | Analysis 2 | Analysis 1         | Analysis 2          |
| Adult illiteracy rate | Literate        | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | Illiterate      | 1.36            | 0.67                | 0.92           | 0.41       | 4.18               | 1.72                |
|                       | Interaction (p) | 0.002*          | <0.001              | 0.007*         | <0.001     | 0.003*             | <0.001              |
| Remittances           | Yes             | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | No              | 0.68            | 0.37                | 0.56           | 0.37       | 0.37               | 0.57                |
|                       | Interaction (p) | <0.001          | 0.003*              | <0.001         | 0.009*     | <0.001             | <0.001              |
| Child mortality       | No death        | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | Death           | 0.99            | 0.08                | 0.76           | 0.09       | 2.54               | 0.07                |
|                       | Interaction (p) | ns              | <0.001              | ns             | 0.015*     | ns                 | <0.001              |
| Child immunisation    | Yes             | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | No              | 1.32            | 0.76                | 1.22           | 0.89       | 2.65               | 1.05                |
|                       | Interaction (p) | ns              | <0.001              | ns             | <0.001     | ns                 | <0.001              |
| Electricity           | Yes             | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | No              | 2.32            | 0.55                | 2.02           | 0.50       | 6.67               | 1.64                |
|                       | Interaction (p) | 0.032*          | <0.001              | ns             | 0.004*     | <0.001             | <0.001              |
| Drinking water        | Yes MDG         | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | Not MDG         | 1.27            | 0.53                | 1.13           | 0.41       | 2.89               | 0.79                |
|                       | Interaction (p) | 0.001           | <0.001              | ns             | 0.003*     | <0.001             | <0.001              |
| Sanitation            | Yes MDG         | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | Not MDG         | 1.66            | 0.47                | 1.22           | 0.30       | 5.34               | 1.46                |
|                       | Interaction (p) | <0.001          | <0.001              | 0.001          | 0.008*     | <0.001             | <0.001              |
| Wall construction     | Good            | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | Poor            | 1.50            | -0.10               | 1.18           | 0.02       | 4.44               | 0.22                |
|                       | Interaction (p) | 0.003*          | 0.027*              | ns             | ns         | 0.030*             | <0.001              |
| Roof construction     | Good            | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | Poor            | 1.191           | 1.30                | 1.23           | 0.57       | 6.55               | 4.19                |
|                       | Interaction (p) | <0.001          | <0.001 <sup>†</sup> | ns             | <0.001     | <0.001             | <0.001 <sup>†</sup> |
| Cooking               | Good            | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | Poor            | 1.49            | -0.02               | 1.18           | -0.17      | 4.70               | 0.36                |
|                       | Interaction (p) | <0.001          | 0.041*              | ns             | ns         | <0.001             | <0.001              |
| Assets                | 0               | 3.36            | 1.83                | 2.54           | 1.24       | 10.31              | 5.65                |
|                       | 1               | 2.23            | 0.45                | 1.76           | 0.37       | 6.57               | 1.63                |
|                       | 2               | 0.50            | -0.08               | 0.44           | -0.05      | 1.56               | -0.12               |
|                       | +3              | 0               | 0                   | 0              | 0          | 0                  | 0                   |
|                       | Interaction (p) | <0.001          | <0.001 <sup>†</sup> | ns             | <0.001     | <0.001             | <0.001 <sup>†</sup> |
| Household head        | Female          | -0.14           | -0.58               | 0.03           | -0.28      | -0.58              | -1.98               |
|                       | Male            | 0               | 0                   | 0              | 0          | 0                  | 0                   |

| Indicator                    | Categories              | Total poor only |                     | Food poor only |                     | Non-food poor only |                     |
|------------------------------|-------------------------|-----------------|---------------------|----------------|---------------------|--------------------|---------------------|
|                              |                         | Analysis 1      | Analysis 2          | Analysis 1     | Analysis 2          | Analysis 1         | Analysis 2          |
|                              | Interaction (p)         | ns              | <0.001              | ns             | 0.030*              | ns                 | <0.001              |
| Marital Status               | Not married             | -0.92           | 0.14                | -0.57          | 0.21                | -3.46              | -0.89               |
|                              | Married                 | 0.24            | 0.40                | 0.26           | 0.38                | -0.02              | 0.38                |
|                              | Divorced                | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | Interaction (p)         | ns              | 0.008*              | ns             | ns                  | ns                 | <0.001              |
| Time to health post > 1 hour | No                      | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | Yes                     | 1.68            | 0.72                | 1.73           | 0.68                | 4.08               | 1.25                |
|                              | Interaction (p)         | <0.001          | <0.001              | ns             | <0.001              | <0.001             | <0.001              |
| Time to road head > 1 hour   | No                      | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | Yes                     | 1.53            | 0.18                | 1.46           | 0.03                | 4.84               | 2.10                |
|                              | Interaction (p)         | <0.001          | <0.001              | ns             | 0.027*              | <0.001             | <0.001 <sup>†</sup> |
| Time to market > 1 hour      | No                      | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | Yes                     | 1.61            | 0.22                | 1.51           | 0.26                | 4.18               | 0.36                |
|                              | Interaction (p)         | 0.001           | 0.002*              | ns             | ns                  | <0.001             | <0.001              |
| Caste                        | Dalit                   | 1.93            | 0.68                | 1.27           | 0.79                | 6.46               | 2.16                |
|                              | Disadvantaged non-Dalit | 0.51            | 0.30                | 0.09           | 0.21                | 2.65               | 1.09                |
|                              | Disadvantaged Janajatis | 0.68            | 0.74                | 0.43           | 0.59                | 2.41               | 2.12                |
|                              | Religious minority      | 0.90            | 0.03                | -0.26          | 0.20                | 3.58               | 1.34                |
|                              | Advantaged Janajatis    | -0.21           | 0.30                | -0.44          | 0.77                | -0.53              | 0.91                |
|                              | Upper Caste             | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | Interaction (p)         | <0.001          | <0.001              | <0.001         | <0.001              | <0.001             | <0.001 <sup>†</sup> |
| Residency                    | Urban                   | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | Rural                   | 0.87            | -0.69               | 0.92           | -0.33               | 2.05               | -2.58               |
|                              | Interaction (p)         | ns              | <0.001              | ns             | 0.002*              | 0.001              | <0.001              |
| Dependency ratio             | <1                      | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | ≥1                      | 2.12            | 1.65                | 1.71           | 1.33                | 5.13               | 3.48                |
|                              | Interaction (p)         | ns              | <0.001 <sup>†</sup> | ns             | <0.001 <sup>†</sup> | ns                 | <0.001 <sup>†</sup> |
| Loans                        | None                    | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | Yes                     | 0.20            | 0.07                | 0.15           | 0.02                | 0.54               | 0.29                |
|                              | Interaction (p)         | ns              | 0.037*              | ns             | ns                  | 0.012*             | <0.001              |
| Migration                    | Non                     | 0.82            | 0.38                | 0.96           | 0.19                | 0.43               | 0.17                |
|                              | Within Nepal            | -0.16           | 0.31                | 0.20           | 0.10                | -2.33              | 0.27                |
|                              | From abroad             | 0               | 0                   | 0              | 0                   | 0                  | 0                   |
|                              | Interaction (p)         | ns              | 0.004*              | ns             | ns                  | 0.003*             | <0.001              |
| Land owned                   | None                    | 0.48            | 0.86                | 0.05           | 0.48                | 1.87               | 2.79                |
|                              | 0.2 ha                  | 1.36            | 0.80                | 0.93           | 0.53                | 3.76               | 2.67                |
|                              | 0.2-1.0 ha              | 0.93            | 0.42                | 0.78           | 0.34                | 2.38               | 1.19                |
|                              | 1.01+ ha                | 0               | 0                   | 0              | 0                   | 0                  | 0                   |

| Indicator | Categories      | Total poor only |            | Food poor only |            | Non-food poor only |            |
|-----------|-----------------|-----------------|------------|----------------|------------|--------------------|------------|
|           |                 | Analysis 1      | Analysis 2 | Analysis 1     | Analysis 2 | Analysis 1         | Analysis 2 |
|           | Interaction (p) | ns              | <0.001     | ns             | ns         | 0.011*             | <0.001     |
| Region    | Eastern         | -2.07           | -1.49      | -1.99          | -1.41      | -3.67              | -2.07      |
|           | Central         | -1.61           | -0.70      | -1.43          | -0.58      | -4.27              | -1.38      |
|           | Western         | -1.88           | -0.89      | -1.75          | -1.04      | -4.58              | -1.16      |
|           | Mid-West        | -0.72           | -0.92      | -0.56          | -0.54      | -1.21              | -2.00      |
|           | Far-West        | 0               | 0          | 0              | 0          | 0                  | 0          |
|           | Interaction (p) | <0.001          | <0.001     | 0.008*         | <0.001     | <0.001             | <0.001     |

\* not significant after correction for multiple testing (Bonferroni correction), † effect size > 0.1

**Table 6.11: Changes in total poor, food poor and non-food percentages in NLSS II and NLSS III; panel analyses**

| Poverty          | Not poor II & III | Not poor II/Poor III (worse) | Poor II/Not Poor III (better) | Poor II & III | Total Poor II | Total Poor III | p*    | Change in % poor Between II to III<br>+ = worse<br>- = better |
|------------------|-------------------|------------------------------|-------------------------------|---------------|---------------|----------------|-------|---|
| Total poverty    | 70.3              | 9.4                          | 13.3                          | 6.9           | 20.2          | 16.3           | ns    | -3.9  |
| Food poverty     | 68.5              | 8.5                          | 14.7                          | 8.3           | 23.0          | 16.8           | 0.009 | -6.2  |
| Non-food poverty | 58.9              | 15.6                         | 13.8                          | 11.7          | 25.5          | 27.4           | ns    | +1.9  |

\* McNemar paired test

**Table 6.12 Mean Poverty Gap index and Squared Poverty Gap Index in NLSS II and NLSS III; panel analyses**

| Region | Overall poverty |          |      | Food poverty |          |       | Non-food poverty |          |      |
|--------|-----------------|----------|------|--------------|----------|-------|------------------|----------|------|
|        | NLSS II         | NLSS III | p    | NLSS II      | NLSS III | p     | NLSS II          | NLSS III | p    |
| Total  | 4.12            | 3.42     | ns   | 4.86         | 3.46     | 0.024 | 7.85             | 8.31     | ns   |
| SPGI   | Overall poverty |          |      | Food poverty |          |       | Non-food poverty |          |      |
|        | Total           | 1.30     | 1.09 | ns           | 1.49     | 1.06  | ns               | 3.43     | 3.61 |

**Table 6.13 Comparison of changes (%) in total poor, food poor and non-food in cross-sectional and panel surveys between NLSS II and NLSS III**

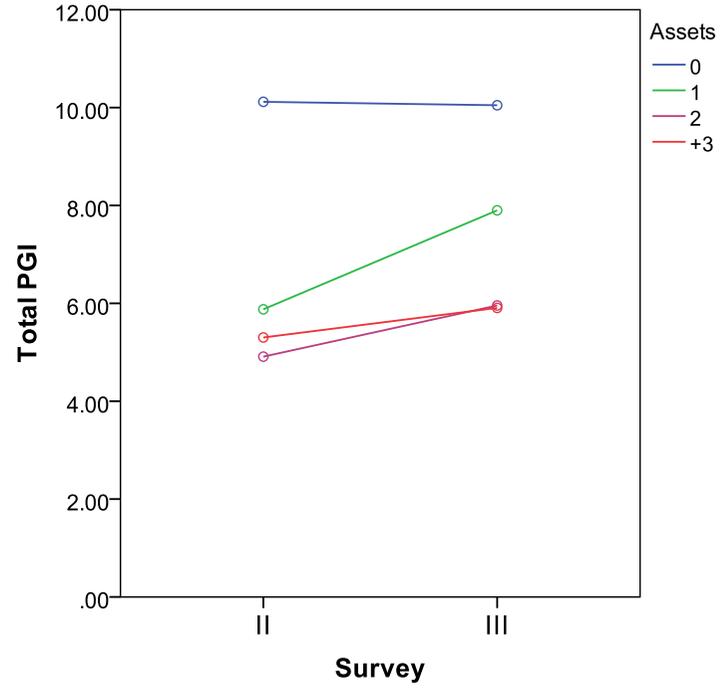
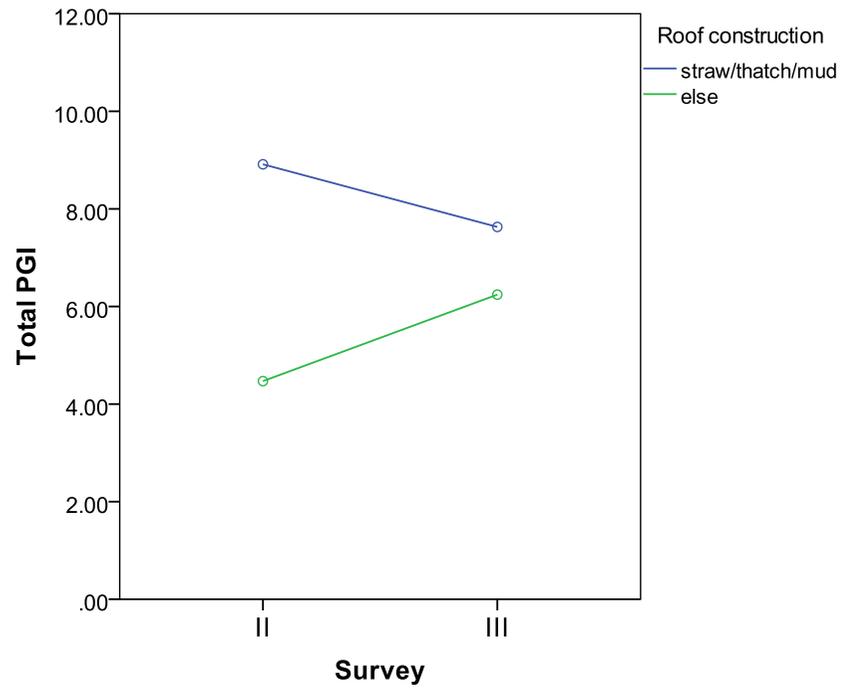
| Region | Overall poor    |      |        |       |      |        | Food poor       |      |        |       |      |        | Non-food poor   |      |        |       |      |        |
|--------|-----------------|------|--------|-------|------|--------|-----------------|------|--------|-------|------|--------|-----------------|------|--------|-------|------|--------|
|        | Cross-sectional |      |        | Panel |      |        | Cross-sectional |      |        | Panel |      |        | Cross-sectional |      |        | Panel |      |        |
|        | II              | III  | change | II    | III  | change | II              | III  | change | II    | III  | change | II              | III  | change | II    | III  | change |
| Total  | 23.2            | 18.5 | -4.7   | 20.2  | 16.3 | -3.9   | 25.1            | 17.8 | -7.3   | 23.0  | 16.8 | -6.2   | 28.8            | 27.6 | -1.2   | 25.5  | 27.4 | +1.9   |

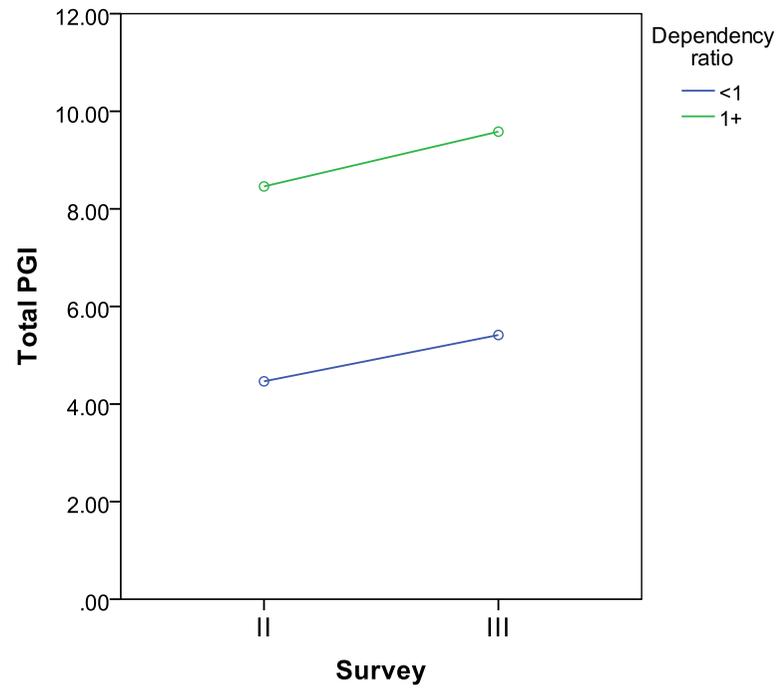
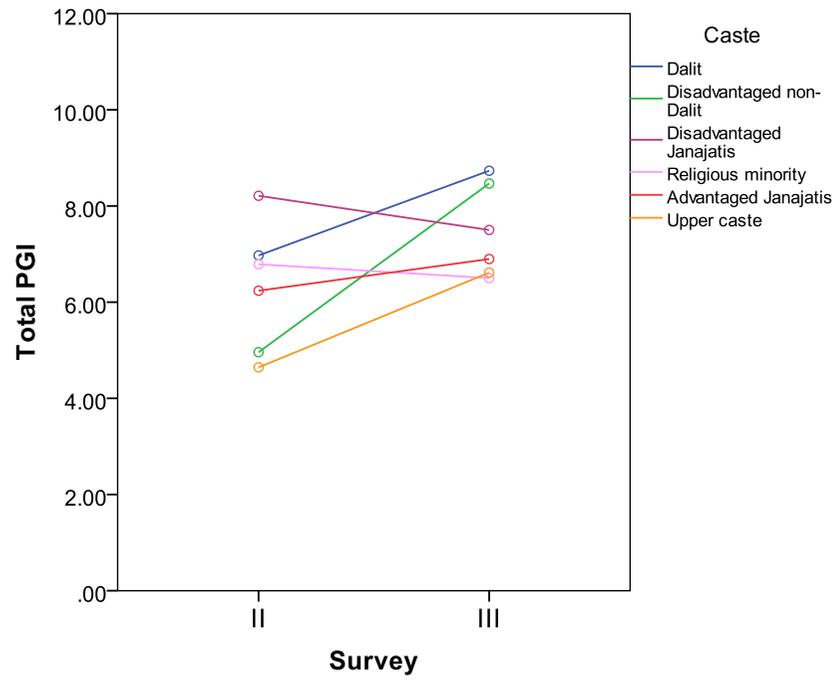
Change + = worse, - = better

**Table 6.14 Comparison of changes (mean) in PGIs and SPGIs in cross-sectional and panel surveys between NLSS II and NLSS III**

| Region      | Overall poor    |          |        |          |          |        | Food poor       |          |        |          |          |        | Non-food poor   |          |        |          |          |        |
|-------------|-----------------|----------|--------|----------|----------|--------|-----------------|----------|--------|----------|----------|--------|-----------------|----------|--------|----------|----------|--------|
|             | Cross-sectional |          |        | Panel    |          |        | Cross-sectional |          |        | Panel    |          |        | Cross-sectional |          |        | Panel    |          |        |
|             | II              | III      | change | II       | III      | change | II              | III      | change | II       | III      | change | II              | III      | change | II       | III      | Change |
| <b>PGI</b>  |                 |          |        |          |          |        |                 |          |        |          |          |        |                 |          |        |          |          |        |
| Total       | 5.5<br>1        | 3.9<br>6 | -1.55  | 4.1<br>2 | 3.4<br>2 | -0.70  | 5.4<br>2        | 3.8<br>5 | -1.57  | 4.8<br>6 | 3.4<br>6 | -1.40  | 11.1<br>7       | 8.9<br>6 | -2.21  | 7.8<br>5 | 8.3<br>1 | +0.46  |
| <b>SPGI</b> |                 |          |        |          |          |        |                 |          |        |          |          |        |                 |          |        |          |          |        |
| Total       | 1.9<br>4        | 1.3<br>2 | -0.62  | 1.3<br>0 | 1.0<br>9 | -0.21  | 1.7<br>6        | 1.3<br>0 | -0.46  | 1.4<br>9 | 1.0<br>6 | -0.43  | 5.62            | 4.0<br>2 | -1.60  | 3.4<br>3 | 3.6<br>1 | +0.18  |

Figure 6.1: Total Poverty Gap Index differences between NLSS II and NLSS III





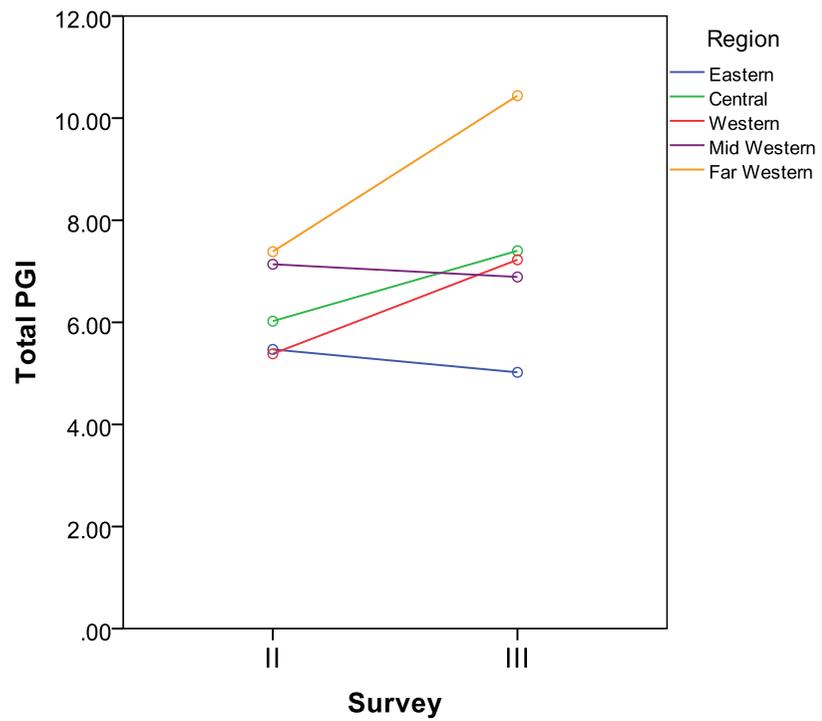


Figure 6.2: Food Poverty Gap Index differences between NLSS II and NLSS III

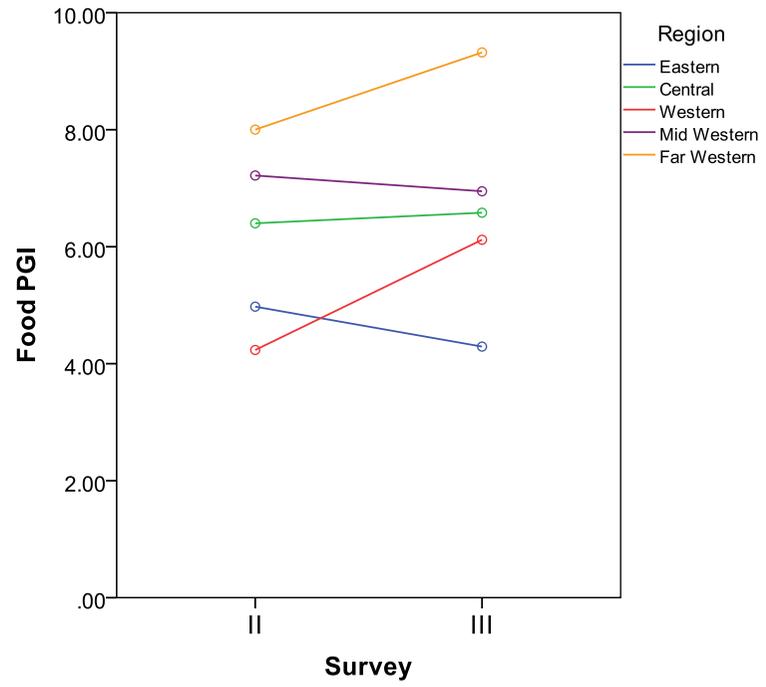
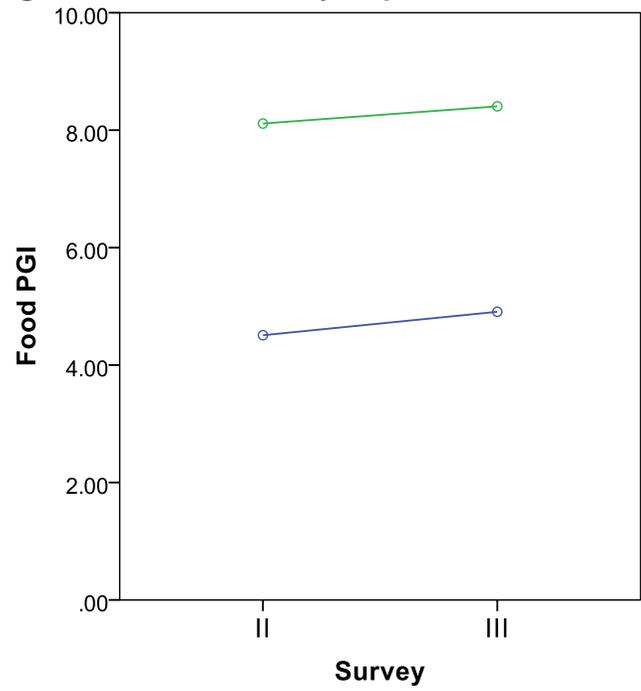
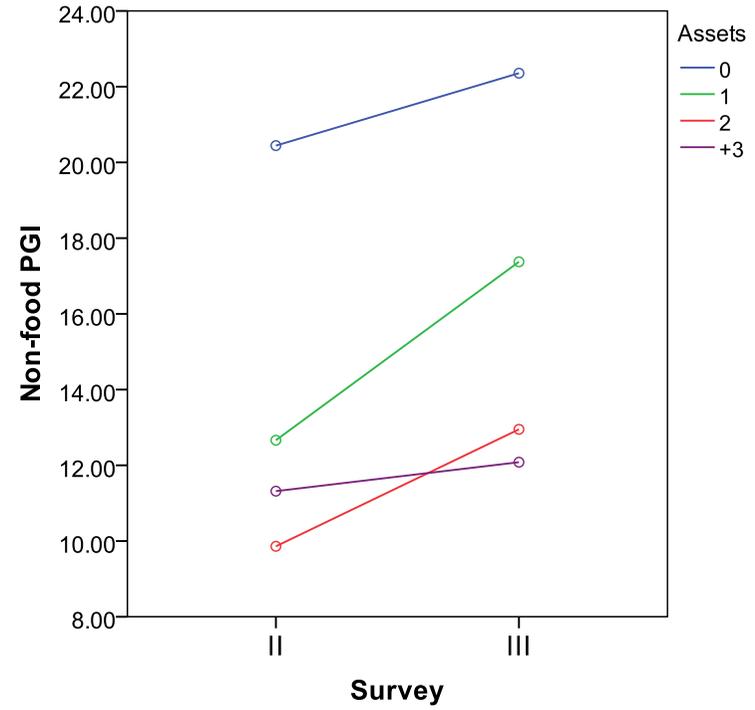
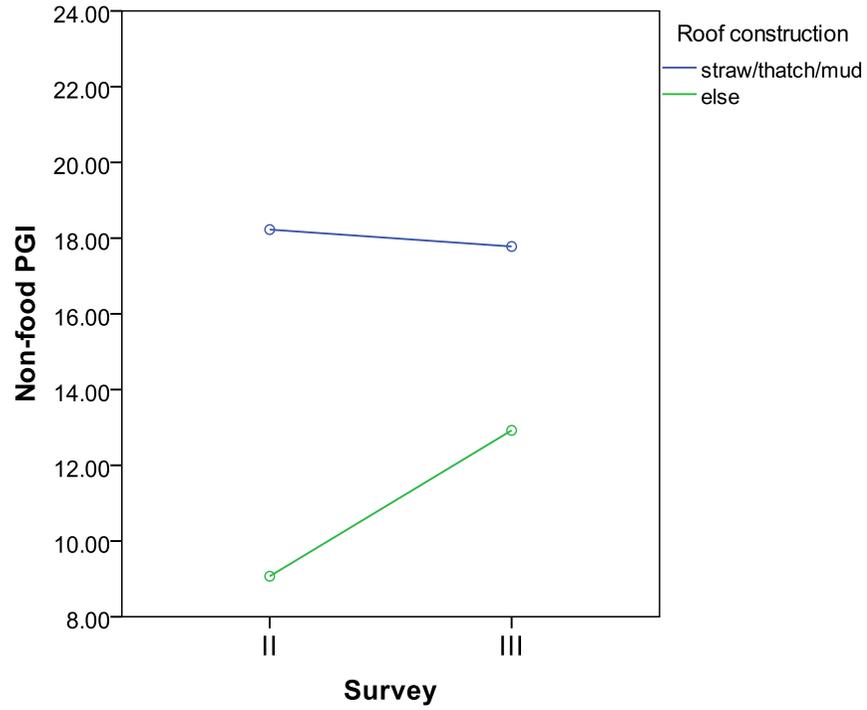


Figure 6.3: Non-food Poverty Gap Index differences between NLSS II and NLSS III



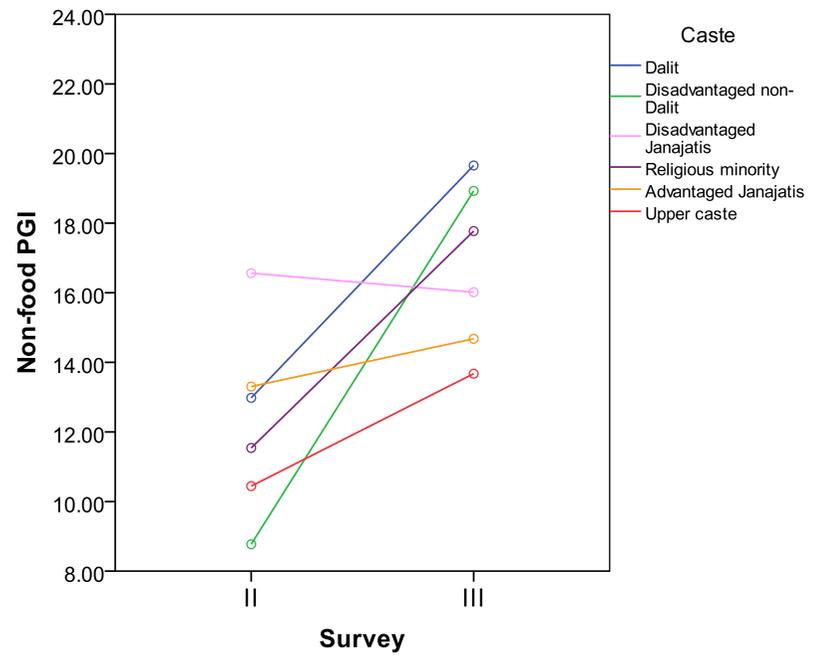
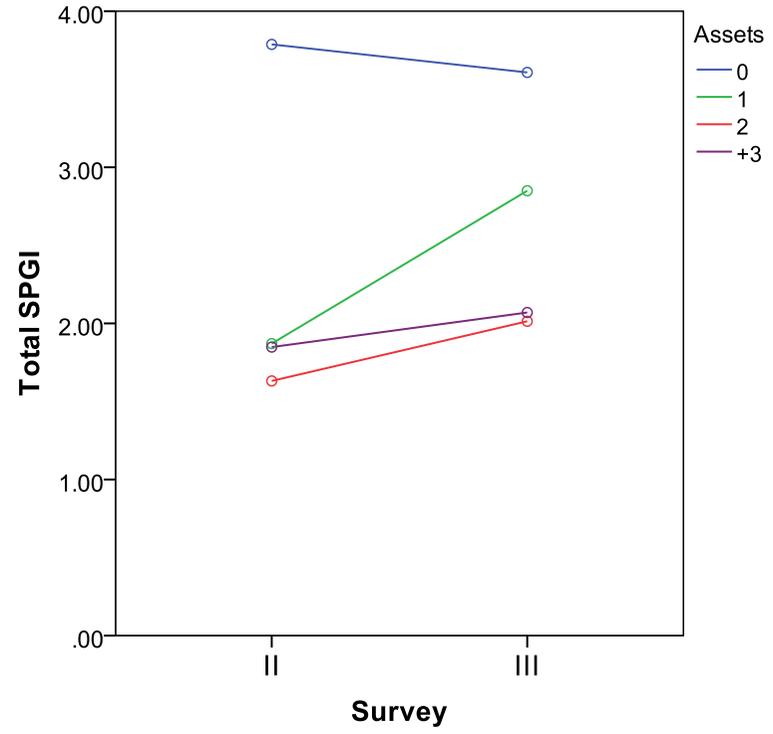
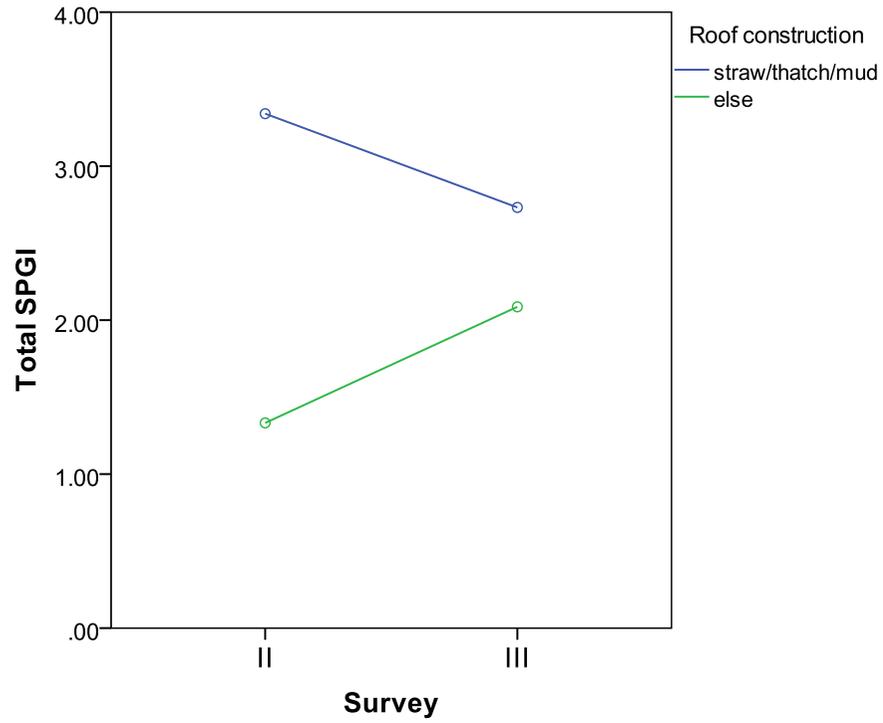


Figure 6.4 Total Squared Poverty Gap Index differences between NLSS II and NLSS III



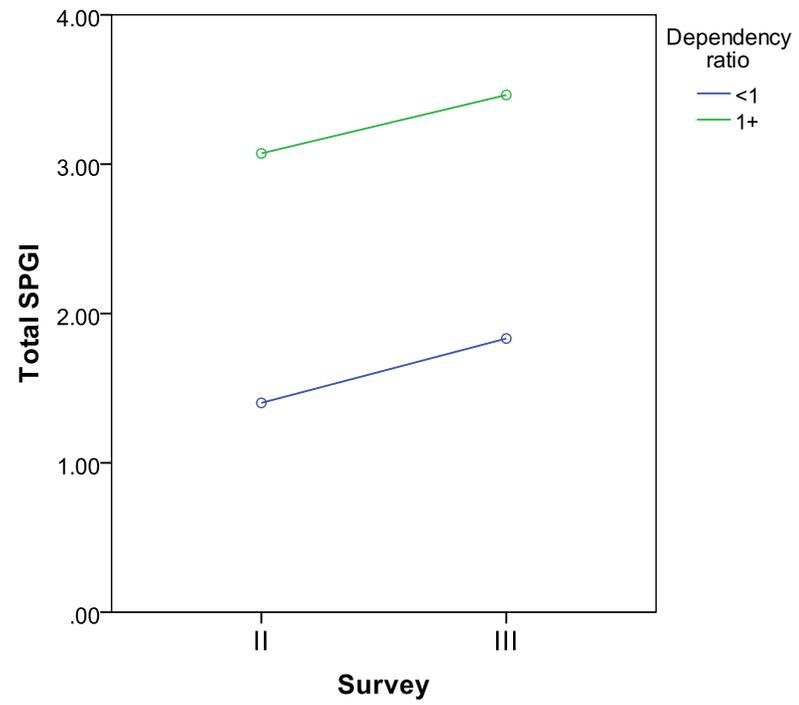


Figure 6.5 Food Squared Poverty Gap Index differences between NLSS II and NLSS III

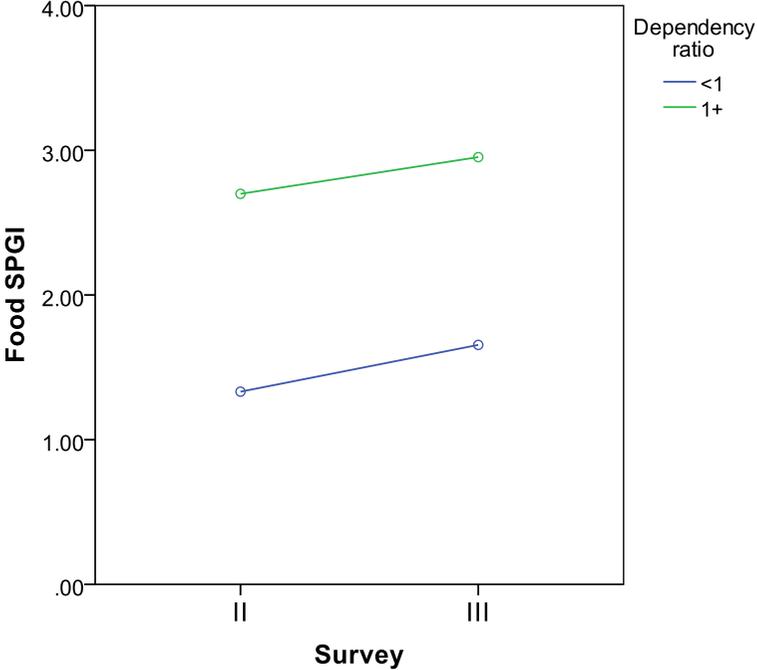
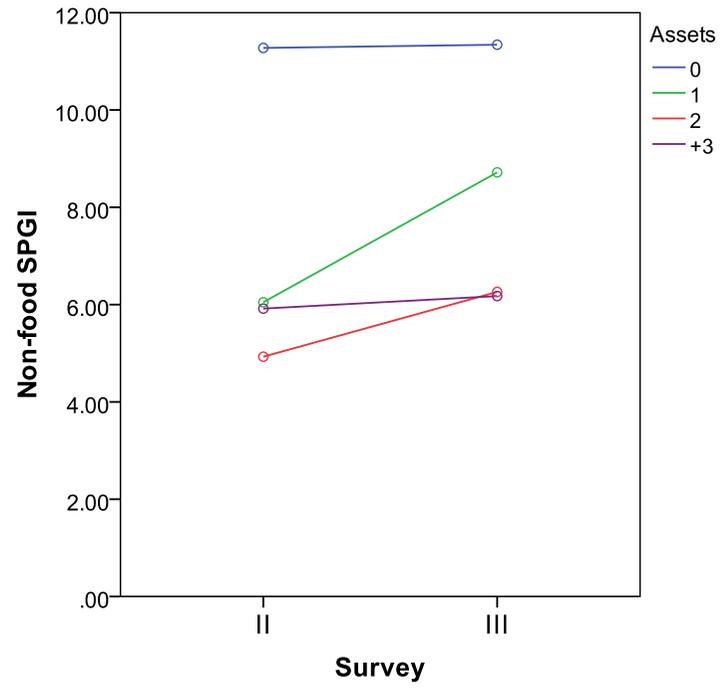
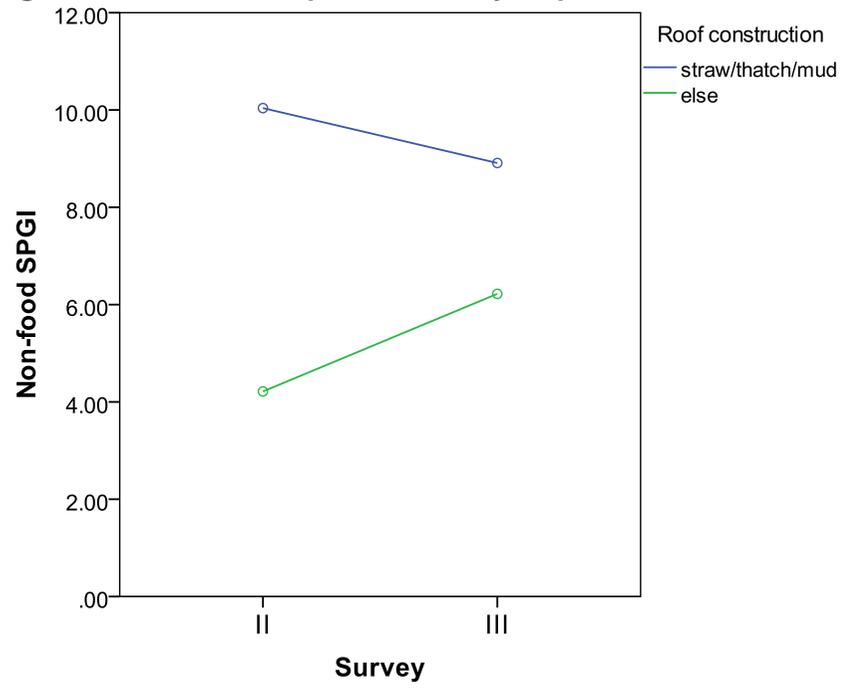
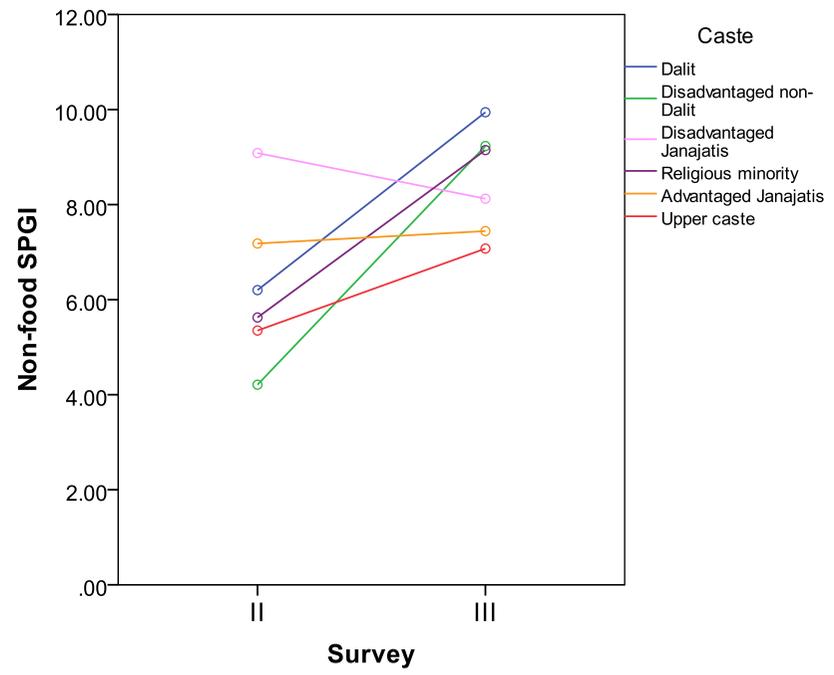
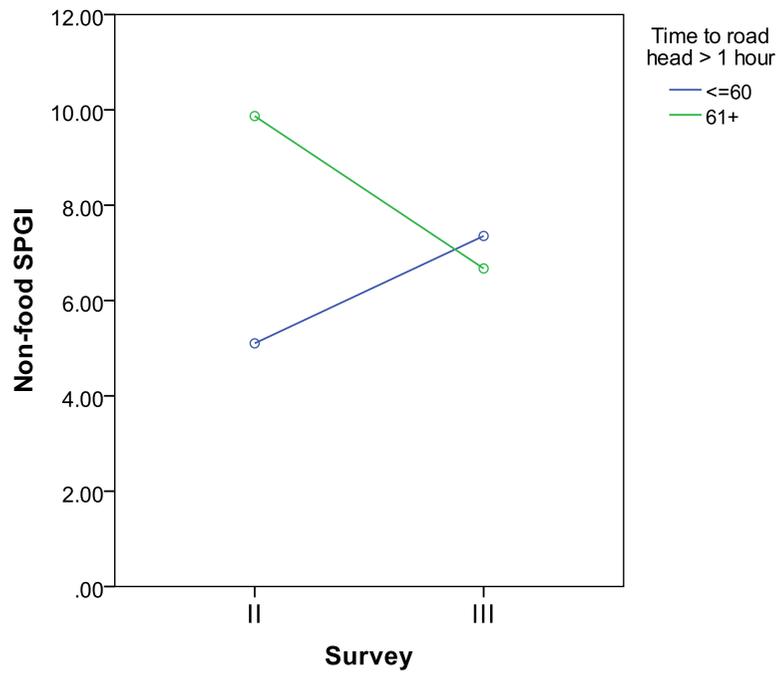
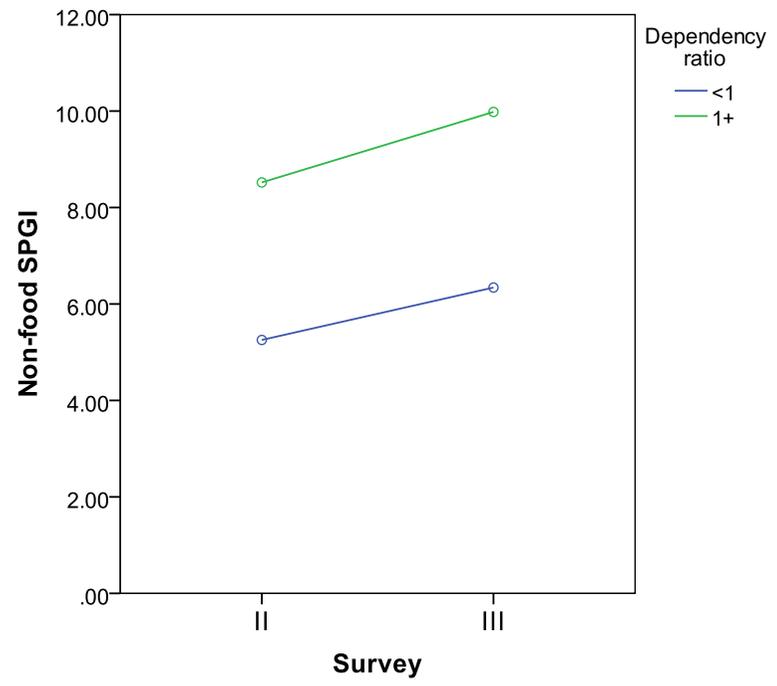


Figure 6.6 Non-food Squared Poverty Gap Index differences between NLSS II & NLSS III







**Table 6.15: District level comparisons up to 2004 and 2010**

| District    | Zone     | Ranking    |       | Composite index score |      |
|-------------|----------|------------|-------|-----------------------|------|
|             |          | Up to 2004 | 2010  | Up to 2004            | 2010 |
|             |          |            | Total |                       |      |
| Baitadi     | Mahakali | 10         | 5     | 11                    | 5    |
| Bajhang     | Seti     | 13         | 17    | 15                    | 18   |
| Bajura      | Seti     | 20         | 23    | 19                    | 23   |
| Banke       | Bheri    | 1          | 4     | 1                     | 3    |
| Bardiya     | Bheri    | 7          | 7     | 7                     | 13   |
| Dandeldhura | Mahakali | 11         | 13    | 10                    | 11   |
| Dailekh     | Bheri    | 17         | 10.5  | 16                    | 8    |
| Dang        | Rapti    | 3          | 8.5   | 2                     | 7    |
| Darchula    | Mahakali | 8          | 10.5  | 8                     | 12   |
| Dolpa       | Karnali  | 19         | 21    | 22                    | 17   |
| Doti        | Seti     | 12         | 18    | 12                    | 20   |
| Humla       | Karnali  | 22         | 20    | 23                    | 19   |
| Jajarkot    | Bheri    | 14         | 14    | 13                    | 14   |
| Jumla       | Karnali  | 16         | 19    | 17                    | 21   |
| Kailali     | Seti     | 6          | 3     | 6                     | 4    |
| Kalikot     | Karnali  | 21         | 15    | 21                    | 16   |
| Kanchanpur  | Mahakali | 2          | 1     | 3                     | 2    |
| Mugu        | Karnali  | 23         | 22    | 20                    | 22   |
| Pyuthan     | Rapti    | 4          | 6     | 5                     | 6    |
| Rolpa       | Rapti    | 15         | 16    | 14                    | 15   |
| Rukum       | Rapti    | 18         | 8.5   | 18                    | 9    |
| Salyan      | Rapti    | 9          | 12    | 9                     | 10   |
| Surket      | Bheri    | 5          | 2     | 4                     | 5    |

## Report 7 – Key indicators in determining chronic poverty and vulnerability with special reference to the Mid and Far-West Regions

### 7.1 Introduction

The Government of Nepal reports on poverty and trends in poverty using NLSS mainly refer to a single poverty line (total or overall poverty). However three poverty lines have been created the total (overall) poverty line, the food poverty line and the non-food poverty line and households can be classified as poor or non-poor with reference to each of these lines independently. The initial analyses presented here examine the associations of total (overall) poor, food poor and non-food poor households with 23 chronic poverty and vulnerability indicators which were measured in both NLSS II and NLSS III.

A household might be food poor, but if its expenditure on non-food items was much higher than the non-food poverty line, then it would not be classified as non-food poor and overall may not be poor (total poor). For example, suppose the poverty line was 10000 NRs, the food poverty line was 7,000 NRs and non-food poverty line was 3,000 NRs. If the household expenditure on food is 6000 NRs then the household would be classified as food poor. If its non-food expenditure was 5000 NRs it would be classified as being not non-food poor and as its total expenditure is 11,000 NRs it would not be classified as total poor.

In order to accommodate the different types of poverty a new index of food and non-food poverty has been created in which households have been classified as neither food or non-food poor, food poor only, non-food poor only, and both food and non-food poor. In NLSS II 61% of households were not poor increasing to 66.2% in NLSS III. Figures 7.1 and 7.2 present the four categories of this index by region and it is clear in NLSS II that the Far-West had the worst food poverty only, while the Mid-West had the worst non-food poverty only; both regions had high levels of both food and non-food poverty. In NLSS III the pattern changes and the Mid- and Far-West regions had about twice as much food poverty only and both food and non-food poverty as the other regions. In particular nearly a quarter of all Far-West households had both food and non-food poverty in NLSS III. The relationship between this new index and the 23 chronic poverty and vulnerability indicators was also examined.

The association between the extent of poverty (as defined by the poverty gap index, PGI) was then examined in relation to the 23 indicators in NLSS II and NLSS III separately. Three indices were used, total (overall) poverty gap, food poverty gap and non-food poverty gap indices. The associations between the squared poverty gap indices (SPGI, measures of inequality among the poor) and the 23 indicators were also examined.

## 7.2 Results

### 7.2.1 Relationship of poor, food-poor and non-food poor categories with the 23 chronic poverty and vulnerability indicators

Tables 7.1 and 7.2 presents the association between the chronic poverty and vulnerability indicators and the households classified as total poor, food poor and non-food poor in NLSS II and NLSS III respectively. Analysis 1 shows the percentages of households who were poor, food poor and non-food poor in relation to each indicator. There were significant associations between 22 of the 23 indicators in both NLSS II and NLSS III with total poor (all but marital status in NLSS II and gender of household head in NLSS III), food poor with 22 of the 23 indicators (all but gender of household head in both surveys) and non-food poor associated with all 23 indicators in both surveys. For all indicators a worse condition, e.g. sanitation not meeting the MDG, was more strongly associated with a total poor household (36.2% and 27.9% in NLSS II and NLSS III respectively) compared with only 7.4% and 6.1%, respectively in households in which sanitation met the MDG (Figure 7.3).

Households were not consistent across all of these 23 indicators; for example not all households that meet the sanitation MDG also meet the drinking water MDG. This heterogeneity is illustrated in the table below which shows the four possibilities for meeting or not meeting the MDG for sanitation and drinking water based on the NLSS II survey; 13.3% of households do not meet either the sanitation or drinking water MDG, while 40.8% of households meet both criteria. 41.4% of households meet the drinking water MDG but not the sanitation MDG while 4.5% meet the sanitation MDG but not the drinking water MDG.

|                |         | Drinking water (%) |         | Total |
|----------------|---------|--------------------|---------|-------|
|                |         | No MDG             | Yes MDG |       |
| Sanitation (%) | No MDG  | 13.3               | 41.4    | 54.7  |
|                | Yes MDG | 4.5                | 40.8    | 45.3  |
|                | Total   | 17.8               | 82.2    | 100.0 |

Analysis 2 in Tables 7.1 and 7.2 takes into account the indicator heterogeneity between households. These analyses present the results of sequential binary logistic regression analyses in which the effects of all the other indicators are removed before testing for the indicator of interest. For example in NLSS II households with sanitation not meeting the MDG were 1.94 times more likely (odds ratio) to be total poor compared with households whose sanitation met the MDG after taking into account all the other 22 indicators. Such households were 1.68 times more likely to be food poor and 1.66 times more likely to be non-food poor than households who met the sanitation MDG (Figure 7.4).

As a large number of tests have been undertaken there is an increased risk of a Type I error (one in which the null hypothesis is incorrectly rejected). To overcome this type of error a Bonferroni correction was used in which the usual cut-off for significance ( $p=0.05$ ) has been lowered to take into account the number of tests undertaken. As 23 indicators were used the  $p$  value for a 'significant' result becomes  $0.05/23 = 0.0022$ .

Table 7.3 summarises which indicators were significant in both NLSS II and III and there is considerable consistency between surveys as to which variables are significant. Five variables, sanitation, total number of assets, caste, dependency ratio and region were

significant for all three measures of poverty as well as in both surveys. Figures 7.3 to 7.12 present the percentages and odds ratios for total poor, food poor and non-food poor for sanitation, total number of assets, caste, dependency ratio and region. Two variables were significant on 5 of the 6, adult illiteracy status and roof construction.

An attempt was also made to determine the order of importance of the indicators in separately predicting the three categories of total poor, food poor and non-food poor. The results of these stepwise binary logistic regression analyses are presented in Tables 7.4 and 7.5 for NLSS II and III, respectively. They show (step in the tables) the order, based on significance level, in which variables were added and the analyses stop when no further indicator is significant. Consequently the number of indicators included in the analyses varies between surveys and by poverty line.

Table 7.4 shows that in NLSS II the best predictor of total poor was electricity (yes or no for electrical supply), followed by total number of assets, dependency ratio, sanitation and caste. In NLSS III total number of assets was the best predictor followed by dependency ratio, sanitation, region and caste. When only the first five indicators were considered there was close agreement between NLSS II and III (Table 7.5). For total poor four of the five best indicators were the same in NLSS II and III (namely, total number of assets, dependency ratio, sanitation and caste), for food poor only all five indicators were the same while for non-food poor three of the five were the same (total number of assets, dependency ratio and caste) between surveys. Within each survey there was also consistency; in NLSS II caste, dependency ratio and total number of assets were in the top five predictors for all three poverty measures. In NLSS III the top five indicators were the same (although in different order) for all three poverty measures.

These analyses also reveal what percentages of households were correctly classified as poor or non-poor (lower section of Tables 7.4 and 7.5). When all the indicators were used poor households were better predicted in NLSS III than NLSS II; 44.6% of NLSS III households were correctly predicted as total poor (33.3% in NLSS II), 33.% of food poor (14.0% in NLSS II) and 63.4% of non-food poor (55.1% in NLSS II). When only the significant indicators were considered (those from the stepwise binary logistic regression) the percentages changed slightly but NLSS III poor households were more correctly predicted than NLSS II households. In all the analyses the indicators were better at predicting non-food poor households and the difference in prediction was greatest for food poor only in both surveys.

### **7.2.2 Relationship between the new index, food poor only, non-food poor only and both food and non-food poor with the 23 chronic poverty and vulnerability indicators**

Tables 7.6 and 7.7 present the results of the analyses using the new index of neither food or non-food poor, food poor only, non-food poor only and both food and non-food poor. Analysis 1 simply presents a series of chi-square tests to see if there is heterogeneity between the four categories (the tables omit the neither food or non-food poor category). Only gender of household head and marital status are insignificant in NLSS II (after applying the Bonferroni correction) while in NLSS III only loans are insignificant (after applying the Bonferroni correction). Inspection of Tables 7.6 and 7.7 indicate that most of the

heterogeneity is due to differences in non-food poor only and both food and non-food poor categories and not to food poor only. For example sanitation in NLSS II, the difference in percentage between households yes MDG and no MDG for food poor only is 3.9% (7.1% vs. 11.0%, respectively), while for non-food poor the difference is 13.8% (6.4% vs. 20.2%, respectively) and for both food and non-food poor is 19.8% (5.0% vs. 24.8%). Figures 7.13 to 7.17 present the percentages of food poor only, non-food poor only and both food and non-food poor for sanitation, total number of assets, caste, dependency ratio and region.

Analysis 2 presents the results of multinomial logistic regression in which all the other indicators were entered into the model before the indicator of interest. In NLSS II, 13 of the 23 indicators remain significant after Bonferroni correction while for NLSS III, 14 indicators remain significant after Bonferroni correction. Ten of the significant variables were common to both surveys, namely, adult illiteracy, electricity, sanitation, wall and roof construction, total number of assets, gender of household head, caste, dependency ratio and region.

Stepwise multinomial logistic regression analyses were used to determine the order of importance (significance) in predicting the new index for NLSS II and NLSS III surveys. The results are summarised in Table 7.8 and show that total number of assets was the most significant predictor in both surveys. Of the top five indicators, four were common to both surveys (total number of assets, dependency ratio, caste and region).

When all the indicators were used prediction of both food and non-food poor was highest in both surveys (50.1% and 31.2% in NLSS II and NLSS III, respectively) while food poor only was either poorly predicted, 2.1% in NLSS II, or not at all in NLSS III. Just using the significant indicators from the stepwise analyses gave similar results.

### **7.2.3 Relationship of poverty gap (PGI) and squared poverty gap (SPGI) indices with the 23 chronic poverty and vulnerability indicators**

Tables 7.9 and 7.10 present the mean poverty gap indices for total PGI, food PGI and non-food PGI in both surveys. Analysis 1 presents the simple difference in means, either using t-test for variables with two indicator categories (e.g. sanitation) or oneway analysis of variance for indicators with multiple categories (e.g. total number of assets). For all indicators in both surveys a worse condition, e.g. sanitation not meeting the MDG, had higher (worse) mean gap indices than households in which sanitation met the MDG. For example in NLSS II the mean total PGI was 6.63 for households not meeting the sanitation MDG while the mean was only 1.18 in households meeting the sanitation MDG. Of the 23 indicators, 19 were significant in NLSS II for total PGI after Bonferroni correction (child mortality, marital status and residency were not significant) while for NLSS III 21 were significant (all except gender of household head and loans). For food PGI in NLSS II the same three indicators were not significant while for NLSS III marital status was also not significant. For non-food PGI only gender of household head and marital status were not significant while only loans was not significant for NLSS III. Figures 7.18 to 7.22 present the mean differences for total PGI, food PGI and non-food PGI for sanitation, total number of assets, caste, dependency ratio, and region.

Analysis 2 presents the results of sequential multiple regression analyses which determine whether significant differences remain for an indicator after taking into account all the other

variables. In these analyses one category of an indicator is the reference category (mean set to 0). In most of the analyses presented in Tables 7.11 and 7.12 the 'non-poor' category has been set as the reference e.g. for sanitation Yes MDG is the reference value. For total PGI in NLSS II, only ten of the variables remained significant, while in NLSS III, eleven variables remained significant. Of the significant variables eight were common to both surveys namely, adult illiteracy, sanitation, roof construction, total number of assets, gender of household head, caste, dependency ratio and region. There were fewer significant indicators for food PGI, nine significant for NLSS II (adult illiteracy, child immunisation, sanitation, roof construction, total number of assets, time to health post, caste, dependency ratio and region) but only four significant indicators for NLSS III (electricity, total number of assets, dependency ratio and region); total number of assets, dependency ratio and region were significant in both surveys. For non-food PGI there were eleven variables in both surveys which were significant of which eight were common (adult illiteracy, electricity, sanitation, roof construction, total number of assets, gender of household head, caste and dependency ratio). Figures 7.23 to 7.27 present the mean differences for total PGI, food PGI and non-food PGI for sanitation, total number of assets, caste, dependency ratio, and region in relation to the reference value.

Stepwise multiple regression analyses were used to determine the order of importance (significance) in predicting total PGI, food PGI and non-food PGI for both NLSS II and NLSS III surveys. The results are summarised in Tables 7.11 and 7.12. Dependency ratio and total number of assets were the most important indicators of total PGI and non-food PGI in both surveys. Four of the top five indicators for food PGI were the same in both surveys (dependency ratio, caste, region and total number of assets).

When all indicators were used most variation was explained for non-food PGI in both surveys (33% and 30% in NLSS II and NLSS III, respectively) followed by total PGI (22% and 18% in NLSS II and NLSS III, respectively) with the least for food PGI (15% and 11% in NLSS II and NLSS III, respectively). When the best five indicators were used non-food PGI had the highest coefficient of determination followed by total PGI and then food PGI.

Tables 7.13 and 7.14 present the mean squared poverty gap indices for total SPGI, food SPGI and non-food SPGI in both surveys. Analysis 1 presents the simple difference in means, either using t-test for variables with two indicator categories (e.g. sanitation) or oneway analysis of variance for indicators with multiple categories (e.g. total number of assets). For all indicators in both surveys a worse condition, e.g. sanitation not meeting the MDG, had higher (worse) squared mean gap indices than households in which sanitation met the MDG. For example in NLSS II the mean total PSGI was 3.12 for households not meeting the sanitation MDG while the mean was only 0.51 in households meeting the sanitation MDG. Of the 23 indicators, 21 were significant in NLSS II for total PGI after Bonferroni correction (child mortality and gender of household head were not significant) while for NLSS III 21 were significant (all except gender of household head and loans). For food PGI in NLSS II the same two indicators were not significant as well as marital status and residency while for NLSS III the three variables not significant were gender of household head, marital status and loans. For non-food PGI child mortality, gender of household head and marital status were not significant in NLSS II while gender of household head and loans was not significant for NLSS III.

Analysis 2 presents the results of sequential multiple regression analyses which determine whether significant differences remain for an indicator after taking into account all the other variables. For total SPGI in both surveys only nine of the variables remained significant. Of these, four indicators were common to both surveys namely, adult illiteracy, total number of assets, caste and dependency ratio. There were fewer significant indicators for food SPGI, seven significant for NLSS II (adult illiteracy, child immunisation, total number of assets, time to health post, caste, dependency ratio and region) but only four significant indicators for NLSS III (electricity, total number of assets, dependency ratio and region); total number of assets, dependency ratio and region were significant in both surveys. For non-food SPGI there were twelve significant indicators in NLSS II and thirteen in NLSS III of which nine were common to both surveys (adult illiteracy, electricity, sanitation, roof construction, total number of assets, gender of household head, caste, dependency ratio and region).

Stepwise multiple regression analyses were used to determine the order of importance (significance) in predicting total SPGI, food SPGI and non-food SPGI for both NLSS II and NLSS III surveys. The results are summarised in Tables 7.15 and 7.16. Dependency ratio, total number of assets, adult illiteracy and roof construction were four of the five most important indicators of total SPGI in both surveys; dependency ratio and total number of assets were two of the five best common indicators for food SPGI in both surveys. Three of the top five indicators for non-food SPGI were the same in both surveys (dependency ratio, total number of assets and roof construction).

When all indicators were used most variation was explained for non-food SPGI in both surveys (26% and 23% in NLSS II and NLSS III, respectively) followed total SPGI (16% and 12% in NLSS II and NLSS III, respectively) with the least for food SPGI (10% and 7% in NLSS II and NLSS III, respectively). When the best five indicators were used non-food SPGI still had the highest coefficient of determination followed by total SPGI and then food SPGI.

#### **7.2.4 Regional Variation in the relationship of poor, food-poor and non-food poor categories with the 23 chronic poverty and vulnerability indicators**

Table 7.17 shows the order of importance of chronic poverty and vulnerability indicators in predicting total poor households in NLSS II. Dependency ratio and caste were important predictors of poor and non-poor households in all 5 regions, sanitation was an important predictor in 4 regions (all except Central); nearly two thirds of Mid-West poor households were predicted which is much higher than in other regions. For NLSS III (Table 7.18) dependency ratio, sanitation and total number of assets were important predictors of poor and non-poor households in all five regions, caste was an important predictor in four regions (all except Central) and close to 60% of Far-West poor households were correctly predicted.

For food poor (Tables 7.19 and 7.20) no indicator was an important predictor of food poor and non-poor households in all 5 regions; dependency ratio and adult illiteracy were important predictors in 4 regions (except Far-West and Eastern, respectively); about 45% of Mid-West and Far-West food poor households are correctly predicted, better than other regions. Dependency ratio was an important predictor of food poor and non-poor households in all 5 regions, sanitation and total number of assets were important predictors

in 4 regions (all except Mid-West and Far-West, respectively): only in the Far-West was food poor households predicted well.

In NLSS II Adult illiteracy was an important predictor of non-food poor households in all 5 regions; indicators important in 4 regions were total number of assets (except for Mid-West), roof construction (except Far-West), time to health centre (except Mid-West), dependency ratio (except Far-West) and gender of household head (except Far-West); non-food poor households were correctly predicted in all regions especially Mid-West (76.8%) and Eastern (71.0%) regions

In NLSS III the total number of assets, caste, dependency ratio, adult illiteracy and gender of household head were important predictors of non-food poor and non-poor households in all 5 regions; indicators important in 4 regions were roof construction (except Far-West), sanitation (except Western), land ownership (except Far-West) and cooking fuel (except Central); Far-West and Mid-West non-food poor households were very well predicted (70.3% and 68.3%, respectively).

For total and food PGI dependency ratio was a common indicator while adult illiteracy was a common indicator across all regions for non-food PGI (Tables 7.23 to 7 28).

### **7.3 Conclusions**

**7.3.1** Households in NLSS II and NLSS III surveys were initially assigned a binary status of poor or non-poor based on three separate GON poverty lines, the overall (total) poverty line, food poverty line and non-food poverty line.

**7.3.2** Separate analyses for each poverty line were undertaken to test which of 23 chronic poverty and vulnerability indicators common to both NLSS II and NLSS III surveys associated with poor and non-poor households.

**7.3.3** There was a very strong and consistent association over both surveys between chronic poverty and vulnerability indicators and households defined as poor, food poor and non-food poor.

**7.3.4** Of the 23 indicators, 22 indicators in both NLSS II (all except gender of household head) and NLSS III (all except marital status) showed highly significant associations with being poor. The percentage of households living in worse conditions was much higher in poor than non-poor households for all indicators.

**7.3.5** Being food poor associated significantly with 22 of the 23 indicators in both surveys (all but gender of the household head in both surveys) and non-food poor associated significantly with all 23 indicators. For all indicators the percentage of households with a worse condition e.g. sanitation not meeting the MDG, was much higher in poor than non-poor households.

**7.3.6** In NLSS II the best predictor of total poor was electrical supply (yes or no) followed by total number of assets, dependency ratio, sanitation and caste, In NLSS III the best

predictor was total number of assets followed by dependency ratio, sanitation, region and caste. So four of the five best indicators of total poor were the same in both surveys.

**7.3.7** The best five predictors of food poor were the same in both surveys, namely, sanitation, dependency ratio, total number of assets, caste and region although the order of importance varied between NLSS II and NLSS III.

**7.3.8** For non-food poor three of the best five indicators were the same in both surveys (total number of assets, dependency ratio and caste).

**7.3.9** Within NLSS III the top five indicators were the same for all three poverty measures, although in a different order, while in NLSS II three of the indicators (total number of assets, dependency ratio and caste) were in the top five indicators for all three poverty measures.

**7.3.10** The indicators were best able to predict non-food poor households in both NLSS II (63.4%) and NLSS III (55.1%), followed by total poor households (44.6% and 33.3% in NLSS II and NLSS III, respectively) and least able to predict food poor households (33.0% and 14.0% in NLSS II and III respectively).

**7.3.11** A new poverty index was created in which households were defined as neither food or non-food poor, food poor only, non-food poor only and both food and non-food poor. In NLSS II 9.3% of households were food poor only (6.3% in NLSS III), 13.9% were non-food poor only (16.1% in NLSS III) and 15.8% of households were both food and non-food poor (11.5% in NLSS III). Overall there was a reduction in poverty by 5.2% between NLSS II and NLSS III based on this new measure (neither food or non-food poor increased from 61.0% to 66.2% between surveys).

**7.3.12** In NLSS II all indicators except gender of household head and marital status and all but loans in NLSS III significantly associated with the new index. Most of the heterogeneity within each indicator was due to differences in non-food poor only and both food and non-food poor categories and not to differences in food poor only.

**7.3.13** Total number of assets was the best predictor of the new index in both surveys and of the top five indicators four were common to both surveys namely total number of assets, dependency ratio, caste and region. The indicators best predicted the both food and non-food poor category in both surveys (50.1% and 31.2% in NLSS II and NLSS III, respectively) while food poor only was either poorly predicted (2.1% in NLSS II) or not at all for NLSS III.

**7.3.14** Three poverty gap indices (PGI) and three squared poverty gap indices (SPGI) were computed for total poor, food poor and non-food poor. For all indicators in both surveys a worse condition was associated with a higher mean index. Of the 23 indicators, 20 were significant in NLSS II for total PGI (all except child mortality, marital status and residency) while for NLSS III 21 were significant for total PGI (except gender of head of household and loans). For food PGI in NLSS II the same two indicators were not significant as well as marital status and residency while for NLSS III the three variables not significant were gender of household head, marital status and loans. For non-food PGI child mortality,

gender of household head and marital status were not significant in NLSS II while gender of household head and loans were not significant for NLSS III.

**7.3.15** Dependency ratio and total number of assets were the most important indicators of total PGI and non-food PGI in both surveys. Four of the five best indicators for food PGI were the same in both surveys namely dependency ratio caste, region and total number of assets.

**7.3.16** Using all indicators in both surveys most variation was explained for non-food PGI (33% and 30% for NLSS II and NLSS III, respectively) followed by total PGI (22% and 18%, respectively) with the least for food PGI (15% and 11%, respectively).

**7.3.17** The squared poverty gap indices analyses revealed that dependency ratio, total number of assets, adult illiteracy and roof construction were four of the five most important indicators of total SPGI in both surveys. Dependency ratio and total number of assets were two of the five best common indicators for food SPGI in both surveys. Three of the best indicators of non-food SPGI were the same in both surveys (dependency ratio, total number of assets and roof construction).

**7.3.18** When all indicators were used most variation was explained for non-food SPGI in both surveys (26% and 23% in NLSS II and NLSSIII, respectively) followed total SPGI (16% and 12%, respectively) with the least for food SPGI (10% and 7%, respectively).

**7.3.19** There was some consistency across regions in which indicators best predicted poor, food poor and non-food poor households as well as PGI. Adult illiteracy, sanitation, caste, dependency ratio and total number of assets were important indicators.

Figure 7.1 Percentages of food poor, non-food poor and both food and non-food poor by region in NLSS II

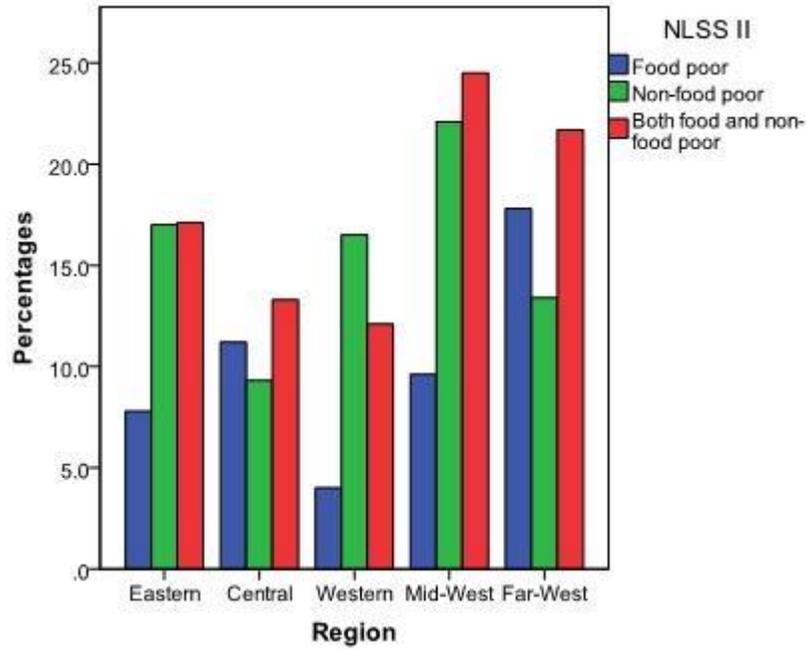
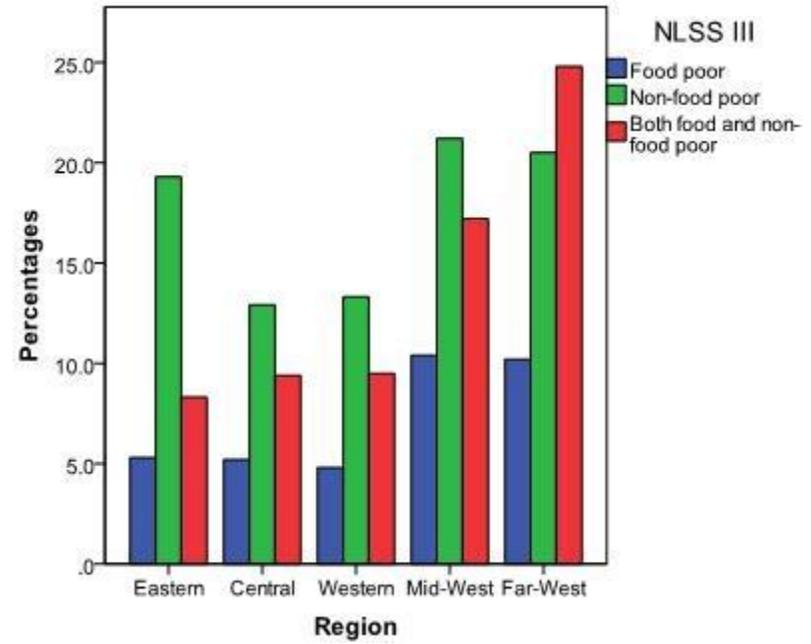


Figure 7.2 Percentages of food poor, non-food poor and both food and non-food poor by region in NLSS III



**Table 7.1: Relationship of poor, food poor and non-food poor households with chronic poverty and vulnerability indicators NLSS II**

| Indicator             | Categories  | Total poor |        |            |        | Food poor  |        |            |        | Non-food poor |        |            |        |
|-----------------------|-------------|------------|--------|------------|--------|------------|--------|------------|--------|---------------|--------|------------|--------|
|                       |             | Analysis 1 |        | Analysis 2 |        | Analysis 1 |        | Analysis 2 |        | Analysis 1    |        | Analysis 2 |        |
|                       |             | %          | p      | Odds ratio | p      | %          | p      | Odds ratio | p      | %             | p      | Odds ratio | p      |
| Adult illiteracy rate | Literate    | 12.6       | <0.001 | 1          | <0.001 | 15.4       | <0.001 | 1          | <0.001 | 15.7          | <0.001 | 1          | <0.001 |
|                       | Illiterate  | 32.1       |        | 1.60       |        | 33.3       |        | 1.58       |        | 41.7          |        | 1.93       |        |
| Remittances           | Yes         | 6.3        | <0.001 | 1          | <0.001 | 8.0        | <0.001 | 1          | 0.001  | 9.8           | <0.001 | 1          | <0.001 |
|                       | No          | 25.4       |        | 2.27       |        | 27.3       |        | 2.23       |        | 32.4          |        | 2.02       |        |
| Child mortality       | No death    | 23.4       | <0.001 | 1          | ns     | 26.6       | 0.012  | 1          | 0.033* | 28.4          | <0.001 | 1          | ns     |
|                       | Death       | 31.5       |        | 1.13       |        | 31.4       |        | 1.21       |        | 40.2          |        | 1.02       |        |
| Child immunisation    | Yes         | 28.7       | <0.001 | 1          | 0.003* | 45.5       | <0.001 | 1          | 0.007* | 47.4          | <0.001 | 1          | ns     |
|                       | No          | 43.9       |        | 1.43       |        | 54.4       |        | 1.18       |        | 52.6          |        | 1.16       |        |
| Electricity           | Yes         | 6.4        | <0.001 | 1          | <0.001 | 12.6       | <0.001 | 1          | 0.035* | 7.9           | <0.001 | 1          | <0.001 |
|                       | No          | 36.6       |        | 1.90       |        | 35.1       |        | 1.31       |        | 47.3          |        | 2.21       |        |
| Drinking water        | Yes MDG     | 19.7       | <0.001 | 1          | 0.016* | 22.5       | <0.001 | 1          | ns     | 25.8          | <0.001 | 1          | ns     |
|                       | Not MDG     | 38.8       |        | 1.31       |        | 37.1       |        | 1.22       |        | 47.8          |        | 1.18       |        |
| Sanitation            | Yes MDG     | 7.4        | <0.001 | 1          | <0.001 | 12.1       | <0.001 | 1          | <0.001 | 11.4          | <0.001 | 1          | <0.001 |
|                       | Not MDG     | 36.2       |        | 1.94       |        | 35.9       |        | 1.68       |        | 45.0          |        | 1.66       |        |
| Wall construction     | Good        | 17.7       | <0.001 | 1          | 0.011* | 21.2       | <0.001 | 1          | 0.018* | 21.5          | <0.001 | 1          | 0.010* |
|                       | Poor        | 29.5       |        | 1.35       |        | 29.5       |        | 1.29       |        | 39.4          |        | 1.34       |        |
| Roof construction     | Good        | 14.8       | <0.001 | 1          | <0.001 | 19.0       | <0.001 | 1          | <0.001 | 18.3          | <0.001 | 1          | <0.001 |
|                       | Poor        | 42.7       |        | 1.73       |        | 39.2       |        | 1.49       |        | 56.5          |        | 2.06       |        |
| Cooking               | Good        | 1.2        | <0.001 | 1          | <0.001 | 9.1        | <0.001 | 1          | ns     | 0.5           | <0.001 | 1          | <0.001 |
|                       | Poor        | 29.6       |        | 3.66       |        | 29.9       |        | 1.08       |        | 38.3          |        | 10.42      |        |
| Assets                | 0           | 42.3       | <0.001 | 4.62       | <0.001 | 40.8       | <0.001 | 1.81       | <0.001 | 55.8          | <0.001 | 8.97       | <0.001 |
|                       | 1           | 26.3       |        | 3.19       |        | 26.9       |        | 1.37       |        | 34.2          |        | 4.65       |        |
|                       | 2           | 10.8       |        | 2.10       |        | 15.6       |        | 1.03       |        | 12.1          |        | 2.66       |        |
|                       | 3+          | 1.4        |        | 1          |        | 8.3        |        | 1          |        | 0.9           |        | 1          |        |
| Household head        | Female      | 18.3       | <0.001 | 1          | <0.001 | 22.4       | ns     | 1          | 0.017* | 24.9          | 0.001  | 1          | <0.001 |
|                       | Male        | 24.3       |        | 1.94       |        | 25.7       |        | 1.35       |        | 30.9          |        | 2.33       |        |
| Marital Status        | Not married | 13.6       | ns     | 1.03       | ns     | 13.6       | <0.001 | 0.81       | ns     | 17.0          | 0.016  | 0.99       | ns     |
|                       | Married     | 23.5       |        | 1.26       |        | 25.5       |        | 1.26       |        | 29.7          |        | 1.16       |        |
|                       | Divorced    | 22.5       |        | 1          |        | 24.8       |        | 1          |        | 32.5          |        | 1          |        |

| Indicator                    | Categories              | Total poor |        |            |        | Food poor  |        |            |        | Non-food poor |        |            |        |
|------------------------------|-------------------------|------------|--------|------------|--------|------------|--------|------------|--------|---------------|--------|------------|--------|
|                              |                         | Analysis 1 |        | Analysis 2 |        | Analysis 1 |        | Analysis 2 |        | Analysis 1    |        | Analysis 2 |        |
|                              |                         | %          | p      | Odds ratio | p      | %          | p      | Odds ratio | p      | %             | p      | Odds ratio | p      |
| Time to health post > 1 hour | No                      | 18.4       | <0.001 | 1          | ns     | 21.6       | <0.001 | 1          | 0.019* | 23.7          | <0.001 | 1          | <0.001 |
|                              | Yes                     | 44.7       |        | 1.56       |        | 40.7       |        | 1.31       |        | 57.4          |        | 1.66       |        |
| Time to road head > 1 hour   | No                      | 18.3       | <0.001 | 1          | ns     | 21.7       | <0.001 | 1          | ns     | 22.6          | <0.001 | 1          | ns     |
|                              | Yes                     | 41.8       |        | 1.14       |        | 38.0       |        | 1.19       |        | 57.2          |        | 1.27       |        |
| Time to market > 1 hour      | No                      | 13.6       | <0.001 | 1          | ns     | 18.2       | <0.001 | 1          | ns     | 16.8          | <0.001 | 1          | ns     |
|                              | Yes                     | 36.7       |        | 1.12       |        | 34.9       |        | 1.05       |        | 48.1          |        | 1.13       |        |
| Caste                        | Dalit                   | 39.0       | <0.001 | 2.32       | <0.001 | 37.9       | <0.001 | 2.17       | <0.001 | 46.3          | <0.001 | 1.74       | <0.001 |
|                              | Disadvantaged non-Dalit | 21.7       |        | 1.62       |        | 25.8       |        | 1.73       |        | 26.4          |        | 1.34       |        |
|                              | Disadvantaged Janajatis | 31.7       |        | 2.66       |        | 31.3       |        | 2.47       |        | 41.6          |        | 2.37       |        |
|                              | Religious minority      | 34.9       |        | 2.85       |        | 40.2       |        | 2.78       |        | 35.5          |        | 1.76       |        |
|                              | Advantaged Janajatis    | 8.5        |        | 2.62       |        | 17.7       |        | 2.63       |        | 11.4          |        | 2.85       |        |
|                              | Upper Caste             | 13.5       |        | 1          |        | 15.3       |        | 1          |        | 19.3          |        | 1          |        |
| Residency                    | Urban                   | 6.9        | <0.001 | 1          | ns     | 17.3       | 0.002  | 1          | 0.046* | 6.9           | <0.001 | 1          | ns     |
|                              | Rural                   | 24.8       |        | 1.58       |        | 25.8       |        | 2.11       |        | 32.1          |        | 1.29       |        |
| Dependency ratio             | <1                      | 14.4       | <0.001 | 1          | <0.001 | 17.1       | <0.001 | 1          | <0.001 | 21.1          | <0.001 | 1          | <0.001 |
|                              | ≥1                      | 32.8       |        | 2.54       |        | 35.9       |        | 2.11       |        | 39.4          |        | 2.05       |        |
| Loans                        | None                    | 17.5       | <0.001 | 1          | ns     | 20.3       | <0.001 | 1          | ns     | 23.5          | <0.001 | 1          | ns     |
|                              | Yes                     | 26.2       |        | 1.04       |        | 27.7       |        | 1.18       |        | 33.1          |        | 0.97       |        |
| Migration                    | Non                     | 28.4       | 0.002  | 0.77       | ns     | 28.2       | 0.007  | 0.62       | 0.013* | 39.5          | <0.001 | 1.05       | ns     |
|                              | Within Nepal            | 21.9       |        | 0.95       |        | 23.6       |        | 0.74       |        | 28.1          |        | 1.04       |        |
|                              | From abroad             | 22.9       |        | 1          |        | 28.5       |        | 1          |        | 26.2          |        | 1          |        |
| Land owned                   | None                    | 16.4       | <0.001 | 2.40       | ns     | 22.5       | <0.001 | 2.95       | 0.005* | 18.7          | <0.001 | 1.35       | ns     |
|                              | 0.2 ha                  | 27.9       |        | 1.84       |        | 29.1       |        | 2.30       |        | 36.8          |        | 1.20       |        |
|                              | 0.2-1.0 ha              | 24.5       |        | 1.78       |        | 23.8       |        | 2.05       |        | 32.1          |        | 1.11       |        |
|                              | 1.01+ ha                | 12.6       |        | 1          |        | 10.9       |        | 1          |        | 17.1          |        | 1          |        |
| Region                       | Eastern                 | 24.1       | <0.001 | 0.37       | <0.001 | 24.9       | <0.001 | 0.26       | <0.001 | 34.1          | <0.001 | 0.61       | <0.001 |
|                              | Central                 | 19.2       |        | 0.44       |        | 24.5       |        | 0.38       |        | 21.7          |        | 0.55       |        |
|                              | Western                 | 18.3       |        | 0.46       |        | 16.0       |        | 0.22       |        | 28.6          |        | 1.01       |        |
|                              | Mid-West                | 27.0       |        | 0.77       |        | 34.1       |        | 0.47       |        | 46.6          |        | 1.12       |        |
|                              | Far-West                | 32.2       |        | 1          |        | 39.5       |        | 1          |        | 35.1          |        | 1          |        |

**Table 7.2: Relationship of poor, food poor and non-food poor households with chronic poverty and vulnerability indicators NLSS III**

| Indicator             | Categories  | Total poor |        |            |        | Food poor  |        |            |        | Non-food poor |        |            |        |
|-----------------------|-------------|------------|--------|------------|--------|------------|--------|------------|--------|---------------|--------|------------|--------|
|                       |             | Analysis 1 |        | Analysis 2 |        | Analysis 1 |        | Analysis 2 |        | Analysis 1    |        | Analysis 2 |        |
|                       |             | %          | p      | Odds ratio | p      | %          | p      | Odds ratio | P      | %             | p      | Odds ratio | p      |
| Adult illiteracy rate | Literate    | 12.2       | <0.001 | 1          | <0.001 | 13.2       | <0.001 | 1          | ns     | 18.0          | <0.001 | 1          | <0.001 |
|                       | Illiterate  | 26.4       |        | 1.40       |        | 23.4       |        | 1.15       |        | 39.6          |        | 1.70       |        |
| Remittances           | Yes         | 16.3       | 0.003  | 1          | ns     | 16.3       | 0.042* | 1          | ns     | 24.0          | <0.001 | 1          | 0.021* |
|                       | No          | 18.4       |        | 1.15       |        | 18.4       |        | 1.09       |        | 29.2          |        | 1.21       |        |
| Child mortality       | No death    | 19.3       | <0.001 | 1          | ns     | 18.8       | <0.001 | 1          | ns     | 27.3          | <0.001 | 1          | ns     |
|                       | Death       | 28.3       |        | 1.04       |        | 25.1       |        | 1.02       |        | 39.7          |        | 1.06       |        |
| Child immunisation    | Yes         | 25.3       | <0.001 | 1          | ns     | 23.0       | <0.001 | 1          | 0.009* | 36.8          | <0.001 | 1          | ns     |
|                       | No          | 35.0       |        | 1.26       |        | 31.9       |        | 1.36       |        | 45.4          |        | 1.02       |        |
| Electricity           | Yes         | 12.3       | <0.001 | 1          | ns     | 12.8       | <0.001 | 1          | ns     | 18.8          | <0.001 | 1          | <0.001 |
|                       | No          | 35.9       |        | 1.21       |        | 31.4       |        | 1.15       |        | 51.9          |        | 1.40       |        |
| Drinking water        | Yes MDG     | 16.6       | <0.001 | 1          | ns     | 16.0       | <0.001 | 1          | ns     | 25.3          | <0.001 | 1          | ns     |
|                       | Not MDG     | 28.1       |        | 1.18       |        | 26.3       |        | 1.15       |        | 38.5          |        | 1.08       |        |
| Sanitation            | Yes MDG     | 6.1        | <0.001 | 1          | <0.001 | 8.4        | <0.001 | 1          | <0.001 | 10.3          | <0.001 | 1          | <0.001 |
|                       | Not MDG     | 27.9       |        | 2.24       |        | 24.8       |        | 1.62       |        | 40.6          |        | 2.34       |        |
| Wall construction     | Good        | 6.2        | <0.001 | 1          | <0.001 | 8.0        | <0.001 | 1          | <0.001 | 10.9          | <0.001 | 1          | <0.001 |
|                       | Poor        | 25.2       |        | 1.88       |        | 23.1       |        | 1.49       |        | 36.6          |        | 2.02       |        |
| Roof construction     | Good        | 14.8       | <0.001 | 1          | <0.001 | 15.3       | <0.001 | 1          | ns     | 21.8          | <0.001 | 1          | <0.001 |
|                       | Poor        | 35.1       |        | 1.63       |        | 28.8       |        | 1.20       |        | 53.0          |        | 1.96       |        |
| Cooking               | Good        | 4.4        | <0.001 | 1          | <0.001 | 6.6        | <0.001 | 1          | ns     | 8.5           | <0.001 | 1          | <0.001 |
|                       | Poor        | 24.9       |        | 2.08       |        | 22.8       |        | 1.35       |        | 36.1          |        | 1.78       |        |
| Assets                | 0           | 30.5       | <0.001 | 3.10       | <0.001 | 26.1       | <0.001 | 1.78       | <0.001 | 29.7          | <0.001 | 5.26       | <0.001 |
|                       | 1           | 35.3       |        | 2.36       |        | 32.6       |        | 1.55       |        | 34.5          |        | 3.34       |        |
|                       | 2           | 18.8       |        | 1.48       |        | 19.5       |        | 1.09       |        | 20.5          |        | 2.01       |        |
|                       | 3+          | 15.5       |        | 1          |        | 21.7       |        | 1          |        | 15.2          |        | 1          |        |
| Household head        | Female      | 17.4       | ns     | 1          | 0.017* | 18.3       | ns     | 1          | ns     | 23.6          | <0.001 | 1          | <0.001 |
|                       | Male        | 18.9       |        | 1.30       |        | 17.6       |        | 1.08       |        | 29.0          |        | 1.84       |        |
| Marital Status        | Not married | 5.1        | <0.001 | 0.48       | 0.009* | 6.8        | 0.001  | .062       | ns     | 13.0          | <0.001 | 1.00       | ns     |
|                       | Married     | 19.1       |        | 1.29       |        | 18.1       |        | 1.13       |        | 28.0          |        | 1.06       |        |
|                       | Divorced    | 17.9       |        | 1          |        | 18.1       |        | 1          |        | 27.9          |        | 1          |        |

| Indicator                    | Categories              | Total poor |        |            |        | Food poor  |        |            |        | Non-food poor |        |            |        |
|------------------------------|-------------------------|------------|--------|------------|--------|------------|--------|------------|--------|---------------|--------|------------|--------|
|                              |                         | Analysis 1 |        | Analysis 2 |        | Analysis 1 |        | Analysis 2 |        | Analysis 1    |        | Analysis 2 |        |
|                              |                         | %          | p      | Odds ratio | p      | %          | p      | Odds ratio | P      | %             | p      | Odds ratio | p      |
| Time to health post > 1 hour | No                      | 16.5       | <0.001 | 1          | ns     | 15.8       | <0.001 | 1          | ns     | 25.0          | <0.001 | 1          | ns     |
|                              | Yes                     | 32.2       |        | 1.04       |        | 30.8       |        | 1.13       |        | 44.9          |        | 1.06       |        |
| Time to road head > 1 hour   | No                      | 16.2       | <0.001 | 1          | ns     | 15.7       | <0.001 | 1          | ns     | 24.8          | <0.001 | 1          | ns     |
|                              | Yes                     | 36.1       |        | 1.18       |        | 33.3       |        | 1.21       |        | 48.2          |        | 1.05       |        |
| Time to market > 1 hour      | No                      | 13.3       | <0.001 | 1          | ns     | 13.5       | <0.001 | 1.03       | ns     | 20.5          | <0.001 | 1          | 0.021* |
|                              | Yes                     | 29.3       |        | 1.13       |        | 26.5       |        | 1          |        | 42.1          |        | 1.26       |        |
| Caste                        | Dalit                   | 34.6       | <0.001 | 1.93       | <0.001 | 29.4       | <0.001 | 1.53       | <0.001 | 49.7          | <0.001 | 2.17       | <0.001 |
|                              | Disadvantaged non-Dalit | 25.4       |        | 2.48       |        | 21.0       |        | 1.63       |        | 36.7          |        | 2.53       |        |
|                              | Disadvantaged Janajatis | 20.2       |        | 1.73       |        | 19.4       |        | 1.43       |        | 30.8          |        | 1.78       |        |
|                              | Religious minority      | 20.4       |        | 1.31       |        | 12.6       |        | 0.70       |        | 36.6          |        | 1.76       |        |
|                              | Advantaged Janajatis    | 9.3        |        | 1.66       |        | 9.4        |        | 1.13       |        | 14.7          |        | 1.43       |        |
|                              | Upper Caste             | 12.3       |        | 1          |        | 14.3       |        | 1          |        | 17.6          |        | 1          |        |
| Residency                    | Urban                   | 11.3       | <0.001 | 1          | <0.001 | 10.4       | <0.001 | 1          | ns     | 18.8          | <0.001 | 1          | <0.001 |
|                              | Rural                   | 22.4       |        | 2.33       |        | 21.7       |        | 1.20       |        | 32.3          |        | 2.94       |        |
| Dependency ratio             | <1                      | 12.7       | <0.001 | 1          | <0.001 | 12.7       | <0.001 | 1          | <0.001 | 21.2          | <0.001 | 1          | <0.001 |
|                              | ≥1                      | 33.1       |        | 2.54       |        | 30.6       |        | 2.26       |        | 43.6          |        | 2.24       |        |
| Loans                        | None                    | 16.5       | 0.002  | 1.08       | ns     | 15.7       | 0.001  | 1.03       | ns     | 26.1          | ns     | 1.16       | ns     |
|                              | Yes                     | 19.8       |        | 1          |        | 19.0       |        | 1          |        | 28.5          |        | 1          |        |
| Migration                    | Non                     | 23.8       | <0.001 | 0.59       | <0.001 | 21.6       | <0.001 | 0.72       | 0.031* | 35.6          | <0.001 | 0.66       | <0.001 |
|                              | Within Nepal            | 11.4       |        | 0.44       |        | 12.8       |        | 0.62       |        | 16.9          |        | 0.46       |        |
|                              | From abroad             | 25.5       |        | 1          |        | 20.8       |        | 1          |        | 35.5          |        | 1          |        |
| Land owned                   | None                    | 14.9       | <0.001 | 3.08       | <0.001 | 12.7       | <0.001 | 1.72       | <0.001 | 24.1          | <0.001 | 3.87       | <0.001 |
|                              | 0.2 ha                  | 24.0       |        | 2.01       |        | 22.2       |        | 1.57       |        | 36.5          |        | 2.39       |        |
|                              | 0.2-1.0 ha              | 21.1       |        | 1.69       |        | 20.9       |        | 1.41       |        | 29.3          |        | 1.56       |        |
|                              | 1.01+ha                 | 11.4       |        | 1          |        | 13.4       |        | 1          |        | 18.0          |        | 1          |        |
| Region                       | Eastern                 | 16.3       | <0.001 | 0.21       | <0.001 | 13.6       | <0.001 | 0.28       | <0.001 | 27.6          | <0.001 | 0.26       | <0.001 |
|                              | Central                 | 14.7       |        | 0.36       |        | 14.6       |        | 0.47       |        | 22.3          |        | 0.37       |        |
|                              | Western                 | 14.8       |        | 0.37       |        | 14.2       |        | 0.43       |        | 22.7          |        | 0.45       |        |
|                              | Mid-West                | 26.2       |        | 0.35       |        | 27.6       |        | 0.58       |        | 38.4          |        | 0.41       |        |
|                              | Far-West                | 37.3       |        | 1          |        | 35.0       |        | 1          |        | 45.3          |        | 1          |        |

\* not significant after correction for multiple testing (Bonferroni correction)

**Table 7.3: Summary of indicators which remained significantly associated with poor, food poor and non-food poor households after removing the effects of the other indicators**

| Indicator                    | Total Poor |     | Food poor |     | Non-food poor |     |
|------------------------------|------------|-----|-----------|-----|---------------|-----|
|                              | II         | III | II        | III | II            | III |
| Adult illiteracy rate        | √          | √   | √         |     | √             | √   |
| Remittances                  | √          |     |           |     | √             |     |
| Child mortality              |            |     |           |     |               |     |
| Child immunisation           |            |     |           |     |               |     |
| Electricity                  | √          |     |           |     | √             | √   |
| Drinking water               |            |     |           |     |               |     |
| Sanitation                   | √          | √   | √         | √   | √             | √   |
| Wall construction            |            | √   |           | √   |               | √   |
| Roof construction            | √          | √   | √         |     | √             | √   |
| Cooking                      | √          | √   |           |     | √             | √   |
| Assets                       | √          | √   | √         | √   | √             | √   |
| Household head               |            |     |           |     | √             | √   |
| Marital Status               |            |     |           |     |               |     |
| Time to health post > 1 hour |            |     |           |     | √             |     |
| Time to road head > 1 hour   |            |     |           |     |               |     |
| Time to market > 1 hour      |            |     |           |     |               |     |
| Caste                        | √          | √   | √         | √   | √             | √   |
| Residency                    |            | √   |           |     |               | √   |
| Dependency ratio             | √          | √   | √         | √   | √             | √   |
| Loans                        |            |     |           |     |               |     |
| Migration                    |            | √   |           |     |               | √   |
| Land owned                   |            | √   |           |     |               | √   |
| Region                       | √          | √   | √         | √   | √             | √   |

Figure 7.3: Percentages of total poor, food poor and non-food poor by sanitation in NLSS II and NLSS III

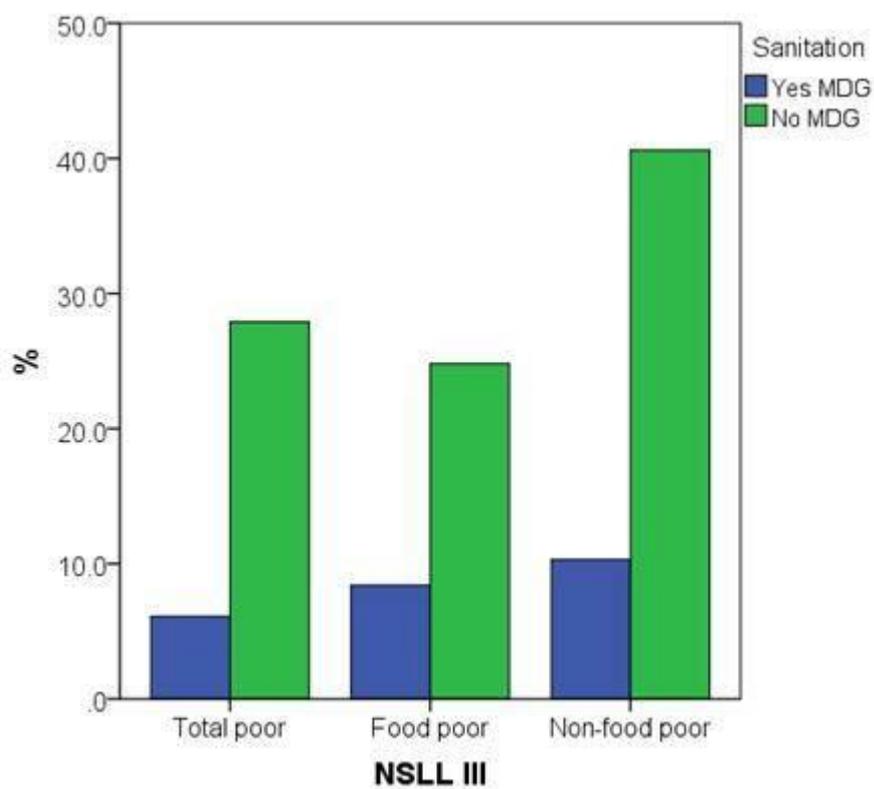
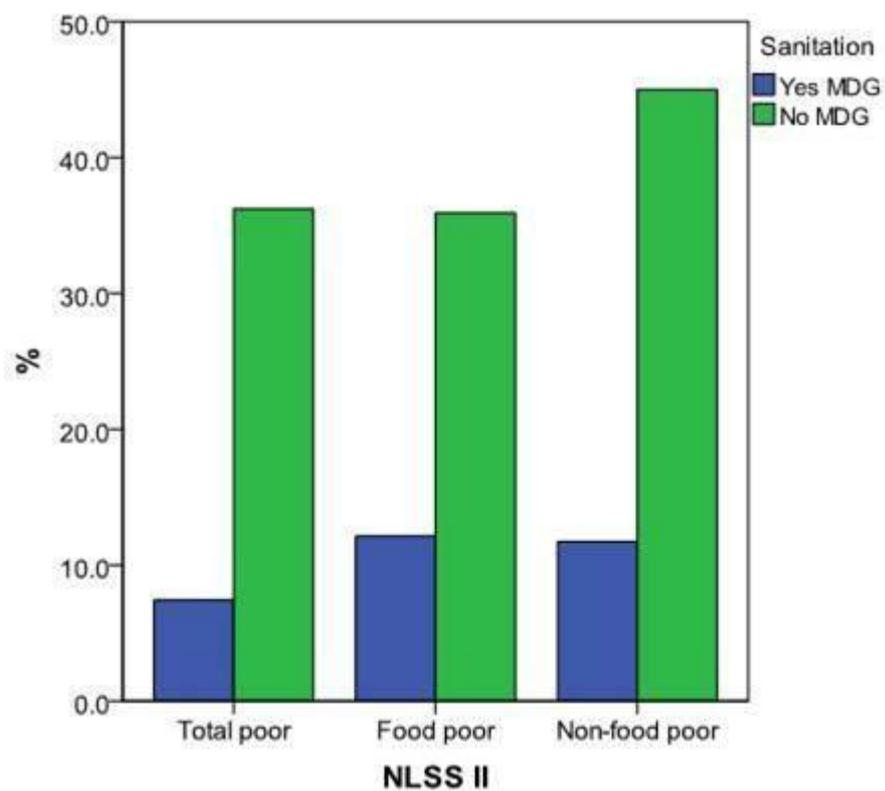
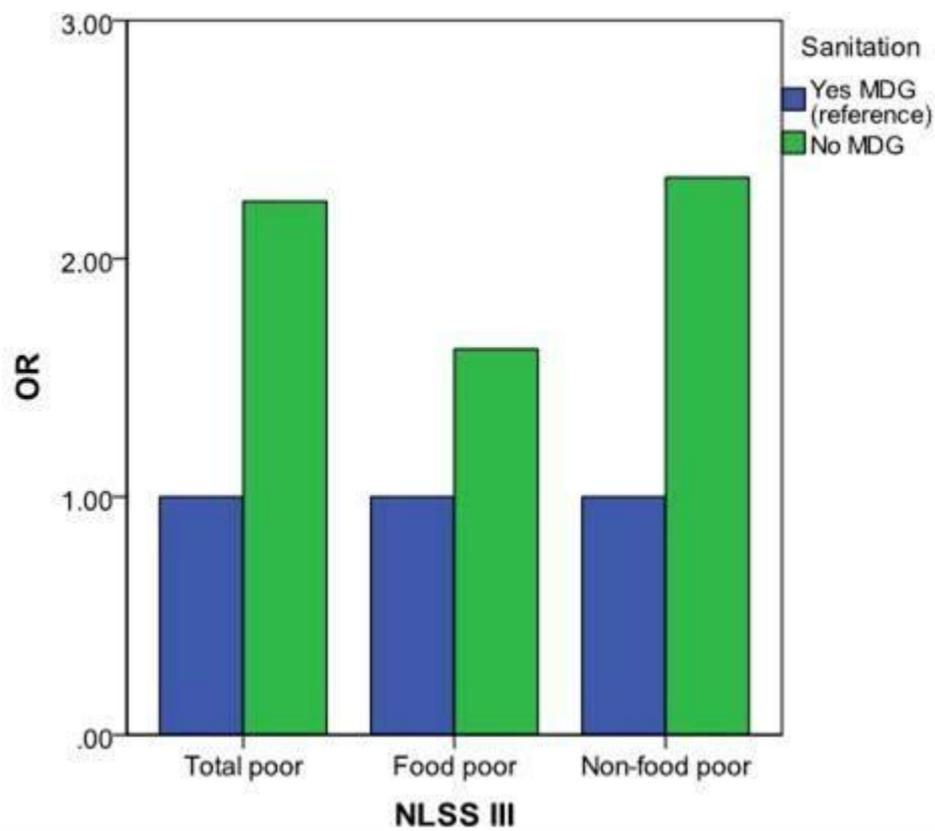
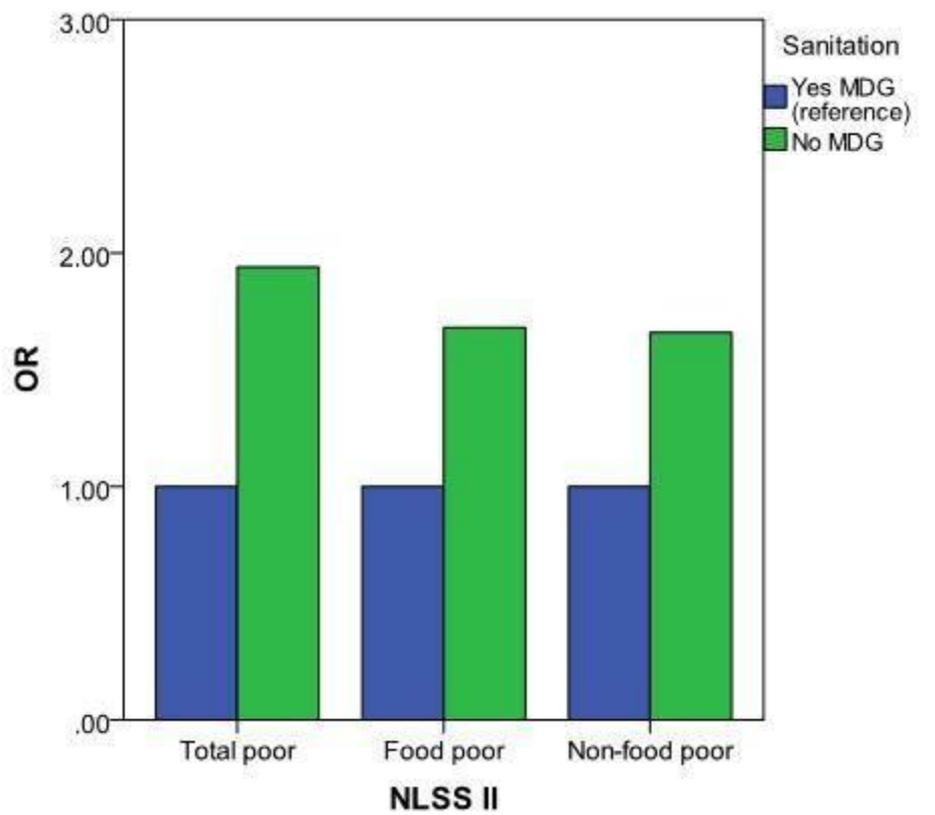
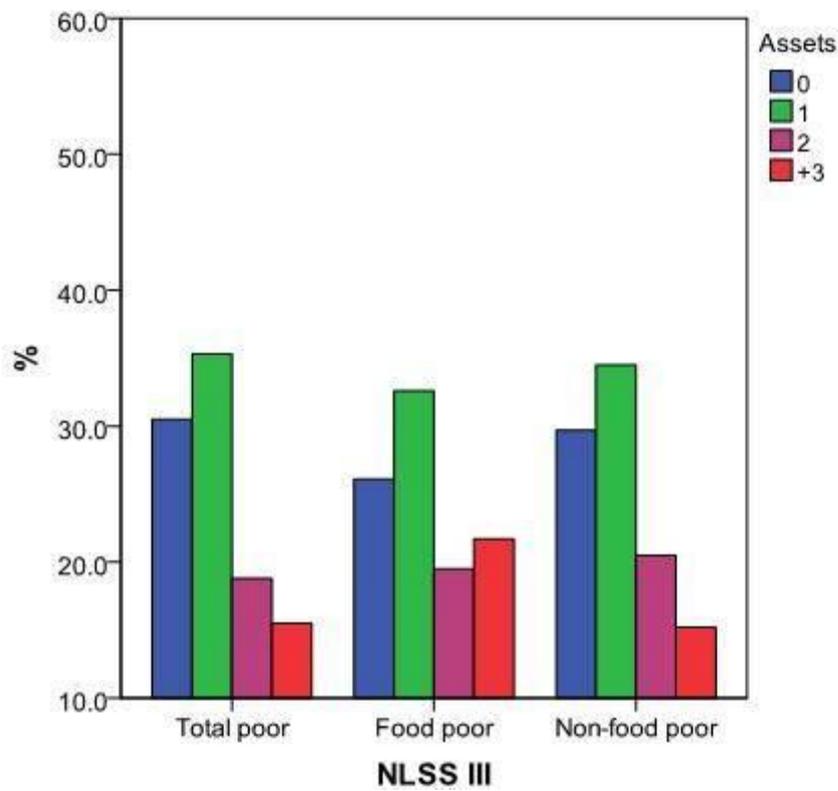
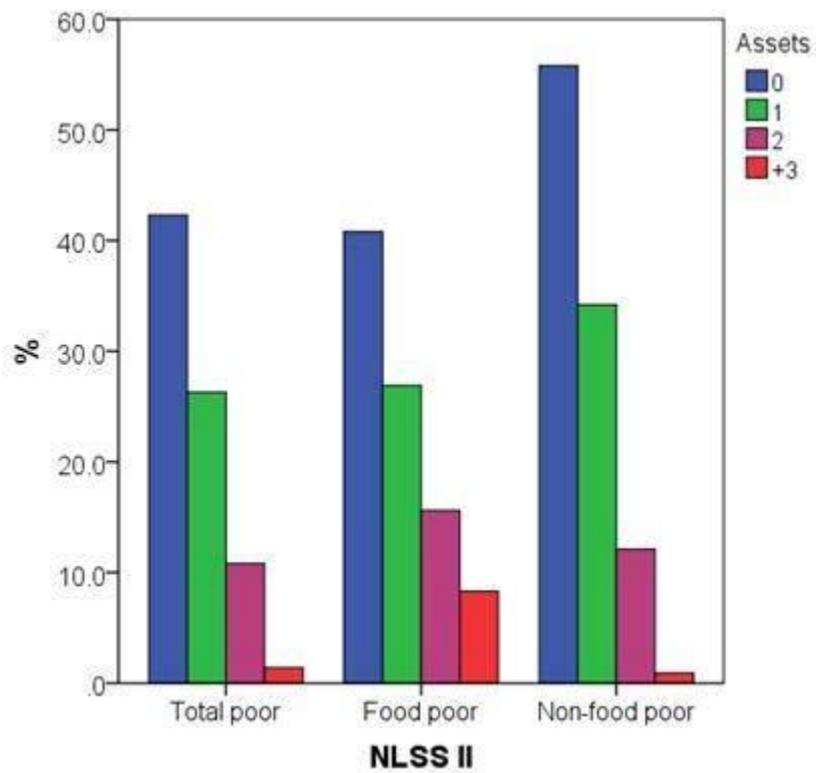


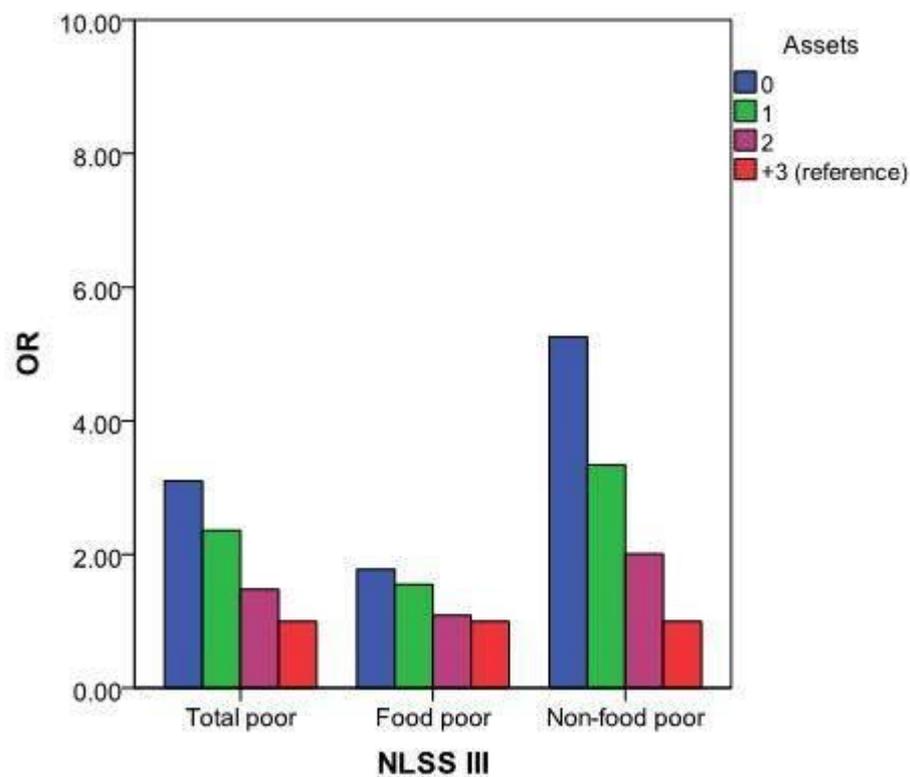
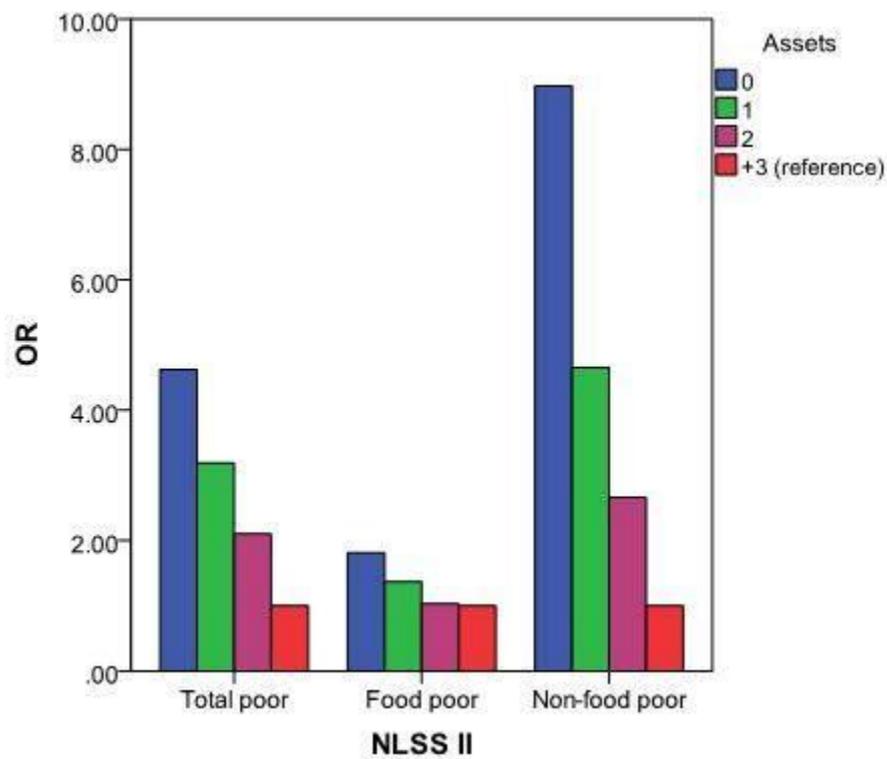
Figure 7.4: Odds ratios of total poor, food poor and non-food poor by sanitation in NLSS II and NLSS III



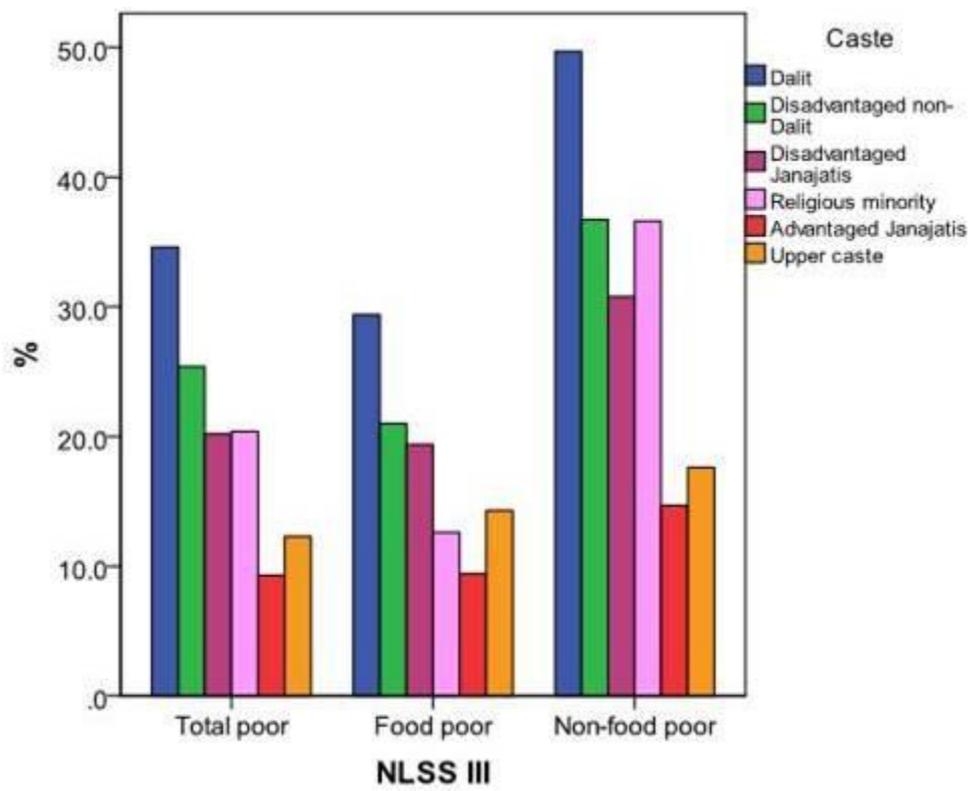
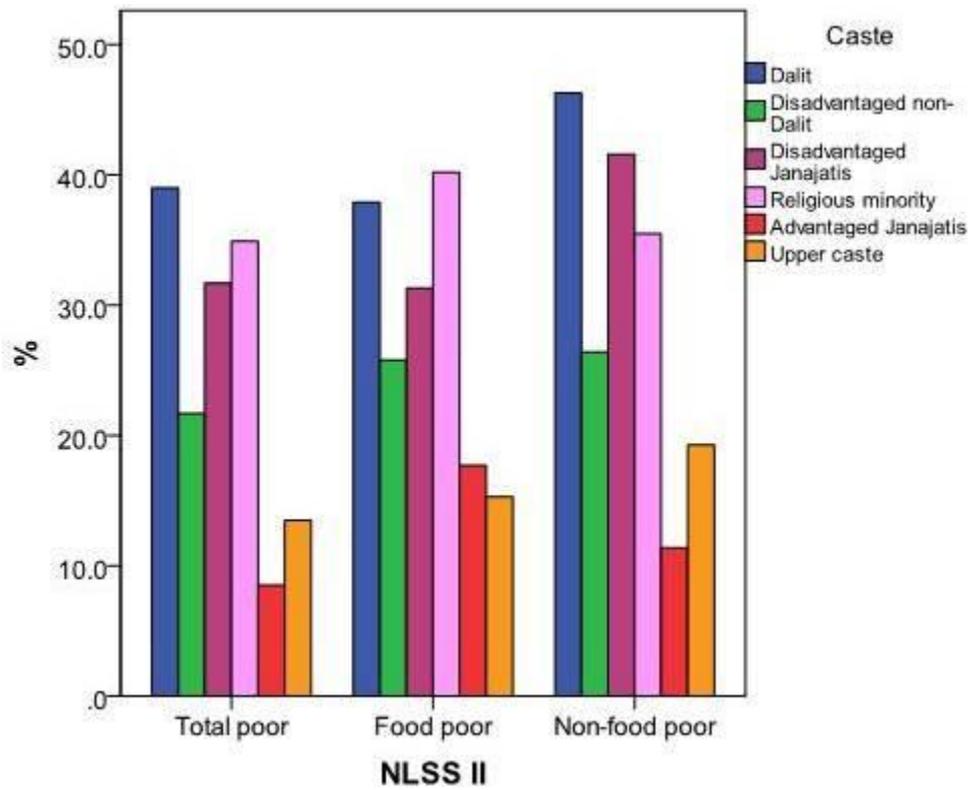
**Figure 7.5: Percentages of total poor, food poor and non-food poor by total number of assets in NLSS II and NLSS III**



**Figure 7.6: Odds ratios of total poor, food poor and non-food poor by total number of assets in NLSS II and NLSS III**



**Figure 7.7: Percentages of total poor, food poor and non-food poor by caste in NLSS II and NLSS III**



**Figure 7.8: Odds ratios of total poor, food poor and non-food poor by caste in NLSS II and NLSS III**

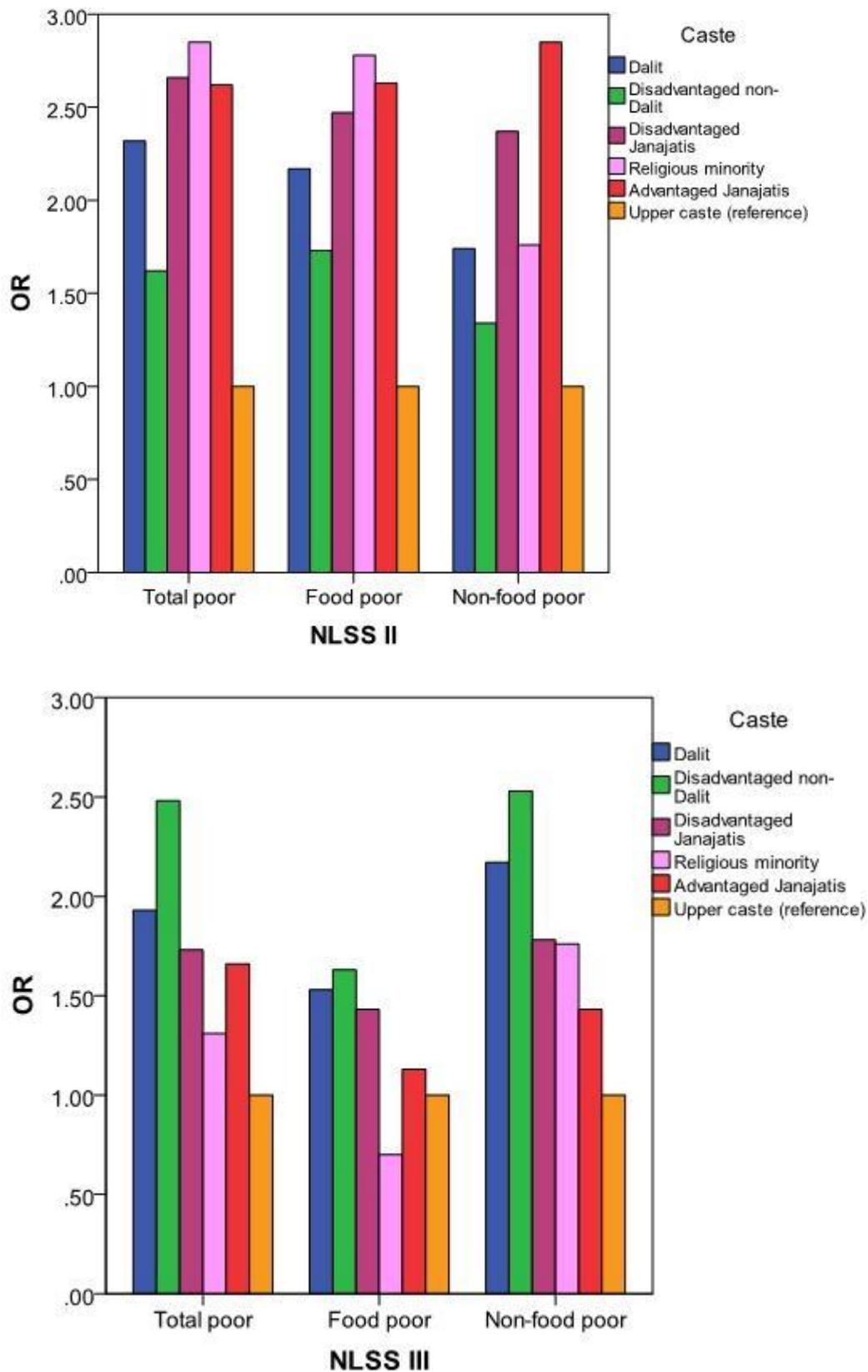


Figure 7.9: Percentages of total poor, food poor and non-food poor by dependency ratio in NLSS II and NLSS III

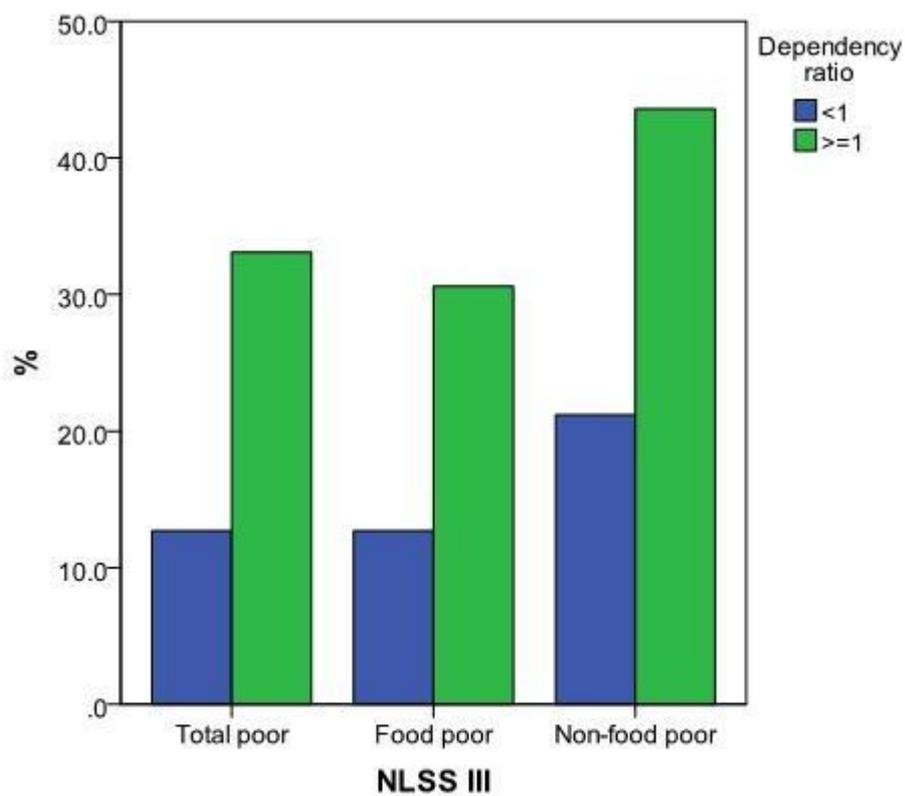
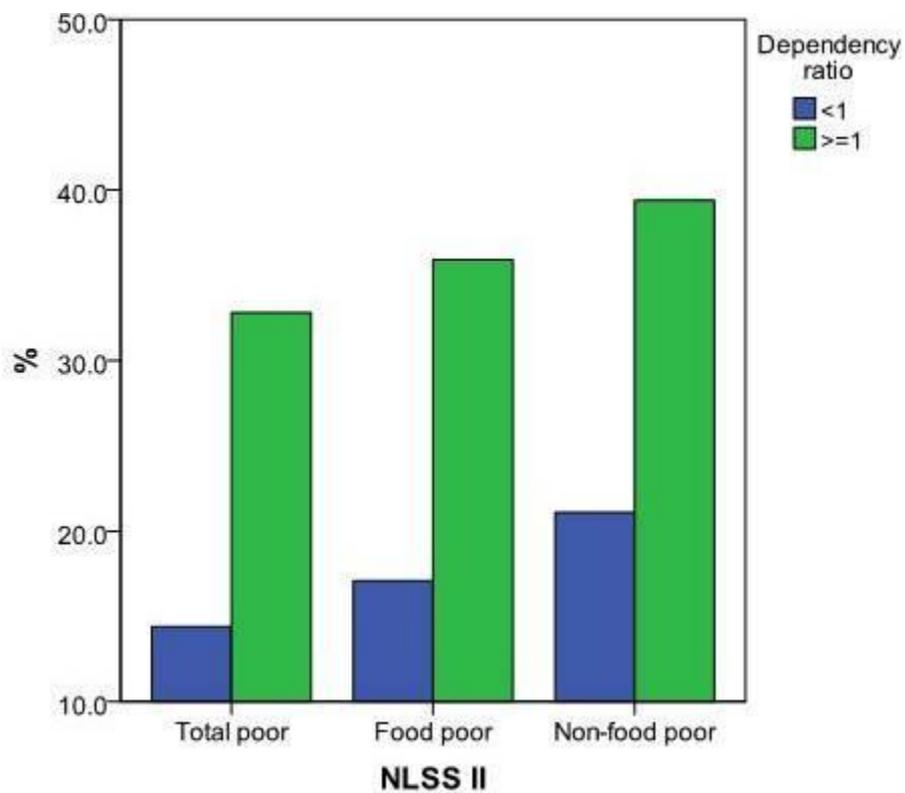
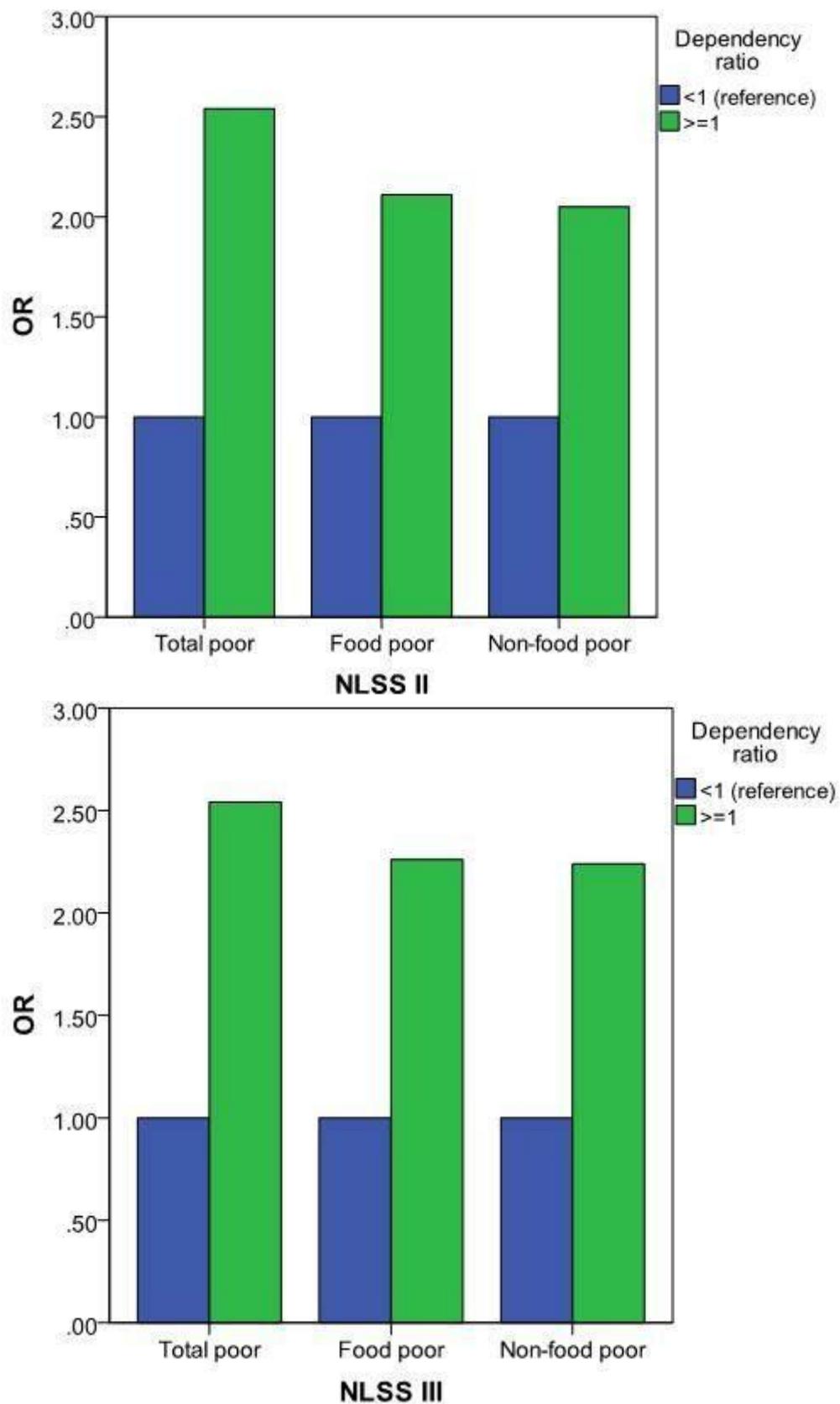
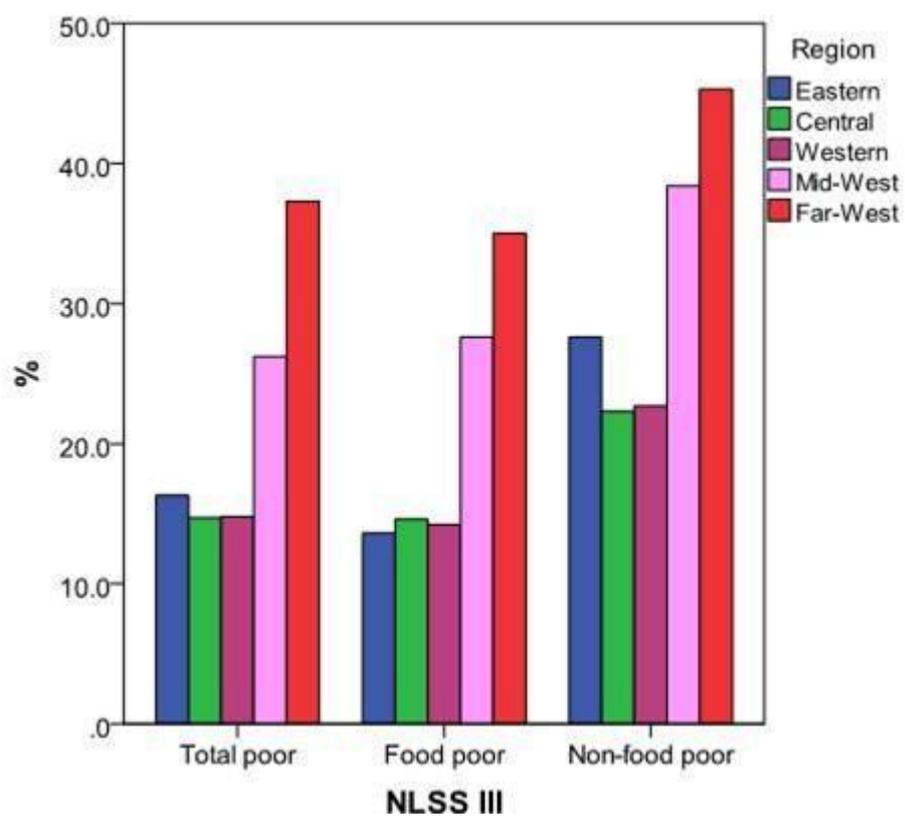
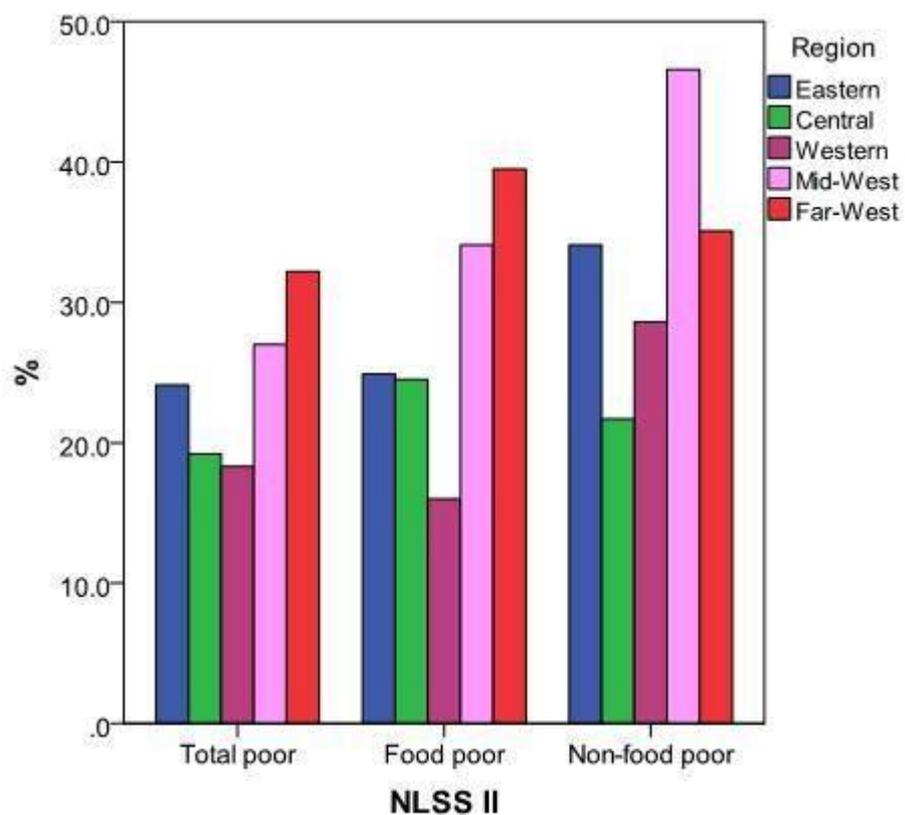


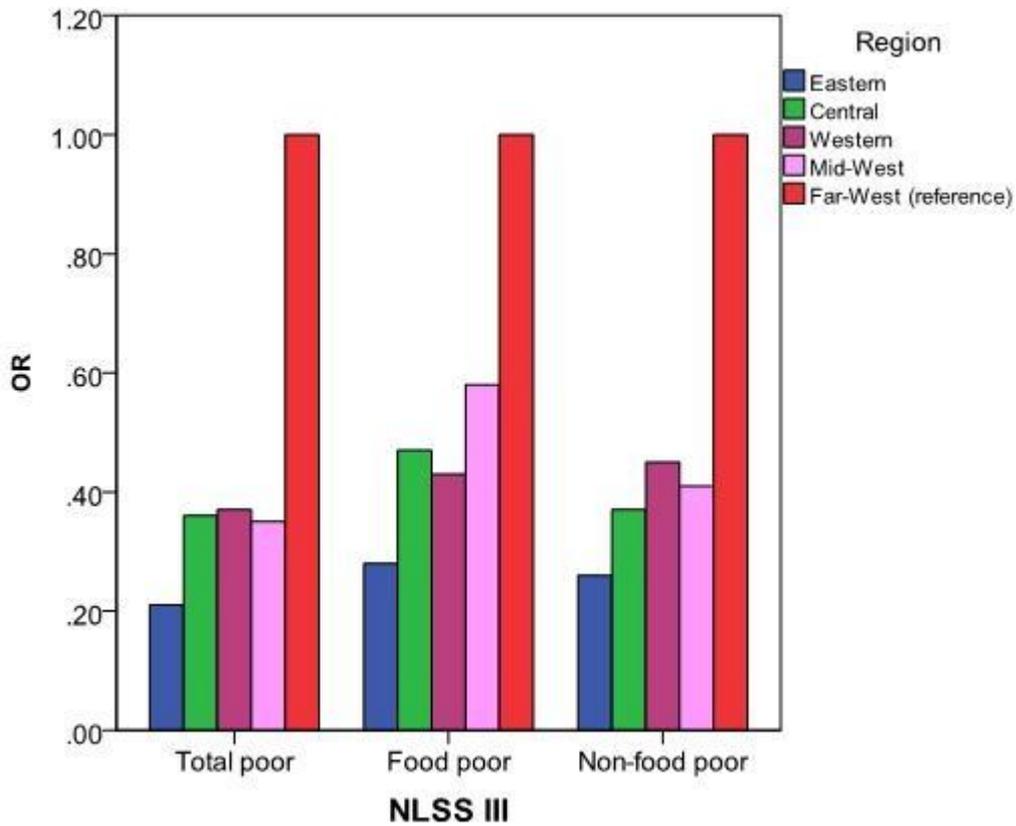
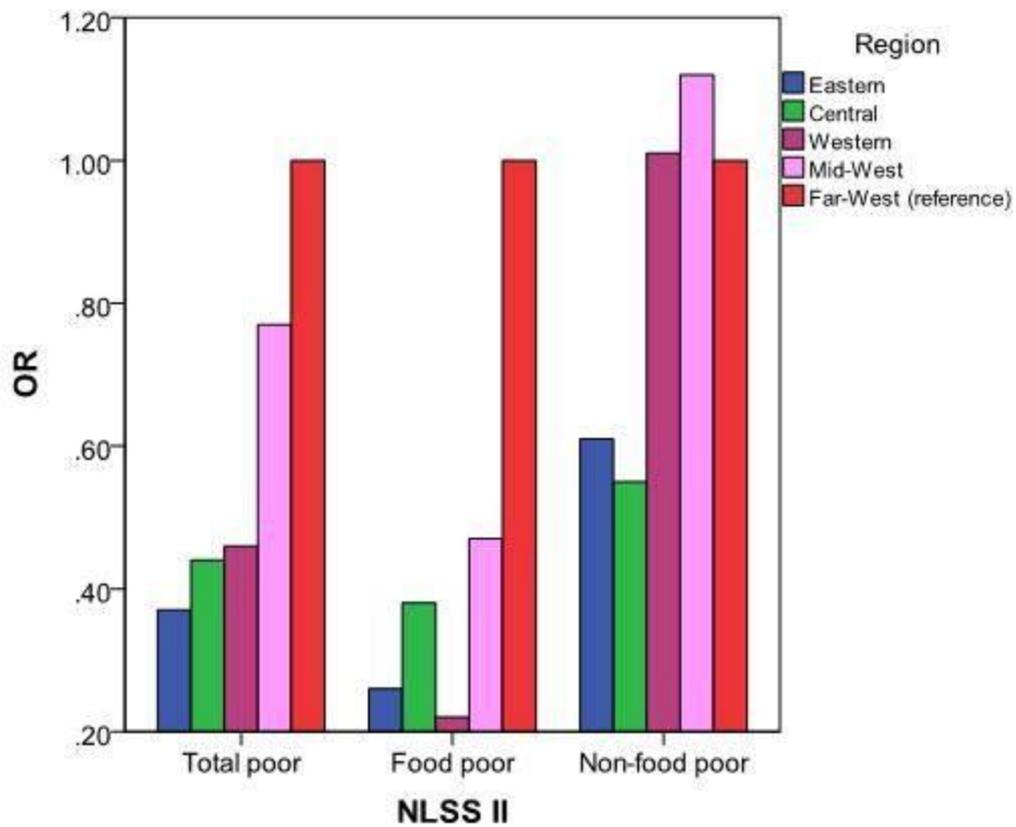
Figure 7.10: Odds ratios of total poor, food poor and non-food poor by dependency ratio in NLSS II and NLSS III



**Figure 7.11: Percentages of total poor, food poor and non-food poor by region in NLSS II and NLSS III**



**Figure 7.12: Odds ratios of total poor, food poor and non-food poor by region in NLSS II and NLSS III**



**Table 7.4: Order of importance of chronic poverty and vulnerability variables in predicting poor, food and non-food poor households in NLSS II**

| Step                                      | Total poor               | Food poor                | Non-food poor            |
|---|--------------------------|--------------------------|--------------------------|
| 1   | Electricity              | Sanitation               | Electricity              |
| 2   | Total number of assets   | Dependency ratio         | Total number of assets   |
| 3   | Dependency ratio         | Total number of assets   | Roof construction        |
| 4   | Sanitation               | Caste                    | Dependency ratio         |
| 5   | Caste                    | Region                   | Caste                    |
| 6   | Roof construction        | Roof construction        | Cooking fuel             |
| 7   | Region                   | Remittance               | Time to health centre    |
| 8   | Time to health centre    | Adult illiteracy         | Region                   |
| 9   | Gender head of household | Gender head of household | Gender head of household |
| 10  | Adult illiteracy         | Time to health centre    | Adult illiteracy         |
| 11  | Remittance               | Wall construction        | Sanitation               |
| 12  | Cooking fuel             | Land ownership           | Remittance               |
| 13  | Drinking water           | Electricity              | Wall construction        |
| 14  | Wall construction        | Migration                | Time to road head        |
| 15  |                          | Drinking water           |                          |
| <b>Classification correctly predicted</b> |                          |                          |                          |
| <u>With all indicators</u>                |                          |                          |                          |
| Not poor                                  | 91.8%                    | 92.4%                    | 87.5%                    |
| Poor                                      | 44.6%                    | 33.0%                    | 63.4%                    |
| Total                                     | 80.5%                    | 77.1%                    | 80.0%                    |
| <u>With indicators in model</u>           |                          |                          |                          |
| Not poor                                  | 91.4%                    | 92.1%                    | 87.8%                    |
| Poor                                      | 45.1%                    | 32.0%                    | 62.1%                    |
| Total                                     | 80.2%                    | 76.6%                    | 79.8%                    |
| <u>With first 5 indicators only</u>       |                          |                          |                          |
| Not poor                                  | 92.4%                    | 93.0%                    | 84.3%                    |
| Poor                                      | 35.4%                    | 25.1%                    | 61.8%                    |
| Total                                     | 78.7%                    | 75.6%                    | 77.3%                    |

**Table 7.5: Order of importance of chronic poverty and vulnerability variables in predicting poor, food and non-food poor households in NLSS III**

| Step                                      | Total poor               | Food poor              | Non-food poor            |
|---|--------------------------|------------------------|--------------------------|
| 1   | Total number of assets   | Total number of assets | Total number of assets   |
| 2   | Dependency ratio         | Dependency ratio       | Sanitation               |
| 3   | Sanitation               | Sanitation             | Dependency ratio         |
| 4   | Region                   | Region                 | Caste                    |
| 5   | Caste                    | Caste                  | Residency                |
| 6   | Wall construction        | Wall construction      | Wall construction        |
| 7   | Land ownership           | Female education       | Gender head of household |
| 8   | Migration                | Land ownership         | Adult illiteracy         |
| 9   | Roof construction        | Migration              | Land ownership           |
| 10  | Residency                | Adult illiteracy       | Region                   |
| 11  | Cooking fuel             | Time to road head      | Roof construction        |
| 12  | Female education         | Roof construction      | Migration                |
| 13  | Adult illiteracy         |                        | Electricity              |
| 14  | Gender head of household |                        | Cooking fuel             |
| 15  | Electricity              |                        | Foundation construction  |
| 16  | Time to road head        |                        | Remittances              |
| 17  |                          |                        | Time to market           |
| <u>Classification correctly predicted</u> |                          |                        |                          |
| <u>With all indicators</u>                |                          |                        |                          |
| Not poor                                  | 95.5%                    | 97.4%                  | 90.1%                    |
| Poor                                      | 33.3%                    | 14.0%                  | 55.1%                    |
| Total                                     | 82.3%                    | 82.3%                  | 80.3%                    |
| <u>With indicators in model</u>           |                          |                        |                          |
| Not poor                                  | 95.5%                    | 97.5%                  | 90.1%                    |
| Poor                                      | 32.3%                    | 13.3%                  | 55.2%                    |
| Total                                     | 83.5%                    | 82.3%                  | 80.3%                    |
| <u>With first 5 indicators only</u>       |                          |                        |                          |
| Not poor                                  | 96.4%                    | 97.6%                  | 89.2%                    |
| Poor                                      | 24.6%                    | 12.4%                  | 47.7%                    |
| Total                                     | 82.8%                    | 82.1%                  | 77.6%                    |

**Table 7.6: Relationship between food and non-food poverty index and chronic poverty and vulnerability indicators in NLSS II**

| Indicator                    | Categories  | Food poor only (%) | Non-food poor only (%) | Both food and non-food poor (%) | Analysis 1 p | Analysis 2 p |
|------------------------------|-------------|--------------------|------------------------|---------------------------------|--------------|--------------|
| Adult illiteracy rate        | Literate    | 7.5                | 7.7                    | 8.0                             | <0.001       | <0.001       |
|                              | Illiterate  | 10.8               | 19.2                   | 22.5                            |              |              |
| Remittances                  | Yes         | 3.9                | 5.7                    | 4.1                             | <0.001       | <0.001       |
|                              | No          | 10.0               | 15.0                   | 17.4                            |              |              |
| Child mortality              | No death    | 10.3               | 12.1                   | 16.3                            | <0.001       | ns           |
|                              | Death       | 9.9                | 18.7                   | 21.5                            |              |              |
| Child immunisation           | Yes         | 19.9               | 15.0                   | 20.5                            | <0.001       | 0.029        |
|                              | No          | 14.8               | 16.9                   | 30.0                            |              |              |
| Electricity                  | Yes         | 8.7                | 4.1                    | 3.8                             | <0.001       | <0.001       |
|                              | No          | 9.7                | 21.9                   | 25.5                            |              |              |
| Drinking water               | Yes MDG     | 9.1                | 12.5                   | 13.4                            | <0.001       | ns           |
|                              | Not MDG     | 9.9                | 20.7                   | 27.2                            |              |              |
| Sanitation                   | Yes MDG     | 7.1                | 6.4                    | 5.0                             | <0.001       | <0.001       |
|                              | Not MDG     | 11.0               | 20.2                   | 24.8                            |              |              |
| Wall construction            | Good        | 8.8                | 9.0                    | 12.5                            | <0.001       | 0.001        |
|                              | Poor        | 9.8                | 19.6                   | 19.7                            |              |              |
| Roof construction            | Good        | 9.5                | 8.8                    | 9.6                             | <0.001       | <0.001       |
|                              | Poor        | 8.7                | 26.0                   | 30.5                            |              |              |
| Cooking                      | Good        | 8.7                | 0.1                    | 0.4                             | <0.001       | <0.001       |
|                              | Poor        | 9.5                | 17.9                   | 20.4                            |              |              |
| Assets                       | 0           | 9.3                | 24.3                   | 31.5                            | <0.001       | <0.001       |
|                              | 1           | 10.0               | 17.3                   | 16.9                            |              |              |
|                              | 2           | 9.0                | 5.5                    | 6.6                             |              |              |
|                              | 3+          | 7.9                | 0.5                    | 0.5                             |              |              |
| Household head               | Female      | 9.2                | 11.7                   | 13.3                            | 0.011*       | <0.001       |
|                              | Male        | 9.3                | 14.5                   | 16.5                            |              |              |
| Marital Status               | Not married | 4.5                | 8.0                    | 9.1                             | 0.011*       | ns           |
|                              | Married     | 9.3                | 13.6                   | 16.1                            |              |              |
|                              | Divorced    | 9.6                | 17.3                   | 15.0                            |              |              |
| Time to health post > 1 hour | No          | 9.5                | 11.6                   | 12.1                            | <0.001       | <0.001       |
|                              | Yes         | 7.9                | 24.7                   | 32.8                            |              |              |
| Time to road head > 1 hour   | No          | 9.5                | 10.4                   | 12.1                            | <0.001       | ns           |
|                              | Yes         | 8.2                | 27.4                   | 29.8                            |              |              |

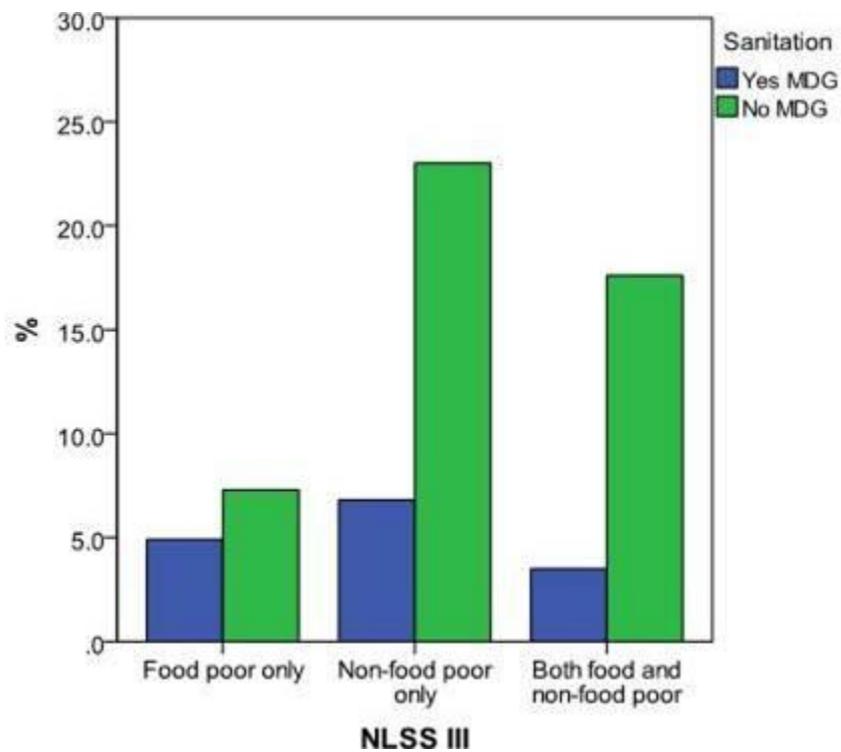
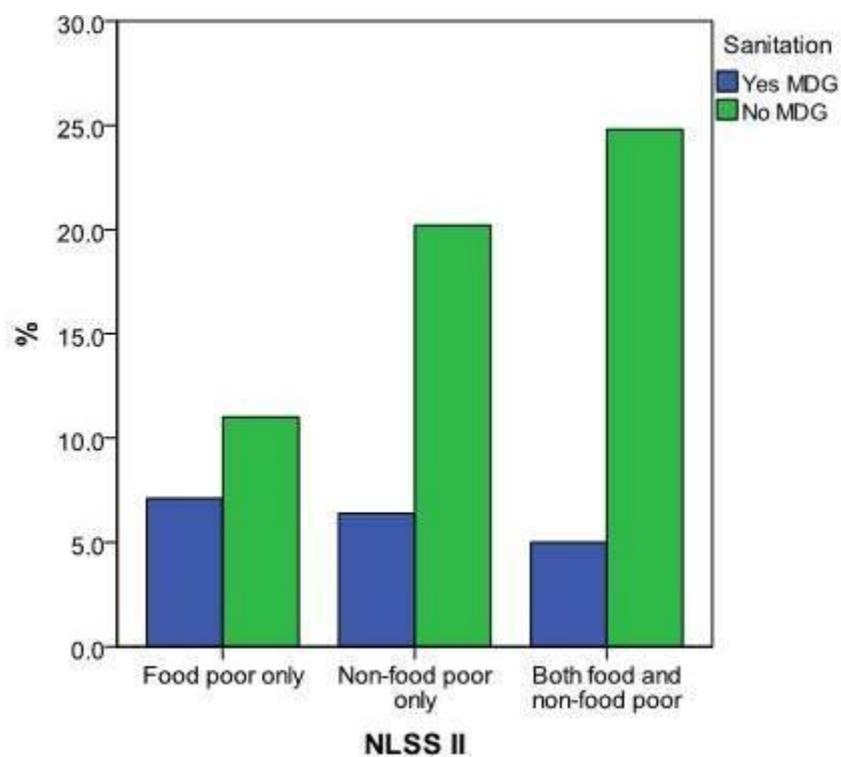
| Indicator               | Categories              | Food poor only (%) | Non-food poor only (%) | Both food and non-food poor (%) | Analysis 1 p | Analysis 2 p |
|-------------------------|-------------------------|--------------------|------------------------|---------------------------------|--------------|--------------|
| Time to market > 1 hour | No                      | 9.4                | 8.0                    | 8.8                             | <0.001       | ns           |
|                         | Yes                     | 9.1                | 22.4                   | 25.8                            |              |              |
| Caste                   | Dalit                   | 12.1               | 20.4                   | 25.9                            | <0.001       | <0.001       |
|                         | Disadvantaged non-Dalit | 11.0               | 11.6                   | 14.8                            |              |              |
|                         | Disadvantaged Janajatis | 8.8                | 19.1                   | 22.5                            |              |              |
|                         | Religious minority      | 17.2               | 12.4                   | 23.1                            |              |              |
|                         | Advantaged Janajatis    | 12.1               | 5.8                    | 5.6                             |              |              |
|                         | Upper Caste             | 6.2                | 10.2                   | 9.1                             |              |              |
| Residency               | Urban                   | 12.6               | 2.2                    | 4.7                             | <0.001       | ns           |
|                         | Rural                   | 8.9                | 15.2                   | 16.9                            |              |              |
| Dependency ratio        | <1                      | 8.2                | 12.2                   | 8.9                             | <0.001       | <0.001       |
|                         | ≥1                      | 10.5               | 15.9                   | 23.5                            |              |              |
| Loans                   | None                    | 8.2                | 11.4                   | 12.2                            | <0.001       | ns           |
|                         | Yes                     | 9.9                | 15.3                   | 17.8                            |              |              |
| Migration               | Non                     | 9.0                | 20.3                   | 19.2                            | <0.001       | ns           |
|                         | Within Nepal            | 8.5                | 13.0                   | 15.1                            |              |              |
|                         | From abroad             | 13.1               | 10.7                   | 15.5                            |              |              |
| Land owned              | None                    | 11.3               | 7.5                    | 11.2                            | <0.001       | ns           |
|                         | 0.2 ha                  | 9.1                | 16.8                   | 20.0                            |              |              |
|                         | 0.2-1.0 ha              | 8.0                | 16.3                   | 15.8                            |              |              |
|                         | 1.01+ ha                | 5.4                | 11.6                   | 5.4                             |              |              |
| Region                  | Eastern                 | 7.8                | 17.0                   | 17.1                            | <0.001       | <0.001       |
|                         | Central                 | 11.2               | 8.3                    | 13.3                            |              |              |
|                         | Western                 | 4.0                | 16.5                   | 12.1                            |              |              |
|                         | Mid-West                | 9.6                | 22.1                   | 24.5                            |              |              |
|                         | Far-West                | 17.8               | 13.4                   | 21.7                            |              |              |

**Table 7.7: Relationship between food and non-food poverty index and chronic poverty and vulnerability indicators in NLSS III**

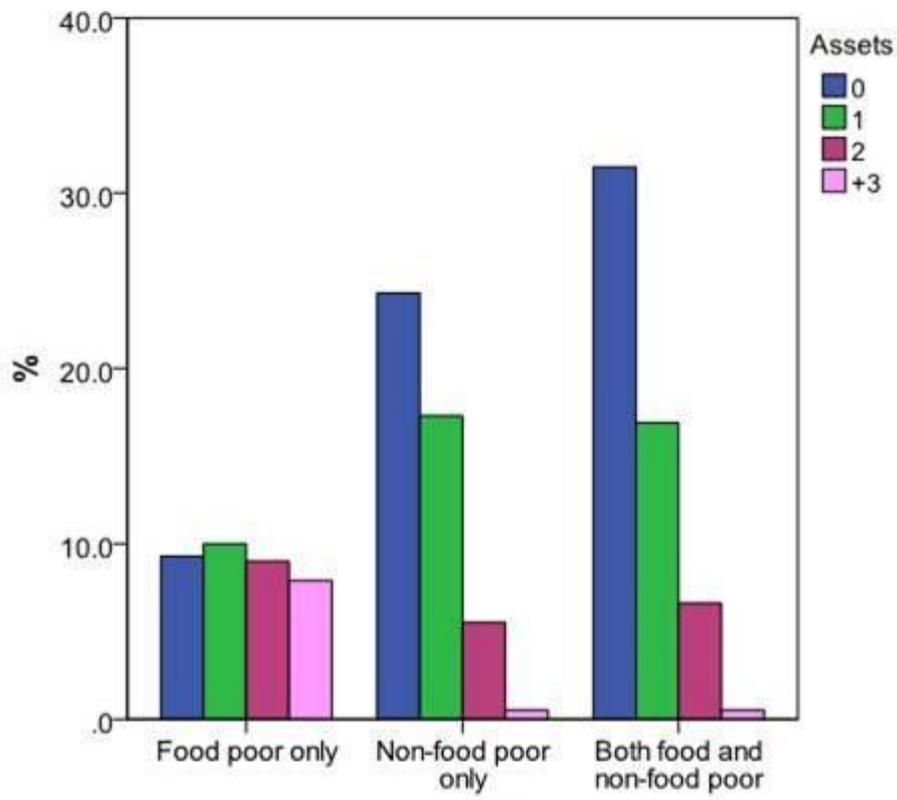
| Indicator                    | Categories  | Food poor only (%) | Non-food poor only (%) | Both food and non-food (%) | Analysis 1 p | Analysis 2 p |
|------------------------------|-------------|--------------------|------------------------|----------------------------|--------------|--------------|
| Adult illiteracy rate        | Literate    | 6.3                | 11.0                   | 6.9                        | <0.001       | <0.001       |
|                              | Illiterate  | 6.2                | 22.4                   | 17.2                       |              |              |
| Remittances                  | Yes         | 6.6                | 14.3                   | 9.7                        | <0.001       | ns           |
|                              | No          | 6.1                | 16.9                   | 12.3                       |              |              |
| Child mortality              | No death    | 6.8                | 15.4                   | 11.9                       | <0.001       | ns           |
|                              | Death       | 6.7                | 21.3                   | 18.4                       |              |              |
| Child immunisation           | Yes         | 7.0                | 20.7                   | 16.1                       | <0.001       | ns           |
|                              | No          | 8.2                | 21.7                   | 23.7                       |              |              |
| Electricity                  | Yes         | 5.7                | 11.6                   | 7.2                        | <0.001       | 0.001        |
|                              | No          | 7.9                | 28.3                   | 23.6                       |              |              |
| Drinking water               | Yes MDG     | 6.0                | 15.3                   | 10.0                       | <0.001       | ns           |
|                              | Not MDG     | 7.5                | 19.7                   | 18.8                       |              |              |
| Sanitation                   | Yes MDG     | 4.9                | 6.8                    | 3.5                        | <0.001       | <0.001       |
|                              | Not MDG     | 7.3                | 23.0                   | 17.6                       |              |              |
| Wall construction            | Good        | 4.8                | 7.6                    | 3.2                        | <0.001       | <0.001       |
|                              | Poor        | 7.1                | 20.6                   | 16.0                       |              |              |
| Roof construction            | Good        | 6.3                | 12.9                   | 9.0                        | <0.001       | <0.001       |
|                              | Poor        | 6.0                | 30.2                   | 22.8                       |              |              |
| Cooking                      | Good        | 4.3                | 6.1                    | 2.4                        | <0.001       | 0.006*       |
|                              | Poor        | 7.2                | 20.5                   | 15.6                       |              |              |
| Assets                       | 0           | 5.6                | 31.7                   | 28.4                       | <0.001       | <0.001       |
|                              | 1           | 7.9                | 25.5                   | 19.7                       |              |              |
|                              | 2           | 5.8                | 14.8                   | 8.6                        |              |              |
|                              | 3+          | 5.9                | 6.8                    | 3.5                        |              |              |
| Household head               | Female      | 7.1                | 12.4                   | 11.2                       | <0.001       | <0.001       |
|                              | Male        | 6.0                | 17.4                   | 11.6                       |              |              |
| Marital Status               | Not married | 5.1                | 11.3                   | 1.7                        | <0.001       | 0.002        |
|                              | Married     | 6.3                | 16.3                   | 11.8                       |              |              |
|                              | Divorced    | 5.9                | 15.7                   | 12.1                       |              |              |
| Time to health post > 1 hour | No          | 5.9                | 15.1                   | 9.9                        | <0.001       | ns           |
|                              | Yes         | 8.7                | 22.9                   | 22.1                       |              |              |
| Time to road head > 1 hour   | No          | 5.8                | 14.9                   | 9.9                        | <0.001       | ns           |
|                              | Yes         | 9.7                | 24.6                   | 23.6                       |              |              |

| Indicator               | Categories              | Food poor only (%) | Non-food poor only (%) | Both food and non-food (%) | Analysis 1 p | Analysis 2 p |
|-------------------------|-------------------------|--------------------|------------------------|----------------------------|--------------|--------------|
| Time to market > 1 hour | No                      | 5.7                | 12.7                   | 7.8                        | <0.001       | ns           |
|                         | Yes                     | 7.3                | 22.9                   | 19.2                       |              |              |
| Caste                   | Dalit                   | 7.0                | 27.2                   | 22.5                       | <0.001       | <0.001       |
|                         | Disadvantaged non-Dalit | 5.7                | 21.4                   | 15.3                       |              |              |
|                         | Disadvantaged Janajatis | 7.0                | 18.4                   | 12.3                       |              |              |
|                         | Religious minority      | 4.7                | 28.8                   | 7.9                        |              |              |
|                         | Advantaged Janajatis    | 4.5                | 9.8                    | 4.9                        |              |              |
| Upper Caste             | 6.2                     | 9.5                | 8.1                    |                            |              |              |
| Residency               | Urban                   | 4.5                | 12.9                   | 5.9                        | <0.001       | <0.001       |
|                         | Rural                   | 7.2                | 17.8                   | 14.5                       |              |              |
| Dependency ratio        | <1                      | 5.5                | 14.0                   | 7.2                        | <0.001       | <0.001       |
|                         | ≥1                      | 8.2                | 21.2                   | 22.4                       |              |              |
| Loans                   | None                    | 5.5                | 15.9                   | 10.2                       | 0.009*       | ns           |
|                         | Yes                     | 6.7                | 16.2                   | 12.3                       |              |              |
| Migration               | Non                     | 6.5                | 20.5                   | 15.1                       | <0.001       | <0.001       |
|                         | Within Nepal            | 6.0                | 10.1                   | 6.8                        |              |              |
|                         | From abroad             | 6.1                | 20.8                   | 14.7                       |              |              |
| Land owned              | None                    | 4.1                | 15.6                   | 8.6                        | <0.001       | <0.001       |
|                         | 0.2 ha                  | 7.0                | 21.3                   | 15.2                       |              |              |
|                         | 0.2-1.0 ha              | 7.3                | 15.7                   | 13.6                       |              |              |
|                         | 1.01+ ha                | 6.8                | 11.4                   | 6.6                        |              |              |
| Region                  | Eastern                 | 5.3                | 19.3                   | 8.3                        | <0.001       | <0.001       |
|                         | Central                 | 5.2                | 12.9                   | 9.4                        |              |              |
|                         | Western                 | 4.8                | 13.3                   | 9.5                        |              |              |
|                         | Mid-West                | 10.4               | 21.2                   | 17.2                       |              |              |
|                         | Far-West                | 10.2               | 20.5                   | 24.8                       |              |              |

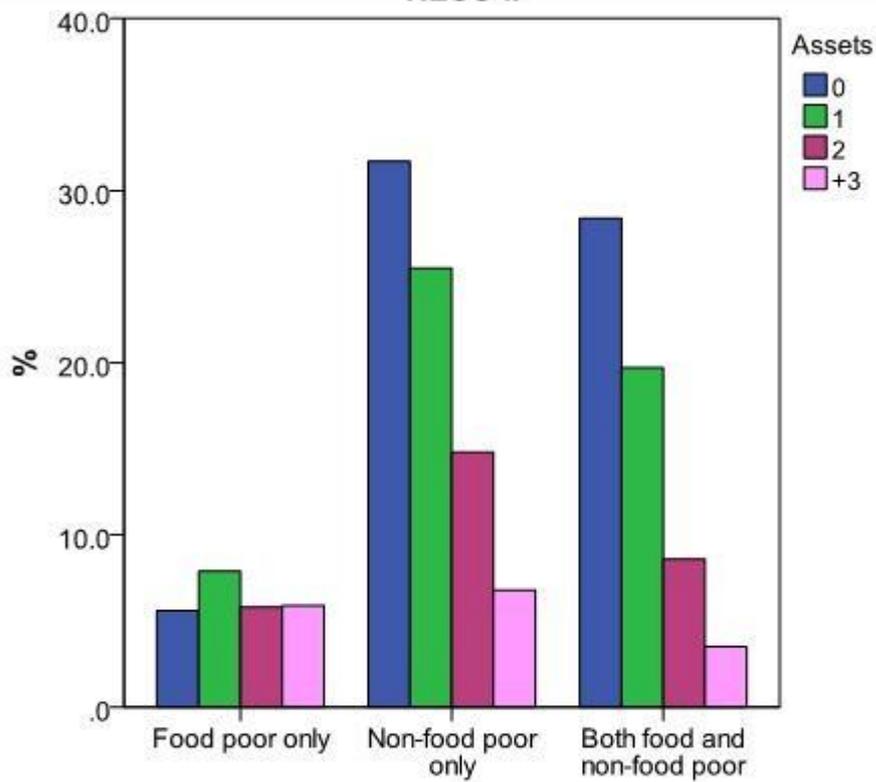
**Figure 7.13: Percentages of food poor only, non-food poor only and both food and non-food poor by sanitation in NLSS II and III**



**Figure 7.14: Percentages of food poor only, non-food poor only and both food and non-food poor by total number of assets in NLSS II and III**

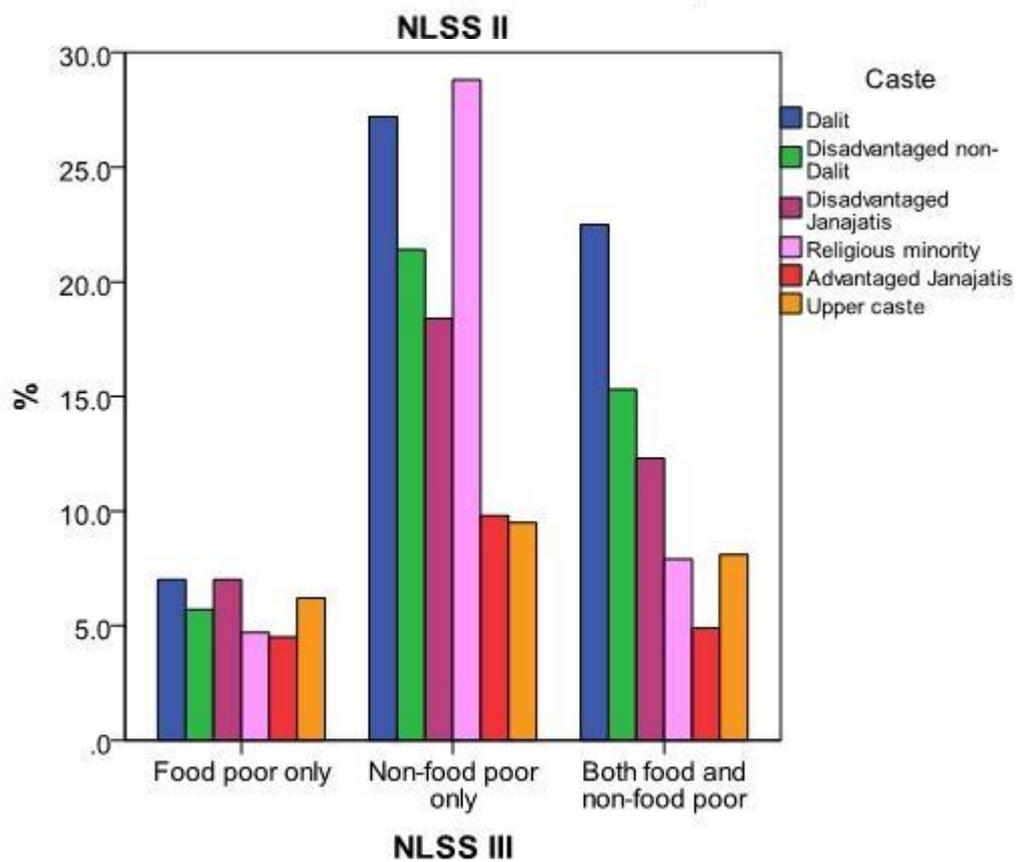
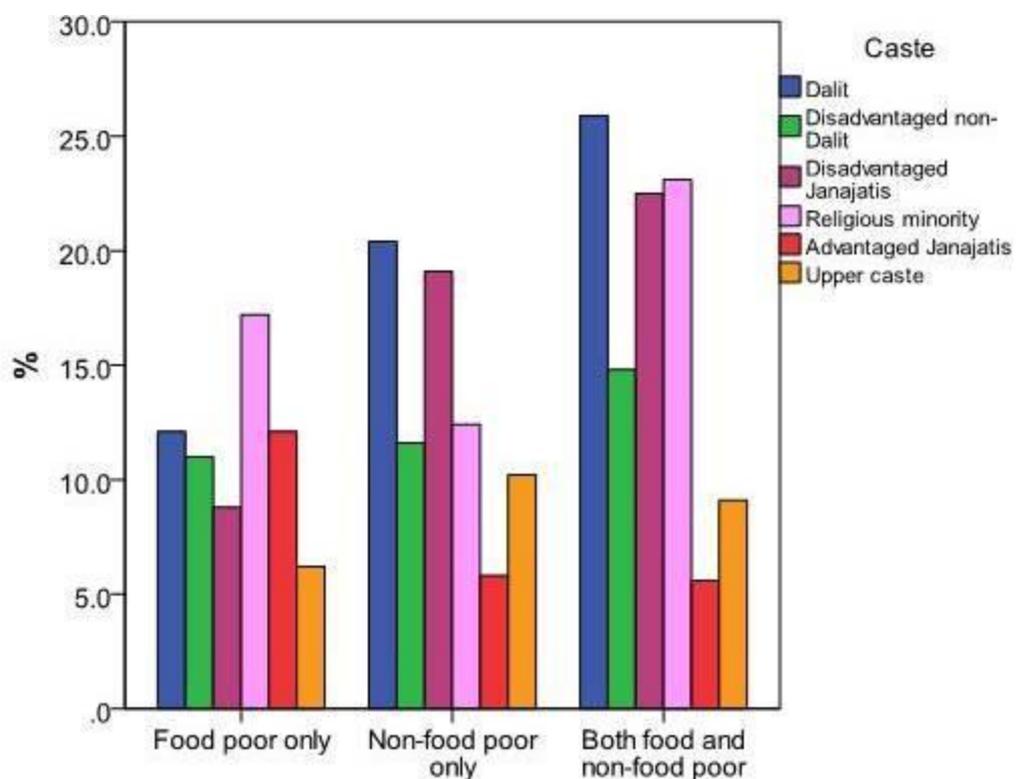


**NLSS II**

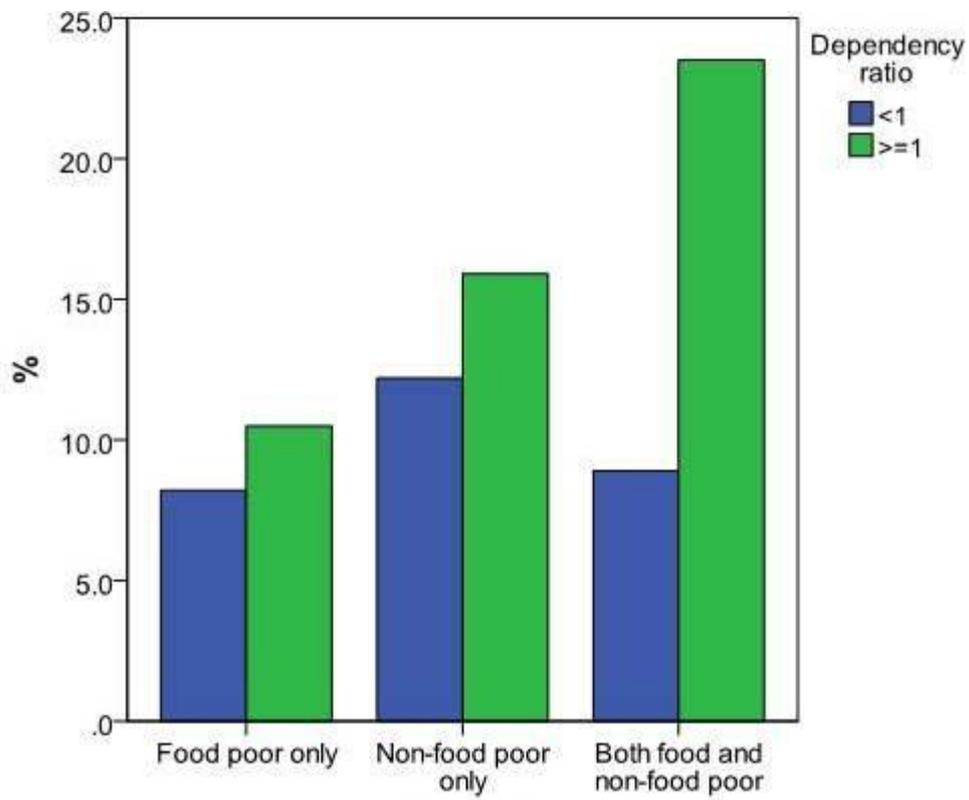


**NLSS III**

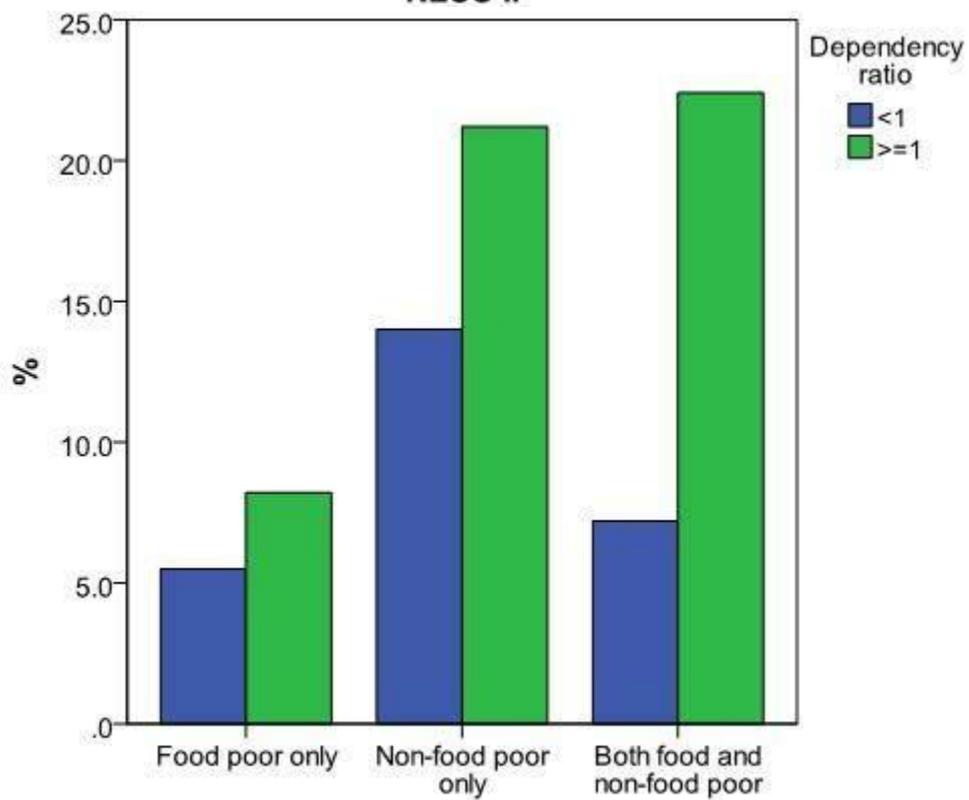
**Figure 7.15: Percentages of food poor only, non-food poor only and both food and non-food poor by caste in NLSS II and III**



**Figure 7.16: Percentages of food poor only, non-food poor only and both food and non-food poor by dependency ratio in NLSS II and III**

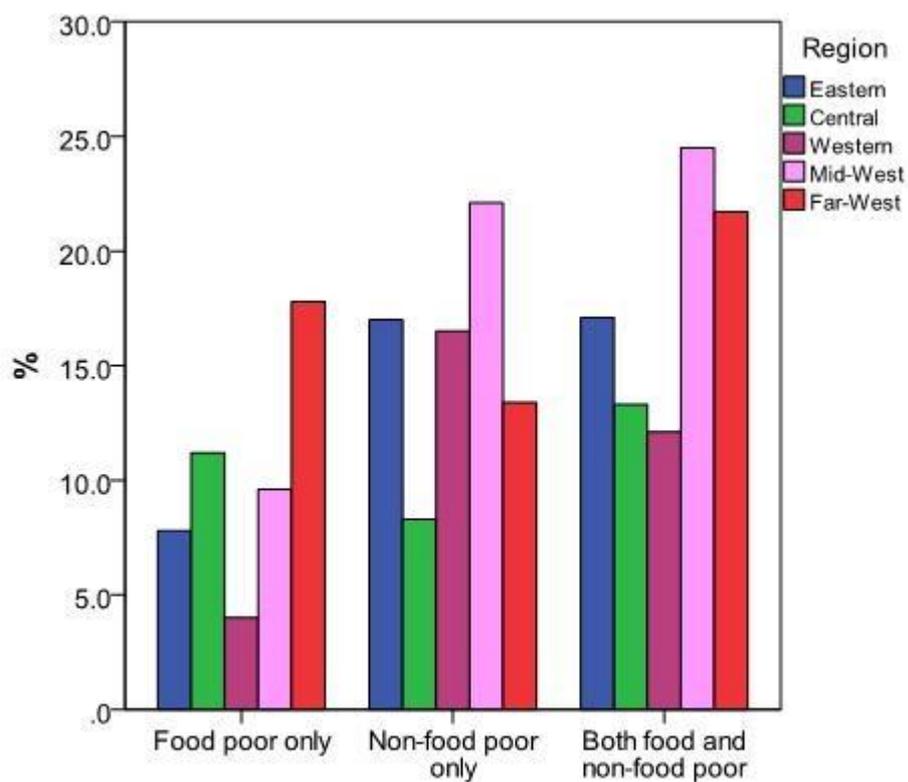


**NLSS II**

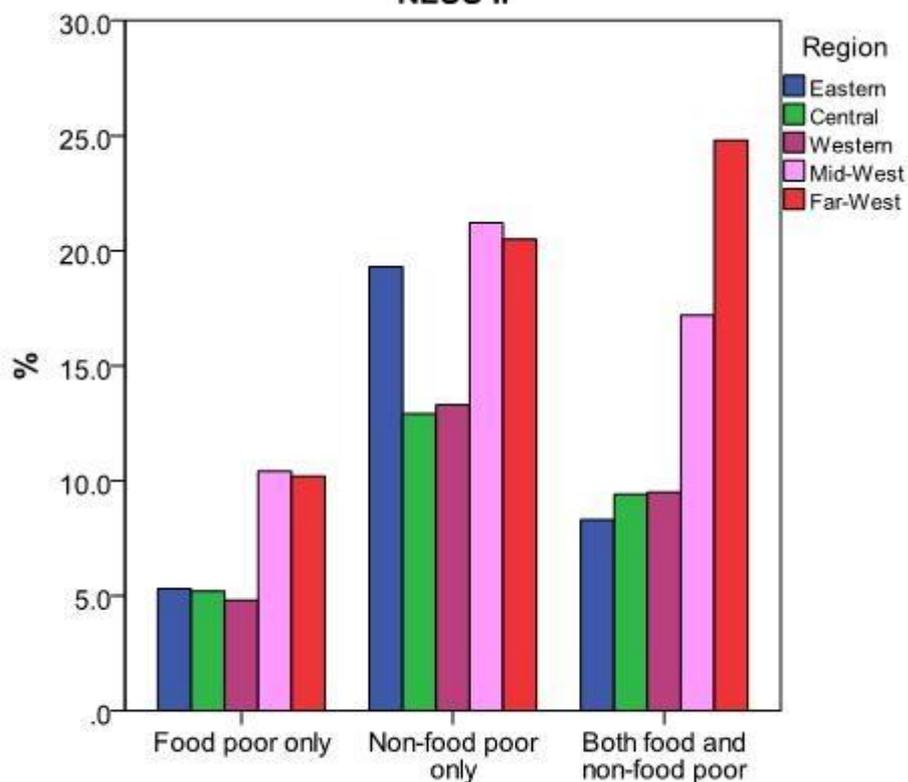


**NLSS III**

**Figure 7.17: Percentages of food poor only, non-food poor only and both food and non-food poor by region in NLSS II and III**



**NLSS II**



**NLSS III**

**Table 7.8: Order of importance of chronic poverty and vulnerability indicators in predicting non-poor, food poor only, non-food poor only and both food and non-food poor households in NLSS II and NLSS III**

| Step                                      | NLSS II                  | NLSS III                 |
|---|--------------------------|--------------------------|
| 1   | Total number of assets   | Total number of assets   |
| 2   | Electricity              | Sanitation               |
| 3   | Caste                    | Dependency ratio         |
| 4   | Region                   | Caste                    |
| 5   | Dependency ratio         | Region                   |
| 6   | Roof construction        | Land owned               |
| 7   | Cooking fuel             | Gender of household head |
| 8   | Remittances              | Roof construction        |
| 9   | Gender of household head | Adult illiteracy         |
| 10  | Adult illiteracy         | Residency                |
| 11  | Time to health centre    | Wall construction        |
| 12  | Sanitation               | Migration                |
| 13  | Wall construction        | Electricity              |
| 14  |                          | Cooking fuel             |
| <b>Classification correctly predicted</b> |                          |                          |
| <u>With all indicators</u>                |                          |                          |
| Not poor                                  | 91.8%                    | 93.8%                    |
| Food poor only                            | 2.1%                     | 0%                       |
| Non-food poor only                        | 19.1%                    | 24.7%                    |
| Both food and non-food poor               | 50.1%                    | 31.2%                    |
| Total                                     | 65.7%                    | 69.6%                    |
| <u>With indicators in model</u>           |                          |                          |
| Not poor                                  | 91.7%                    | 94.3%                    |
| Food poor only                            | 0.9%                     | 0%                       |
| Non-food poor only                        | 15.6%                    | 23.6%                    |
| Both food and non-food poor               | 50.2%                    | 30.8%                    |
| Total                                     | 65.4%                    | 69.6%                    |
| <u>With first 5 indicators only</u>       |                          |                          |
| Not poor                                  | 91.1%                    | 95.9%                    |
| Food poor only                            | 0.6%                     | 0%                       |
| Non-food poor only                        | 12.0%                    | 11.0%                    |
| Both food and non-food poor               | 47.6%                    | 31.9%                    |
| Total                                     | 64.1%                    | 68.8%                    |

**Table 7.9: Relationship between poverty gap indices and chronic poverty and vulnerability indicators in NLSS II**

| Indicator               | Categories  | Total PGI  |        |            |        | Food PGI   |        |            |        | Non-food PGI |        |            |        |
|-------------------------|-------------|------------|--------|------------|--------|------------|--------|------------|--------|--------------|--------|------------|--------|
|                         |             | Analysis 1 |        | Analysis 2 |        | Analysis 1 |        | Analysis 2 |        | Analysis 1   |        | Analysis 2 |        |
|                         |             | Mean       | p      | Mean       | p      | Mean       | p      | Mean       | p      | Mean         | p      | Mean       | p      |
| Adult illiteracy rate   | Literate    | 2.62       | <0.001 | 0          | <0.001 | 3.08       | <0.001 | 0          | <0.001 | 5.47         | <0.001 | 0          | <0.001 |
|                         | Illiterate  | 7.95       |        | 2.05       |        | 7.41       |        | 1.76       |        | 16.01        |        | 3.53       |        |
| Remittances             | Yes         | 1.17       | <0.001 | 0          | 0.040* | 1.27       | <0.001 | 0          | 0.007* | 2.90         | <0.001 | 0          | 0.004* |
|                         | No          | 6.09       |        | 1.31       |        | 5.98       |        | 1.68       |        | 12.27        |        | 2.77       |        |
| Child mortality         | No death    | 5.71       | 0.006* | 0          | 0.044* | 5.75       | 0.04*  | 0          | ns     | 11.02        | <0.001 | 0          | ns     |
|                         | Death       | 7.26       |        | 1.08       |        | 6.89       |        | 0.94       |        | 14.64        |        | 0.85       |        |
| Child immunisation      | Yes         | 6.82       | <0.001 | 0          | <0.001 | 6.62       | <0.001 | 0          | <0.001 | 13.48        | <0.001 | 0          | ns     |
|                         | No          | 11.20      |        | 2.75       |        | 11.07      |        | 2.75       |        | 19.47        |        | 1.89       |        |
| Electricity             | Yes         | 1.23       | <0.001 | 0          | 0.005* | 2.38       | <0.001 | 0          | ns     | 2.28         | <0.001 | 0          | <0.001 |
|                         | No          | 8.96       |        | 1.54       |        | 7.88       |        | 0.50       |        | 18.32        |        | 4.27       |        |
| Drinking water          | Yes MDG     | 4.54       | <0.001 | 0          | <0.001 | 4.70       | <0.001 | 0          | 0.009* | 9.29         | <0.001 | 0          | <0.001 |
|                         | Not MDG     | 10.02      |        | 1.83       |        | 8.77       |        | 1.32       |        | 19.84        |        | 2.89       |        |
| Sanitation              | Yes MDG     | 1.58       | <0.001 | 0          | <0.001 | 2.31       | <0.001 | 0          | 0.001  | 3.81         | <0.001 | 0          | <0.001 |
|                         | Not MDG     | 8.76       |        | 1.84       |        | 8.01       |        | 1.69       |        | 17.28        |        | 3.02       |        |
| Wall construction       | Good        | 4.32       | <0.001 | 0          | ns     | 4.38       | <0.001 | 0          | ns     | 8.27         | <0.001 | 0          | ns     |
|                         | Poor        | 6.90       |        | 0.35       |        | 6.64       |        | 0.40       |        | 14.55        |        | 0.26       |        |
| Roof construction       | Good        | 3.03       | <0.001 | 0          | <0.001 | 3.76       | <0.001 | 0          | <0.001 | 5.82         | <0.001 | 0          | <0.001 |
|                         | Poor        | 11.32      |        | 3.89       |        | 9.33       |        | 2.31       |        | 23.70        |        | 8.36       |        |
| Cooking                 | Good        | 0.20       | <0.001 | 0          | ns     | 1.63       | <0.001 | 0          | ns     | 0.15         | <0.001 | 0          | ns     |
|                         | Poor        | 7.07       |        | 0.64       |        | 6.57       |        | 0.62       |        | 14.39        |        | 1.17       |        |
| Assets                  | 0           | 11.67      | <0.001 | 3.60       | <0.001 | 9.84       | <0.001 | 2.63       | <0.001 | 23.44        | <0.001 | 7.54       | <0.001 |
|                         | 1           | 5.63       |        | -0.40      |        | 5.68       |        | 0.68       |        | 11.88        |        | -0.35      |        |
|                         | 2           | 1.94       |        | -0.70      |        | 2.73       |        | -0.52      |        | 3.48         |        | -1.55      |        |
|                         | 3+          | 0.14       |        | 0          |        | 1.35       |        | 0          |        | 0.22         |        | 0          |        |
| Household head          | Female      | 4.58       | 0.026* | 0          | <0.001 | 4.78       | ns     | 0          | 0.009* | 9.26         | 0.004* | 0          | <0.001 |
|                         | Male        | 5.73       |        | 2.34       |        | 5.58       |        | 1.41       |        | 11.63        |        | 5.27       |        |
| Marital Status          | Not married | 3.04       | ns     | 1.53       | ns     | 2.72       | ns     | 0.65       | ns     | 5.90         | 0.014* | 0.47       | ns     |
|                         | Married     | 5.55       |        | 0.92       |        | 5.48       |        | 0.89       |        | 11.07        |        | 0.42       |        |
|                         | Divorced    | 5.67       |        | 0          |        | 5.49       |        | 0          |        | 12.79        |        | 0          |        |
| Time to health post > 1 | No          | 4.16       | <0.001 | 0          | <0.001 |            | <0.001 | 0          | <0.001 | 3.55         | <0.001 | 0          | <0.001 |

| Indicator                  | Categories              | Total PGI  |        |            |        | Food PGI   |        |            |        | Non-food PGI |        |            |        |
|----------------------------|-------------------------|------------|--------|------------|--------|------------|--------|------------|--------|--------------|--------|------------|--------|
|                            |                         | Analysis 1 |        | Analysis 2 |        | Analysis 1 |        | Analysis 2 |        | Analysis 1   |        | Analysis 2 |        |
|                            |                         | Mean       | p      | Mean       | p      | Mean       | p      | Mean       | p      | Mean         | p      | Mean       | p      |
| hour                       | Yes                     | 11.65      |        | 2.89       |        |            |        | 2.14       |        | 23.07        |        | 4.14       |        |
| Time to road head > 1 hour | No                      | 4.07       | <0.001 | 0          | 0.005* |            | <0.001 | 0          | ns     | 7.75         | <0.001 | 0          | <0.001 |
|                            | Yes                     | 11.04      |        | 1.78       |        |            |        | 1.11       |        | 24.30        |        | 5.81       |        |
| Time to market > 1 hour    | No                      | 2.93       | <0.001 | 0          | ns     |            | <0.001 | 0          | ns     | 5.54         | <0.001 | 0          | ns     |
|                            | Yes                     | 9.19       |        | 0.24       |        |            |        | 0.05       |        | 19.18        |        | 0.80       |        |
| Caste                      | Dalit                   | 8.97       | <0.001 | 1.86       | <0.001 | 8.80       | <0.001 | 3.00       | <0.001 | 17.46        | <0.001 | 2.34       | <0.001 |
|                            | Disadvantaged non-Dalit | 4.67       |        | 0.08       |        | 4.88       |        | 0.74       |        | 8.46         |        | -1.42      |        |
|                            | Disadvantaged Janajatis | 8.25       |        | 2.87       |        | 7.21       |        | 2.93       |        | 17.03        |        | 4.83       |        |
|                            | Religious minority      | 7.79       |        | 2.06       |        | 8.27       |        | 3.23       |        | 13.37        |        | 1.96       |        |
|                            | Advantaged Janajatis    | 2.06       |        | 1.84       |        | 3.75       |        | 2.51       |        | 4.26         |        | 3.55       |        |
|                            | Upper Caste             | 2.88       |        | 0          |        | 2.99       |        | 0          |        | 6.29         |        | 0          |        |
| Residency                  | Urban                   | 1.77       | 0.040* | -0.74      | ns     | 3.77       | 0.017* | -1.37      | ns     | 2.71         | 0.001  | 0.36       | ns     |
|                            | Rural                   | 5.89       |        | 0          |        | 5.59       |        | 0          |        | 12.65        |        | 0          |        |
| Dependency ratio           | <1                      | 2.92       | <0.001 | 0          | <0.001 | 3.20       | <0.001 | 0          | <0.001 | 7.18         | <0.001 | 0          | <0.001 |
|                            | ≥1                      | 8.39       |        | 4.02       |        | 7.89       |        | 3.58       |        | 15.59        |        | 5.42       |        |
| Loans                      | None                    | 4.26       | <0.001 | 0          | ns     | 4.20       | <0.001 | 0          | ns     | 8.87         | <0.001 | 0          | ns     |
|                            | Yes                     | 6.19       |        | 0.01       |        | 6.08       |        | 0.73       |        | 12.41        |        | 0.65       |        |
| Migration                  | Non                     | 7.37       | <0.001 | 0.25       | ns     | 6.83       | <0.001 | -0.60      | ns     | 15.55        | <0.001 | 0.66       | ns     |
|                            | Within Nepal            | 5.20       |        | 0.41       |        | 5.07       |        | -0.32      |        | 10.45        |        | 0.27       |        |
|                            | From abroad             | 4.83       |        | 0          |        | 5.50       |        | 0          |        | 9.50         |        | 0          |        |
| Land owned                 | None                    | 3.81       | <0.001 | 1.14       | ns     | 4.54       | <0.001 | 1.56       | ns     | 7.08         | <0.001 | -0.39      | ns     |
|                            | 0.2 ha                  | 7.11       |        | 1.11       |        | 6.69       |        | 1.34       |        | 14.01        |        | -0.63      |        |
|                            | 0.2-1.0 ha              | 5.37       |        | 0.17       |        | 4.97       |        | 0.49       |        | 11.72        |        | -1.54      |        |
|                            | 1.01 ha                 | 2.27       |        | 0          |        | 2.18       |        | 0          |        | 6.81         |        | 0          |        |
| Region                     | Eastern                 | 6.14       | <0.001 | -2.54      | <0.001 | 5.36       | <0.001 | -3.90      | <0.001 | 14.18        | <0.001 | 0.50       | ns     |
|                            | Central                 | 4.65       |        | -1.49      |        | 5.29       |        | -2.40      |        | 8.37         |        | 0.46       |        |
|                            | Western                 | 4.28       |        | -1.82      |        | 3.49       |        | -4.21      |        | 10.26        |        | 2.29       |        |
|                            | Mid-West                | 8.28       |        | -0.63      |        | 7.92       |        | -1.32      |        | 15.96        |        | 0.88       |        |
|                            | Far-West                | 7.07       |        | 0          |        | 7.70       |        | 0          |        | 11.21        |        | 0          |        |

**Table 7.10: Relationship between Poverty Gap Indices and chronic poverty and vulnerability indicators in NLSS III**

| Indicator               | Categories  | Total PGI  |        |            |        | Food PGI   |        |            |        | Non-food PGI |        |            |        |
|-------------------------|-------------|------------|--------|------------|--------|------------|--------|------------|--------|--------------|--------|------------|--------|
|                         |             | Analysis 1 |        | Analysis 2 |        | Analysis 1 |        | Analysis 2 |        | Analysis 1   |        | Analysis 2 |        |
|                         |             | Mean       | p      | Mean       | p      | Mean       | p      | Mean       | p      | Mean         | p      | Mean       | p      |
| Adult illiteracy rate   | Literate    | 2.33       | <0.001 | 0          | <0.001 | 2.72       | <0.001 | 0          | ns     | 5.20         | <0.001 | 0          | <0.001 |
|                         | Illiterate  | 6.01       |        | 1.28       |        | 5.26       |        | 0.59       |        | 13.68        |        | 3.16       |        |
| Remittances             | Yes         | 3.00       | <0.001 | 0          | 0.003* | 3.11       | <0.001 | 0          | 0.031* | 7.34         | <0.001 | 0          | 0.008* |
|                         | No          | 4.40       |        | 0.84       |        | 4.18       |        | 0.63       |        | 9.69         |        | 1.16       |        |
| Child mortality         | No death    | 4.08       | <0.001 | 0          | ns     | 3.99       | <0.001 | 0          | ns     | 8.83         | <0.001 | 0          | ns     |
|                         | Death       | 6.56       |        | 0.28       |        | 5.89       |        | 0.12       |        | 13.83        |        | 0.51       |        |
| Child immunisation      | Yes         | 5.53       | <0.001 | 0          | ns     | 5.09       | <0.001 | 0          | 0.011* | 12.08        | <0.001 | 0          | ns     |
|                         | No          | 8.53       |        | 1.10       |        | 7.75       |        | 1.54       |        | 16.61        |        | 0.45       |        |
| Electricity             | Yes         | 2.32       | <0.001 | 0          | <0.001 | 2.46       | <0.001 | 0          | <0.001 | 5.45         | <0.001 | 0          | <0.001 |
|                         | No          | 8.51       |        | 1.58       |        | 7.69       |        | 1.54       |        | 18.68        |        | 3.26       |        |
| Drinking water          | Yes MDG     | 3.41       | <0.001 | 0          | ns     | 3.35       | <0.001 | 0          | 0.048* | 8.03         | <0.001 | 0          | ns     |
|                         | Not MDG     | 6.63       |        | 0.64       |        | 6.28       |        | 0.73       |        | 13.48        |        | 0.19       |        |
| Sanitation              | Yes MDG     | 1.18       | <0.001 | 0          | <0.001 | 1.75       | <0.001 | 0          | 0.014* | 2.57         | <0.001 | 0          | <0.001 |
|                         | Not MDG     | 6.06       |        | 1.41       |        | 5.43       |        | 0.88       |        | 13.77        |        | 3.33       |        |
| Wall construction       | Good        | 1.14       | <0.001 | 0          | 0.039* | 1.54       | <0.001 | 0          | ns     | 2.90         | <0.001 | 0          | 0.003* |
|                         | Poor        | 5.49       |        | 1.14       |        | 5.10       |        | 0.51       |        | 12.24        |        | 1.62       |        |
| Roof construction       | Good        | 3.03       | <0.001 | 0          | <0.001 | 3.21       | <0.001 | 0          | ns     | 6.59         | <0.001 | 0          | <0.001 |
|                         | Poor        | 8.07       |        | 1.74       |        | 6.64       |        | 0.43       |        | 19.42        |        | 5.51       |        |
| Cooking                 | Good        | 0.89       | <0.001 | 0          | ns     | 1.35       | <0.001 | 0          | ns     | 2.03         | <0.001 | 0          | 0.045* |
|                         | Poor        | 5.34       |        | 0.23       |        | 4.97       |        | 0.14       |        | 12.08        |        | 1.37       |        |
| Assets                  | 0           | 10.24      | <0.001 | 5.07       | <0.001 | 8.34       | <0.001 | 3.04       | <0.001 | 22.83        | <0.001 | 11.96      | <0.001 |
|                         | 1           | 7.03       |        | 2.72       |        | 6.39       |        | 1.85       |        | 15.72        |        | 6.68       |        |
|                         | 2           | 2.65       |        | 0.25       |        | 2.89       |        | 0.03       |        | 6.29         |        | 1.39       |        |
|                         | 3+          | 1.07       |        | 0          |        | 1.62       |        | 0          |        | 2.46         |        | 0          |        |
| Household head          | Female      | 3.74       | ns     | 0          | 0.002  | 3.91       | ns     | -0.30      | ns     | 7.82         | 0.002  | 0          | <0.001 |
|                         | Male        | 4.04       |        | 1.06       |        | 3.83       |        | 0          |        | 9.38         |        | 3.53       |        |
| Marital Status          | Not married | 0.78       | <0.001 | -0.69      | ns     | 1.34       | 0.004  | -0.12      | ns     | 2.65         | <0.001 | -1.96      | ns     |
|                         | Married     | 4.11       |        | 0.77       |        | 3.98       |        | 0.77       |        | 9.12         |        | 0.38       |        |
|                         | Divorced    | 3.67       |        | 0          |        | 3.49       |        | 0          |        | 9.38         |        | 0          |        |
| Time to health post > 1 | No          | 3.43       | <0.001 | 0          | ns     | 3.34       | <0.001 | 0          | 0.010* | 7.83         | <0.001 | 0          | ns     |

| Indicator                  | Categories              | Total PGI  |        |            |        | Food PGI   |        |            |        | Non-food PGI |        |            |        |
|----------------------------|-------------------------|------------|--------|------------|--------|------------|--------|------------|--------|--------------|--------|------------|--------|
|                            |                         | Analysis 1 |        | Analysis 2 |        | Analysis 1 |        | Analysis 2 |        | Analysis 1   |        | Analysis 2 |        |
|                            |                         | Mean       | p      | Mean       | p      | Mean       | p      | Mean       | p      | Mean         | p      | Mean       | p      |
| hour                       | Yes                     | 8.02       |        | 0.63       |        | 7.73       |        | 1.17       |        | 17.52        |        | 0.31       |        |
| Time to road head > 1 hour | No                      | 3.41       | <0.001 | 0          | ns     | 3.29       | <0.001 | 0          | ns     | 7.92         | <0.001 | 0          | ns     |
|                            | Yes                     | 7.73       |        | 0.60       |        | 7.66       |        | 0.06       |        | 16.62        |        | 0.06       |        |
| Time to market > 1 hour    | No                      | 2.59       | <0.001 | 0          | ns     | 2.60       | <0.001 | 0          | ns     | 6.19         | <0.001 | 0          | ns     |
|                            | Yes                     | 6.78       |        | 0.49       |        | 6.40       |        | 0.48       |        | 14.63        |        | 0.70       |        |
| Caste                      | Dalit                   | 7.98       | <0.001 | 2.13       | <0.001 | 6.62       | <0.001 | 1.45       | 0.003* | 18.19        | <0.001 | 5.52       | <0.001 |
|                            | Disadvantaged non-Dalit | 4.76       |        | 1.54       |        | 4.00       |        | 0.93       |        | 11.55        |        | 4.41       |        |
|                            | Disadvantaged Janajatis | 4.37       |        | 1.04       |        | 4.34       |        | 0.96       |        | 10.13        |        | 2.62       |        |
|                            | Religious minority      | 3.65       |        | -0.35      |        | 2.65       |        | -0.85      |        | 12.27        |        | 3.26       |        |
|                            | Advantaged Janajatis    | 1.87       |        | 0.09       |        | 1.91       |        | -0.20      |        | 4.05         |        | 0.63       |        |
|                            | Upper Caste             | 2.61       |        | 0          |        | 3.10       |        | 0          |        | 5.18         |        | 0          |        |
| Residency                  | Urban                   | 2.34       | <0.001 | 0          | <0.001 | 2.13       | <0.001 | 0          | ns     | 5.92         | <0.001 | 0          | <0.001 |
|                            | Rural                   | 4.83       |        | 1.79       |        | 4.77       |        | 0.68       |        | 10.59        |        | 5.08       |        |
| Dependency ratio           | <1                      | 2.36       | <0.001 | 0          | <0.001 | 2.50       | <0.001 | 0          | <0.001 | 6.20         | <0.001 | 0          | <0.001 |
|                            | ≥1                      | 8.00       |        | 4.09       |        | 7.24       |        | 3.47       |        | 15.92        |        | 6.21       |        |
| Loans                      | None                    | 3.53       | 0.014  | 0          | ns     | 3.39       | 0.009  | 0          | ns     | 8.35         | 0.041  | 0          | ns     |
|                            | Yes                     | 4.23       |        | 0.09       |        | 4.13       |        | 0.02       |        | 9.33         |        | 0.60       |        |
| Migration                  | Non                     | 5.20       | <0.001 | -0.26      | ns     | 4.86       | <0.001 | 0.35       | ns     | 11.65        | <0.001 | -1.82      | ns     |
|                            | Within Nepal            | 2.42       |        | -0.67      |        | 2.66       |        | -0.03      |        | 5.46         |        | -2.40      |        |
|                            | From abroad             | 4.11       |        | 0          |        | 3.07       |        | 0          |        | 10.90        |        | 0          |        |
| Land owned                 | None                    | 3.15       | <0.001 | 2.58       | <0.001 | 2.56       | <0.001 | 1.30       | 0.018* | 8.04         | <0.001 | 6.28       | <0.001 |
|                            | 0.2 ha                  | 5.49       |        | 2.11       |        | 5.01       |        | 1.49       |        | 12.25        |        | 4.54       |        |
|                            | 0.2-1.0 ha              | 4.52       |        | 1.30       |        | 4.67       |        | 1.05       |        | 9.48         |        | 2.27       |        |
|                            | 1.01 ha                 | 2.00       |        | 0          |        | 2.61       |        | 0          |        | 5.04         |        | 0          |        |
| Region                     | Eastern                 | 2.82       | <0.001 | --4.95     | <0.001 | 2.46       | <0.001 | -4.37      | 0.001  | 8.91         | <0.001 | -7.19      | <0.001 |
|                            | Central                 | 3.38       |        | -2.85      |        | 3.38       |        | -2.22      |        | 7.01         |        | -5.52      |        |
|                            | Western                 | 2.91       |        | -3.17      |        | 2.86       |        | -3.01      |        | 6.77         |        | -5.04      |        |
|                            | Mid-West                | 6.18       |        | -3.02      |        | 6.35       |        | -1.89      |        | 13.37        |        | -5.12      |        |
|                            | Far-West                | 8.34       |        | 0          |        | 7.80       |        | 0          |        | 15.99        |        | 0          |        |

Figure 7.18: Mean poverty gap indices by sanitation in NLSS II and III

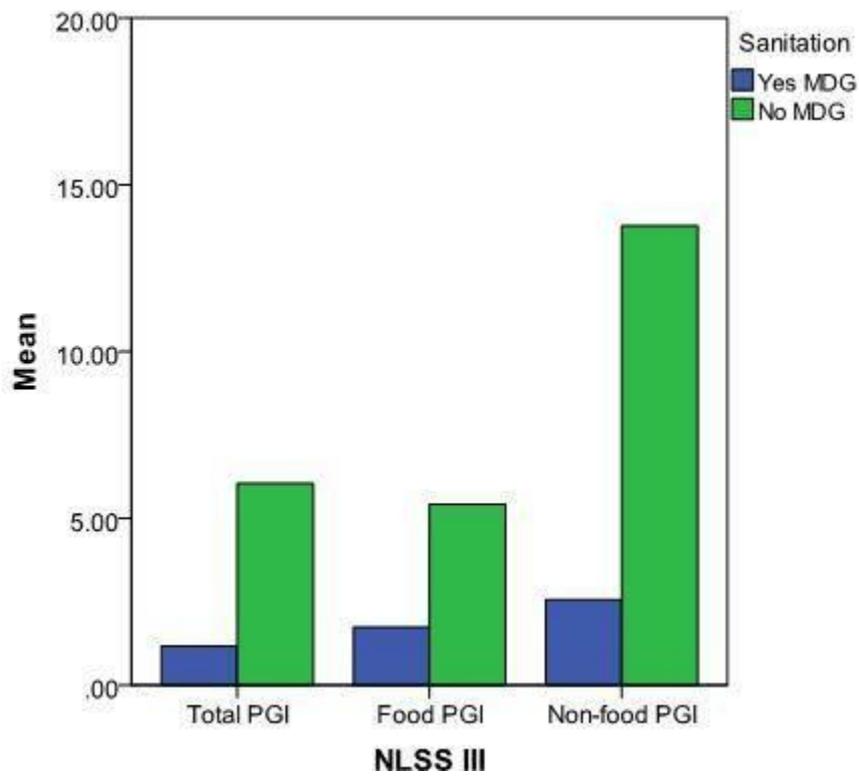
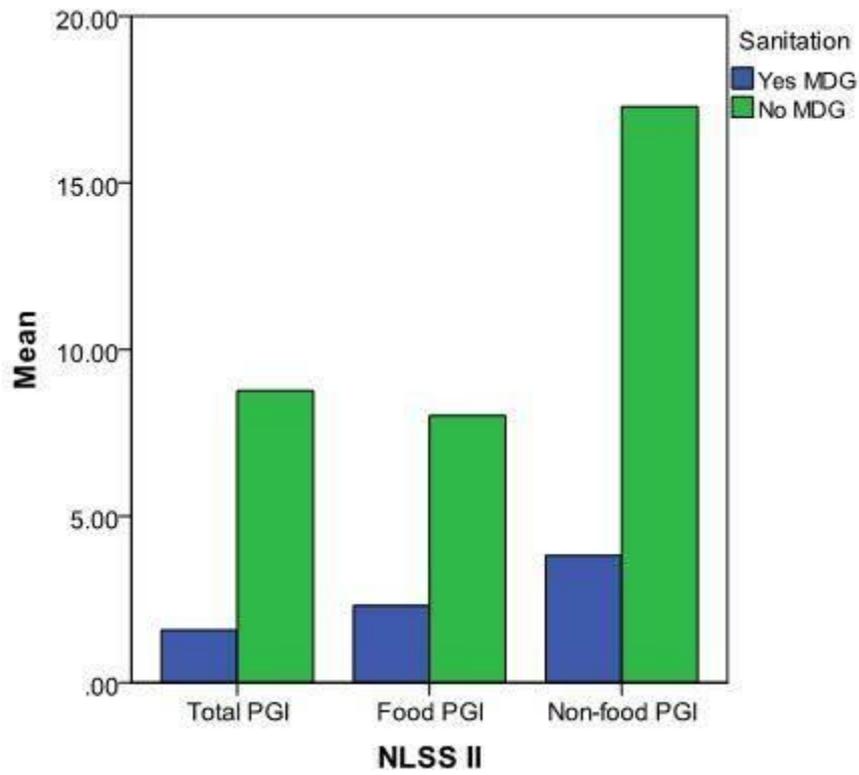


Figure 7.19: Mean poverty gap indices by total number of assets in NLSS II and III

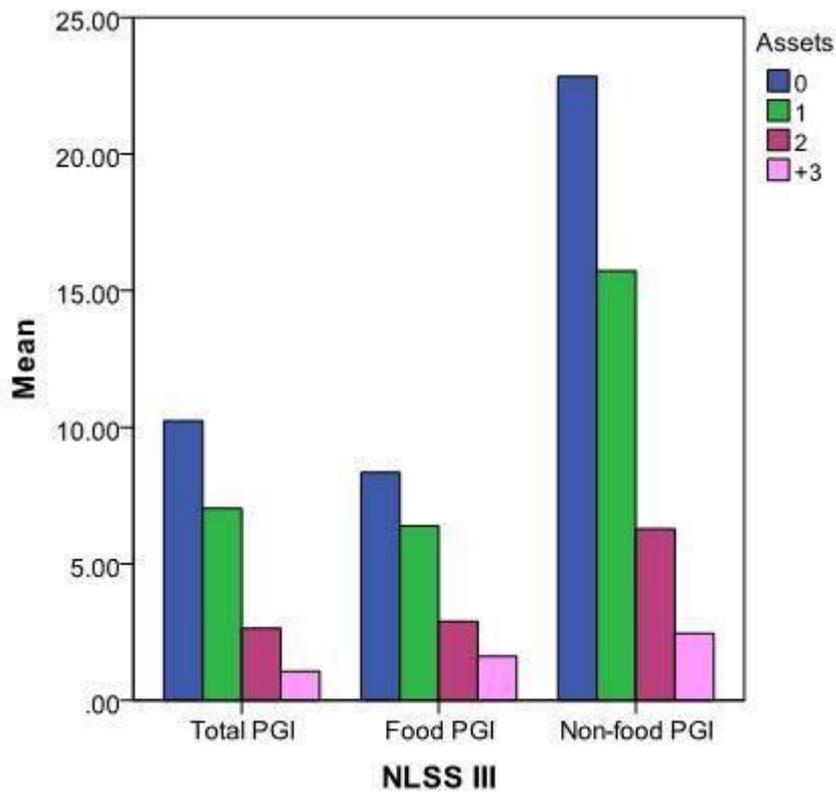
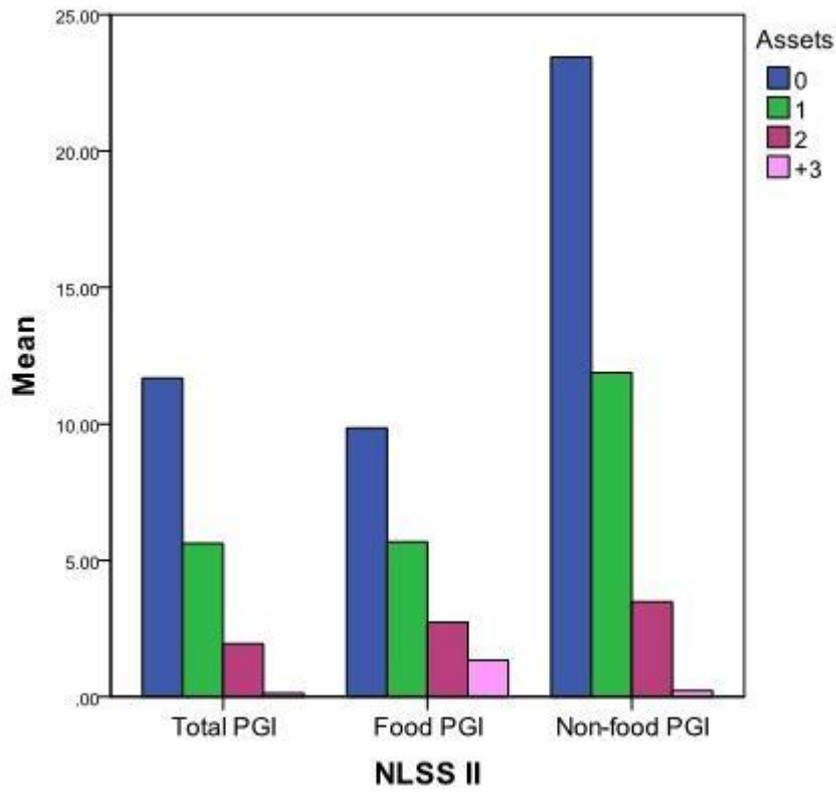


Figure 7.20: Mean poverty gap indices by caste in NLSS II and III

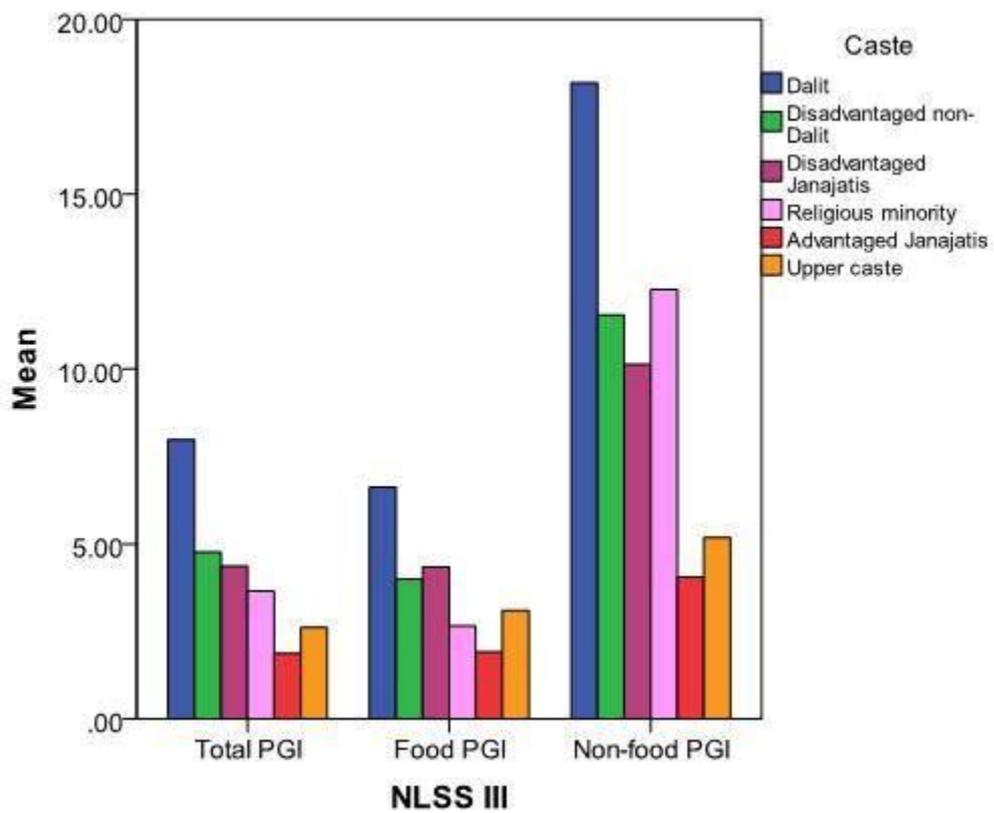
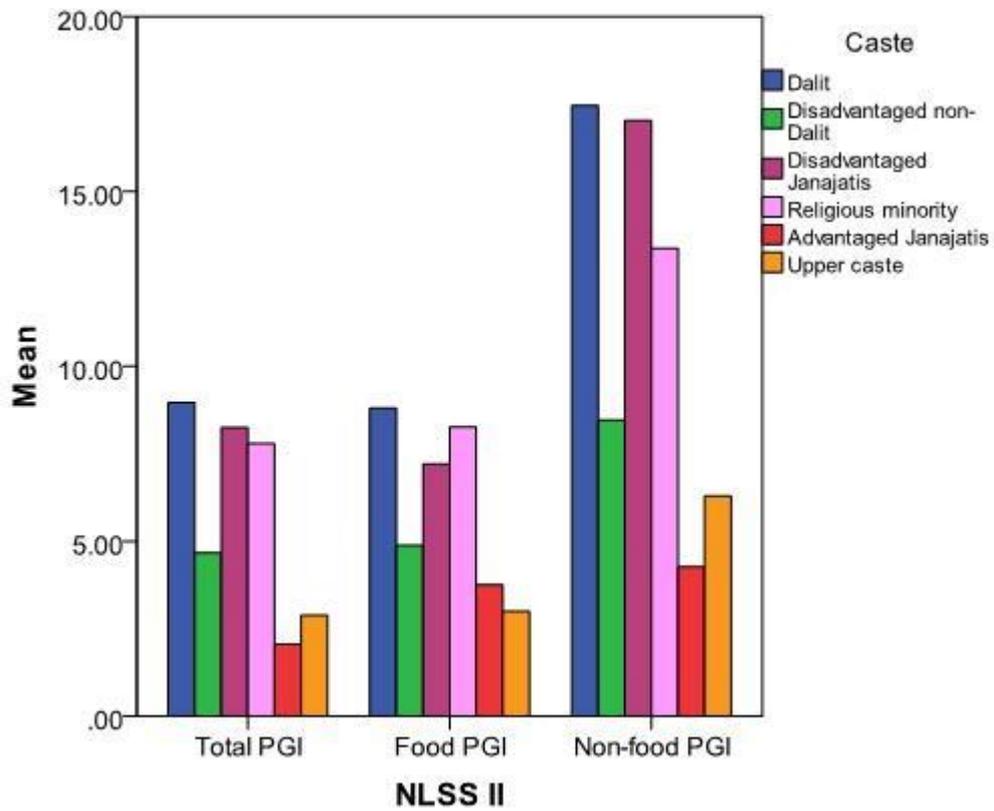


Figure 7.21: Mean poverty gap indices by dependency ratio in NLSS II and III

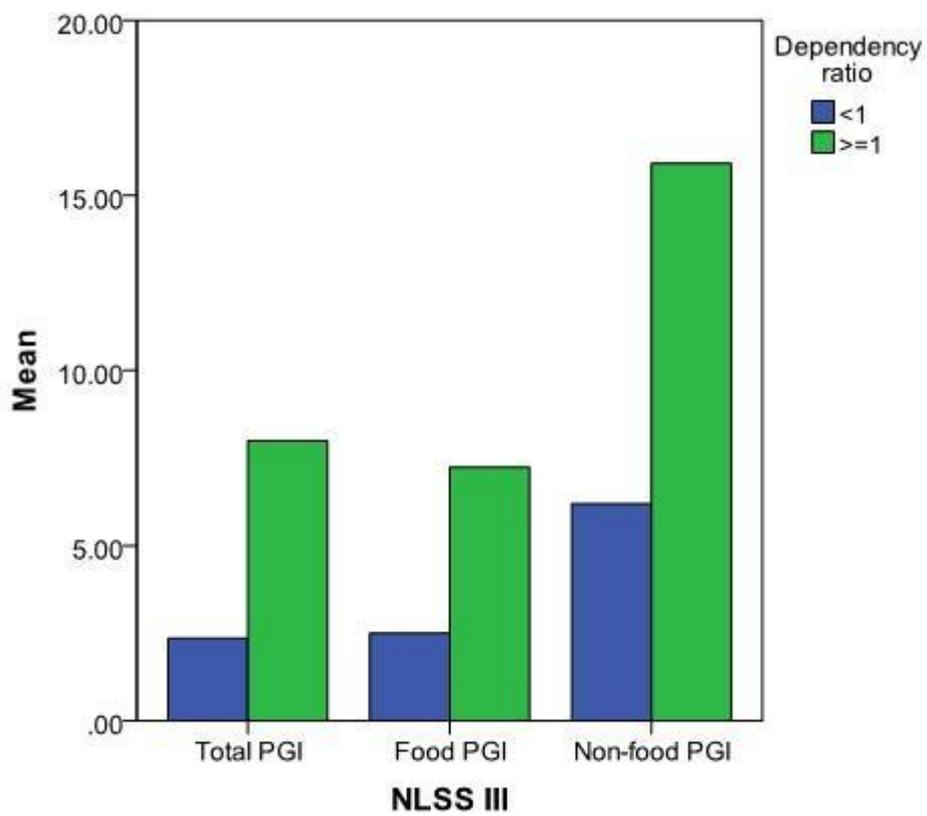
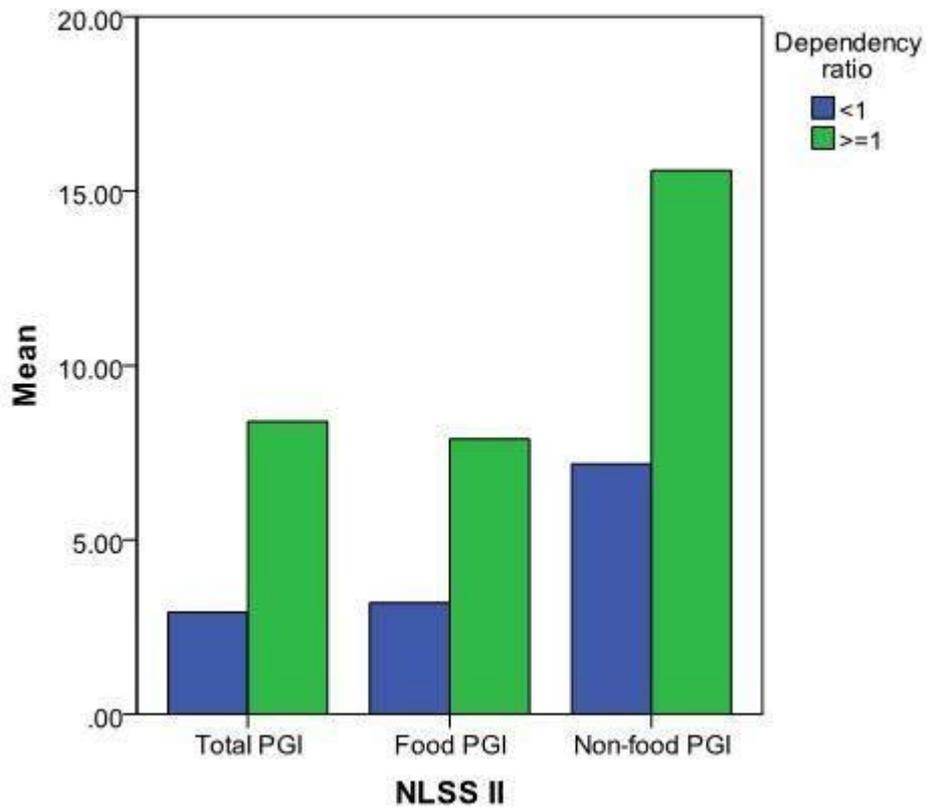


Figure 7.22: Mean poverty gap indices by region in NLSS II and III

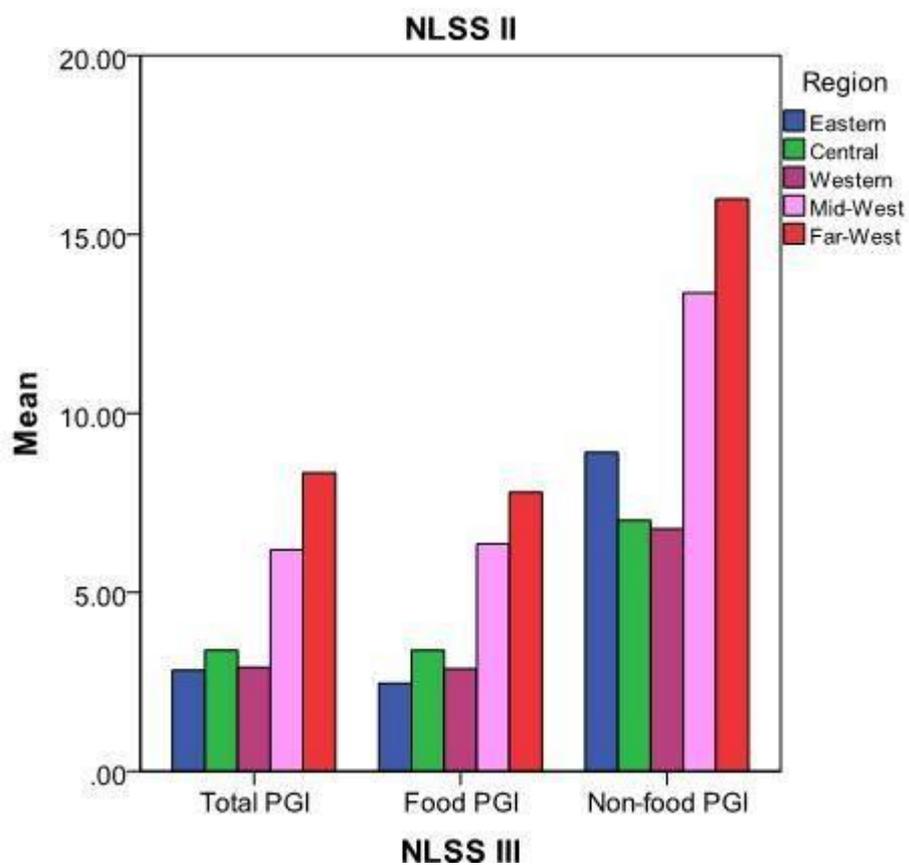
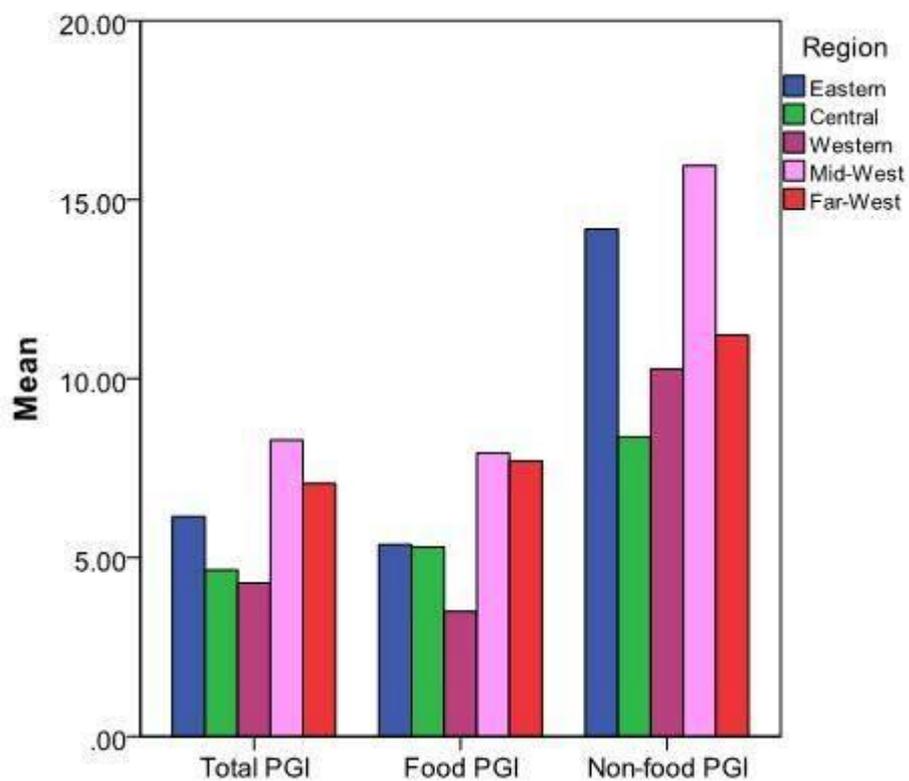
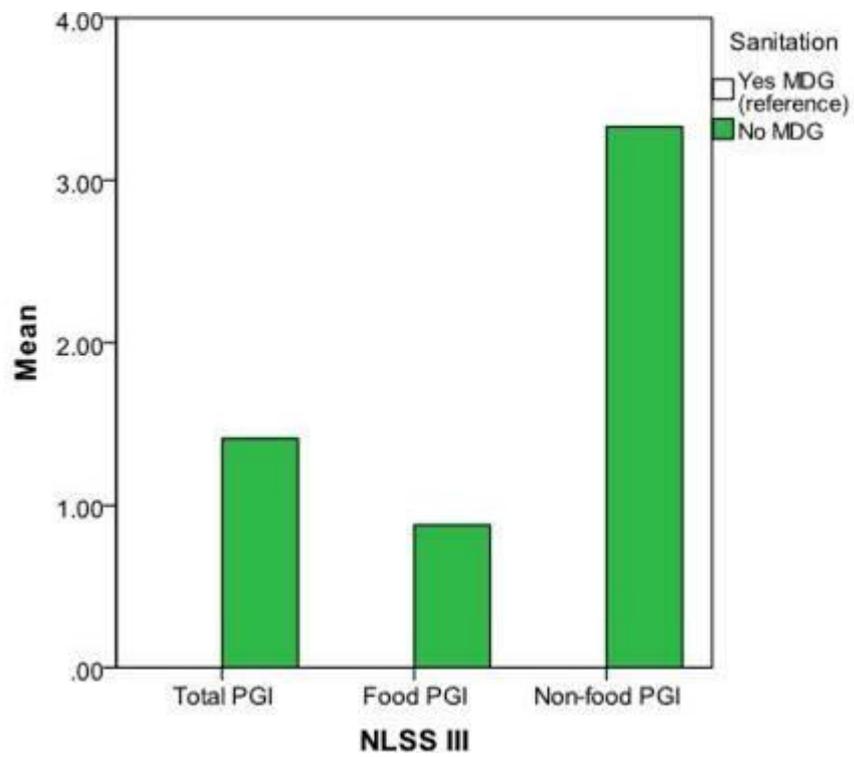
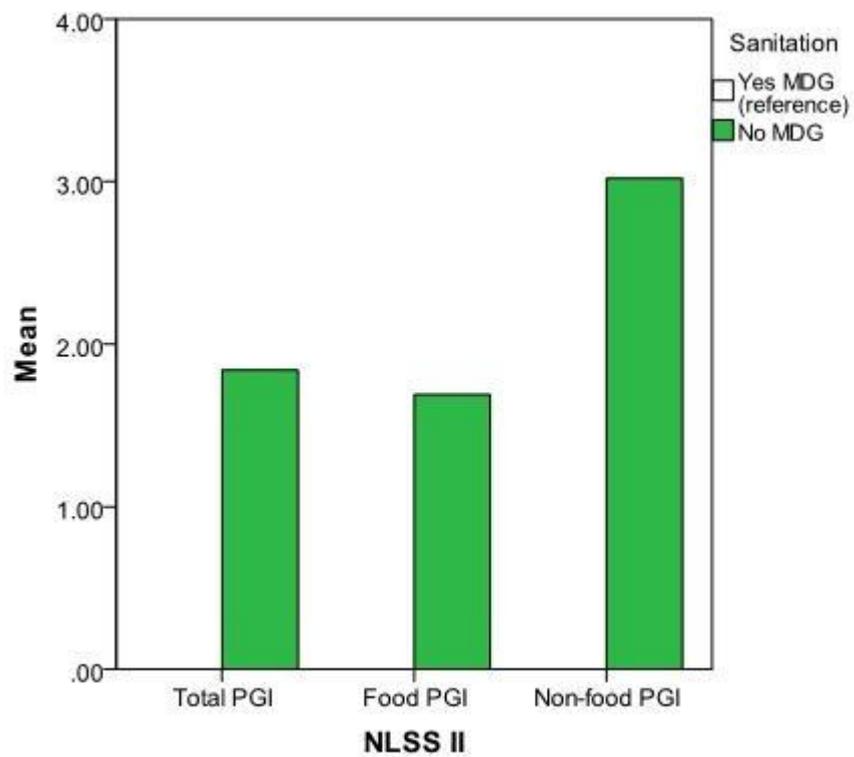
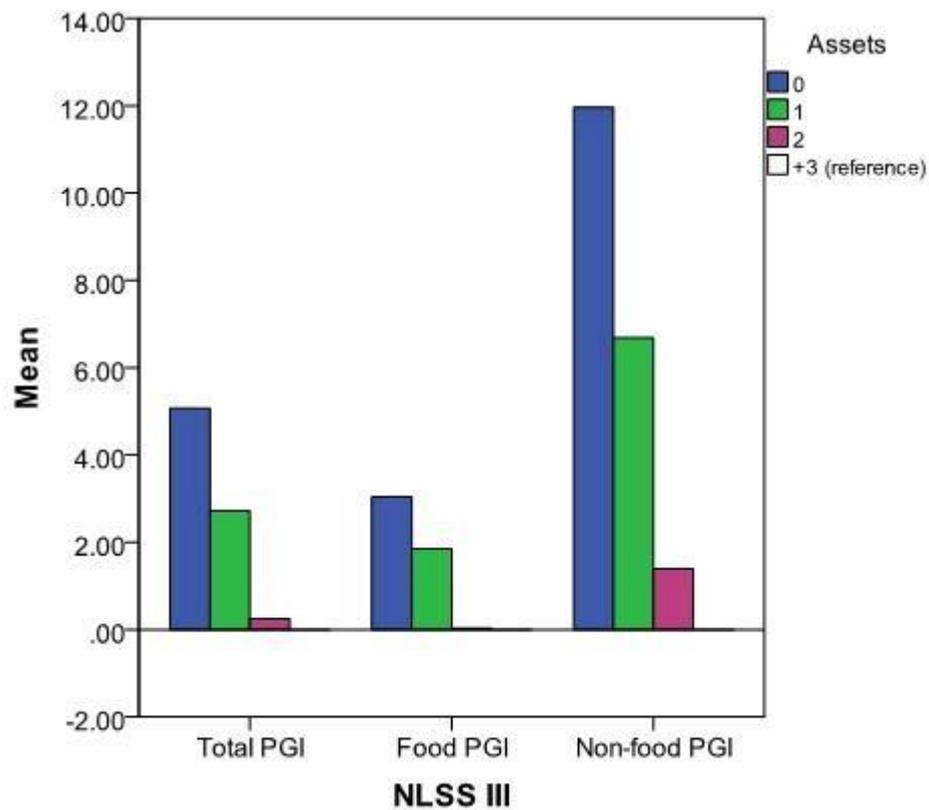
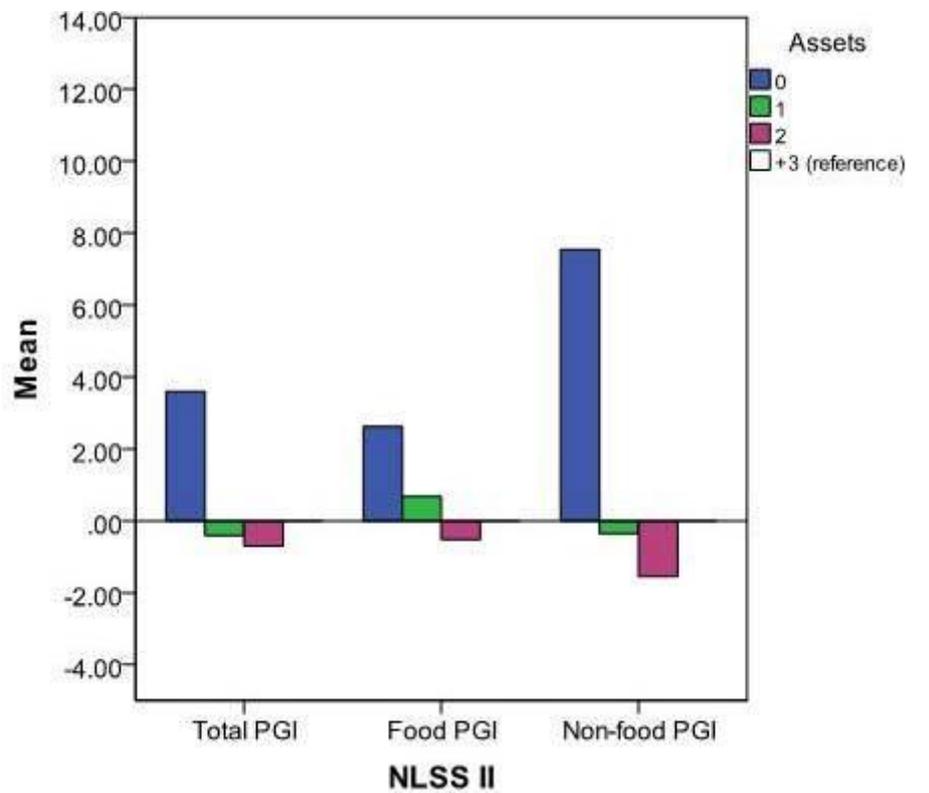


Figure 7.23: Mean poverty gap indices by sanitation in NLSS II and III after removing the effects of other confounders



**Figure 7.24: Mean poverty gap indices by total number of assets in NLSS II and III after removing the effects of other confounders**



**Figure 7.25: Mean poverty gap indices by caste in NLSS II and III after removing the effects of other confounders**

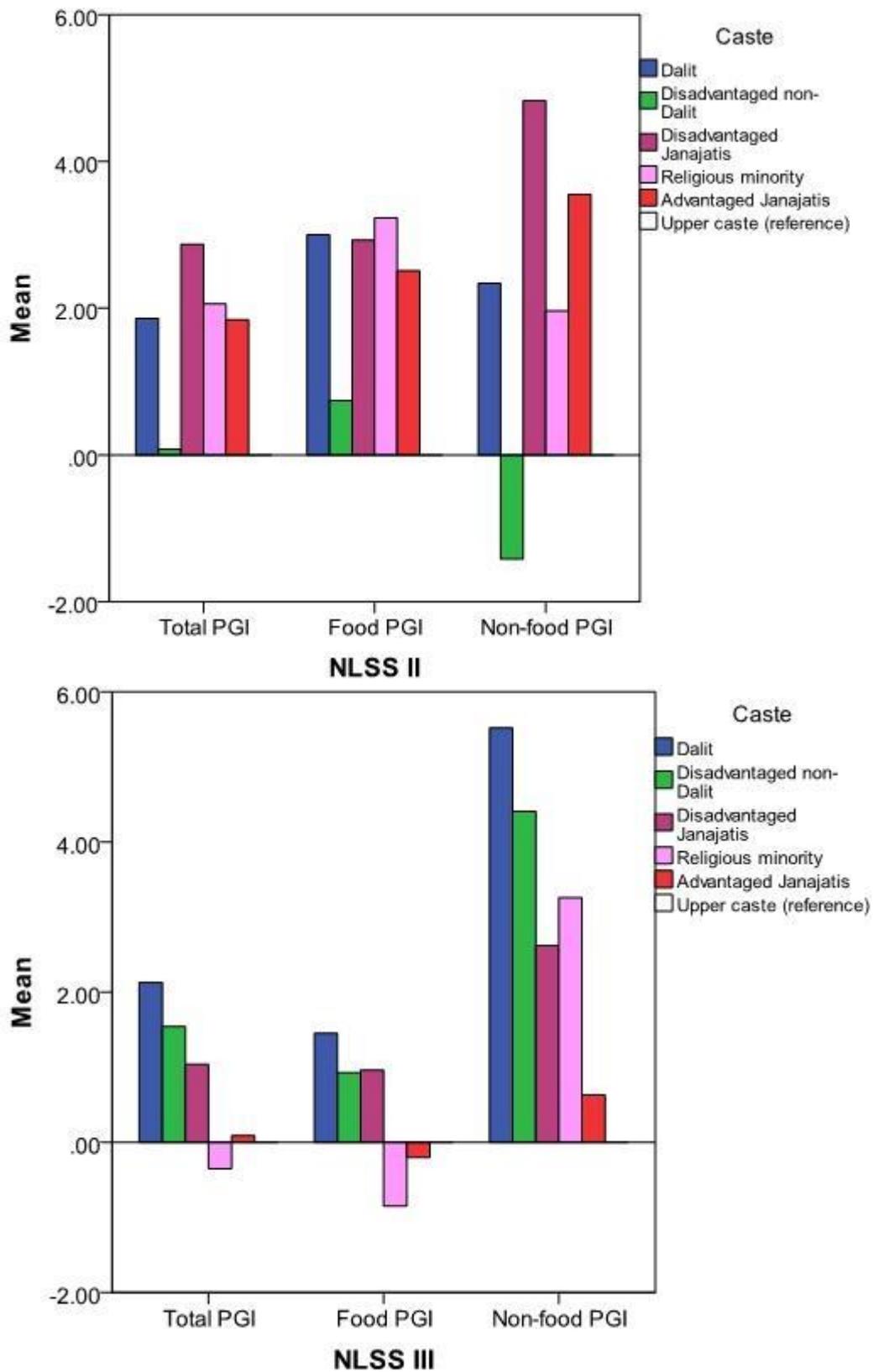
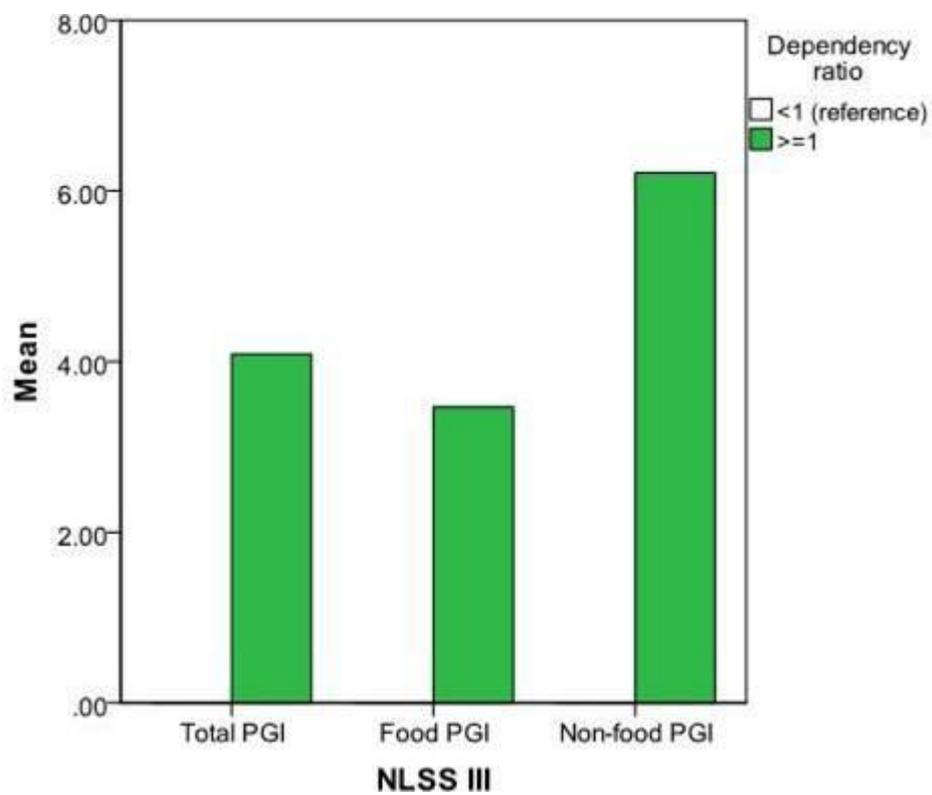
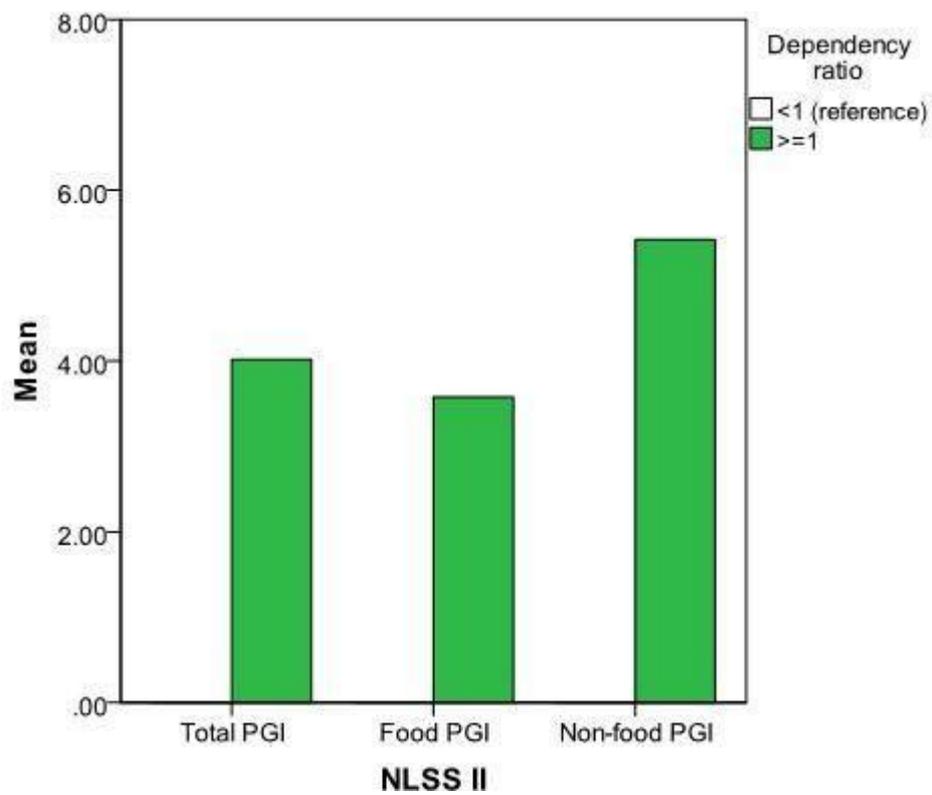
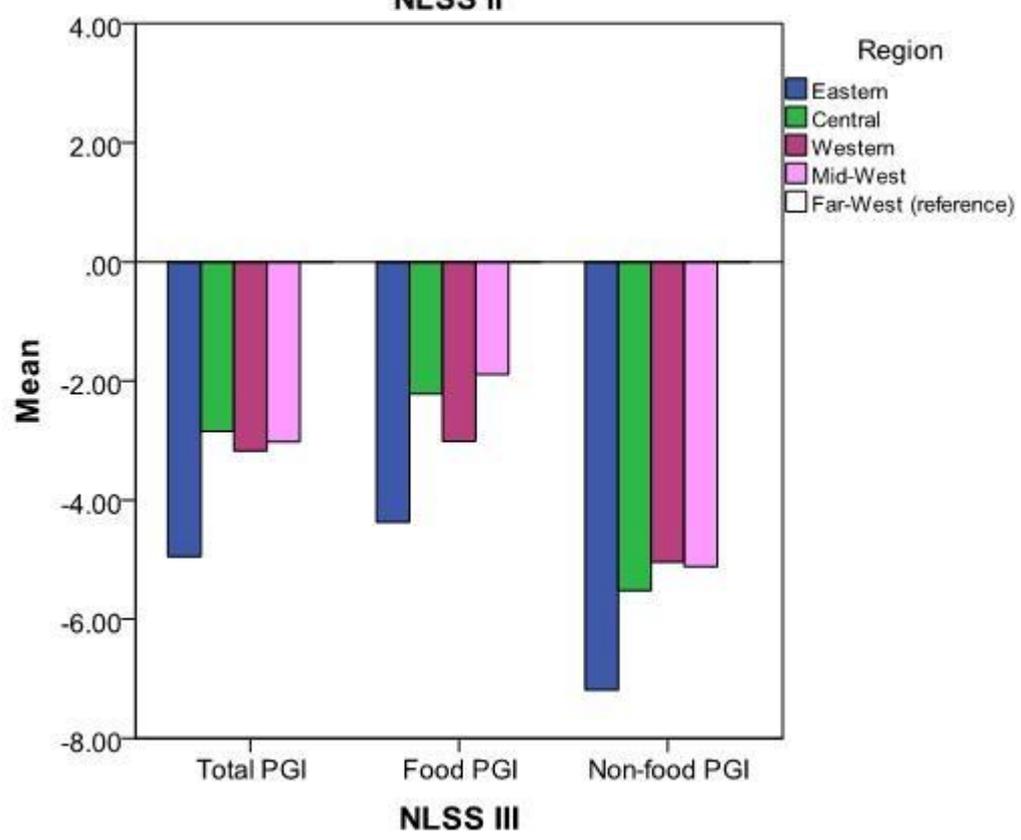
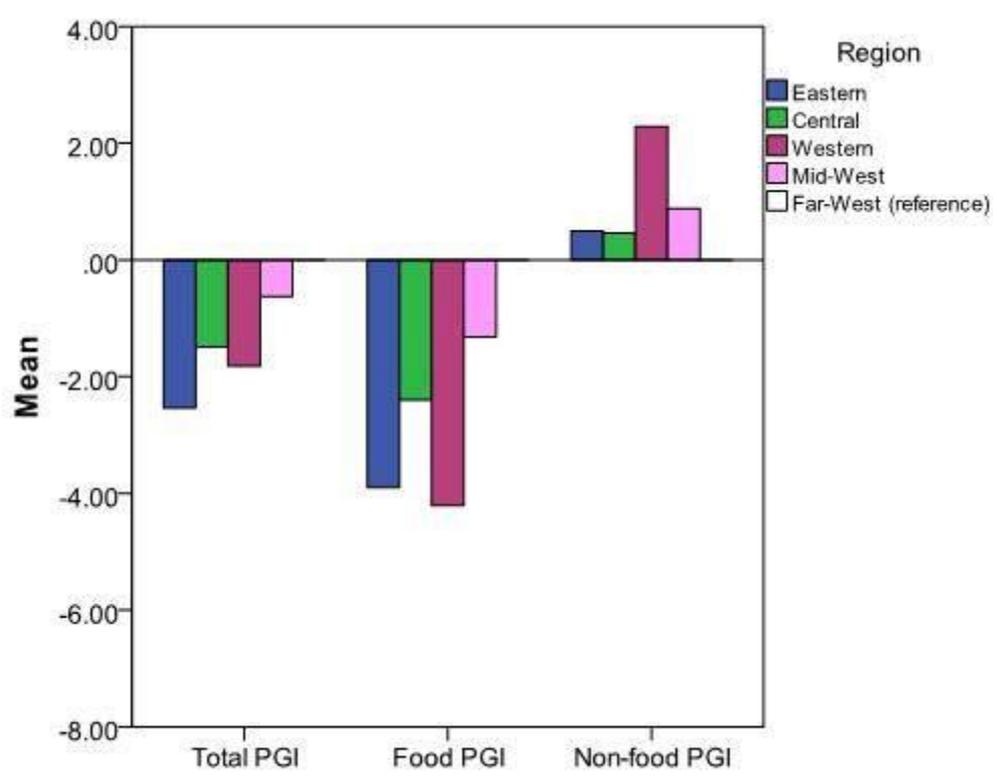


Figure 7.26: Mean poverty gap indices by dependency ratio in NLSS II and III after removing the effects of other confounders



**Figure 7.27: Mean poverty gap indices by region in NLSS II and III after removing the effects of other confounders**



**Table 7.11 Order of importance of chronic poverty and vulnerability indicators in predicting Total PGI, food PGI and non-food PGI in NLSS II**

| Step                        | Total PGI                | Food PGI                 | Non-food PGI             |
|-----------------------------|--------------------------|--------------------------|--------------------------|
| 1                           | Dependency ratio         | Dependency ratio         | Roof construction        |
| 2                           | Total number of assets   | Caste                    | Total number of assets   |
| 3                           | Roof construction        | Region                   | Dependency ratio         |
| 4                           | Time to health centre    | Total number of assets   | Gender head of household |
| 5                           | Caste                    | Roof construction        | Caste                    |
| 6                           | Adult illiteracy         | Adult illiteracy         | Time to road head        |
| 7                           | Gender head of household | Time to health centre    | Adult illiteracy         |
| 8                           | Sanitation               | Sanitation               | Electricity              |
| 9                           | Drinking water           | Remittances              | Time to health post      |
| 10                          | Electricity              | Gender head of household | Sanitation               |
| 11                          | Time to road head        | Drinking water           | Drinking water           |
| 12                          | Region                   |                          | Remittances              |
| 13                          | Remittances              |                          |                          |
| R <sup>2</sup>              |                          |                          |                          |
| All indicators              | 22%                      | 15%                      | 33%                      |
| Indicators in model         | 21%                      | 15%                      | 30%                      |
| First 5 indicators in model | 19%                      | 13%                      | 27%                      |

**Table 7.12 Order of importance of chronic poverty and vulnerability indicators in predicting total PGI, food PGI and non-food PGI in NLSS III**

| Step                        | Total PGI              | Food PGI               | Non-food PGI             |
|-----------------------------|------------------------|------------------------|--------------------------|
| 1                           | Dependency ratio       | Dependency ratio       | Total number of assets   |
| 2                           | Total number of assets | Region                 | Dependency ratio         |
| 3                           | Region                 | Total number of assets | Residency                |
| 4                           | Land owned             | Electricity            | Land owned               |
| 5                           | Residency              | Caste                  | Region                   |
| 6                           | Roof construction      | Time to health centre  | Adult illiteracy         |
| 7                           | Caste                  | Sanitation             | Gender of household head |
| 8                           | Adult illiteracy       | Land owned             | Caste                    |
| 9                           | Sanitation             |                        | Sanitation               |
| 10                          | Electricity            |                        | Roof construction        |
| 11                          | Remittances            |                        | Electricity              |
| 12                          | Marital status         |                        | Wall construction        |
| 13                          |                        |                        | Remittances              |
| 14                          |                        |                        | Marital status           |
| R <sup>2</sup>              |                        |                        |                          |
| All indicators              | 18%                    | 11%                    | 30%                      |
| Indicators in model         | 18%                    | 11%                    | 30%                      |
| First 5 indicators in model | 15%                    | 10%                    | 22%                      |

**Table 7.13: Relationship between Squared Poverty Gap Indices and chronic poverty and vulnerability indicators in NLSS II**

| Indicator               | Categories  | Total SPGI |        |            |        | Food SPGI  |        |            |        | Non-food SPGI |        |            |        |
|-------------------------|-------------|------------|--------|------------|--------|------------|--------|------------|--------|---------------|--------|------------|--------|
|                         |             | Analysis 1 |        | Analysis 2 |        | Analysis 1 |        | Analysis 2 |        | Analysis 1    |        | Analysis 2 |        |
|                         |             | Mean       | p      | Mean       | p      | Mean       | p      | Mean       | p      | Mean          | p      | Mean       | p      |
| Adult illiteracy rate   | Literate    | 0.84       | <0.001 | 0          | <0.001 | 0.95       | <0.001 | 0          | 0.002  | 2.61          | <0.001 | 0          | <0.001 |
|                         | Illiterate  | 2.87       |        | 1.19       |        | 2.45       |        | 0.60       |        | 8.18          |        | 1.72       |        |
| Remittances             | Yes         | 0.36       | <0.001 | 0          | ns     | 0.35       | <0.001 | 0          | ns     | 1.19          | <0.001 | 0          | 0.024* |
|                         | No          | 2.14       |        | 0.37       |        | 1.95       |        | 0.51       |        | 6.21          |        | 1.45       |        |
| Child mortality         | No death    | 2.03       | ns     | 0          | ns     | 1.88       | ns     | 0          | ns     | 5.65          | 0.007* | 0          | ns     |
|                         | Death       | 2.53       |        | 0.46       |        | 2.24       |        | 0.34       |        | 7.25          |        | 0.69       |        |
| Child immunisation      | Yes         | 2.37       | <0.001 | 0          | 0.012* | 2.16       | <0.001 | 0          | 0.002  | 6.86          | <0.001 | 0          | ns     |
|                         | No          | 4.12       |        | 0.88       |        | 3.76       |        | 1.01       |        | 10.49         |        | 1.21       |        |
| Electricity             | Yes         | 0.38       | <0.001 | 0          | ns     | 0.71       | <0.001 | 0          | ns     | 0.90          | <0.001 | 0          | <0.001 |
|                         | No          | 3.19       |        | 0.45       |        | 2.61       |        | 0.14       |        | 9.42          |        | 2.10       |        |
| Drinking water          | Yes MDG     | 1.54       | <0.001 | 0          | <0.001 | 1.49       | <0.001 | 0          | ns     | 4.57          | <0.001 | 0          | <0.001 |
|                         | Not MDG     | 3.77       |        | 0.89       |        | 3.03       |        | 0.56       |        | 10.49         |        | 1.85       |        |
| Sanitation              | Yes MDG     | 0.51       | <0.001 | 0          | 0.011* | 0.71       | <0.001 | 0          | ns     | 1.73          | <0.001 | 0          | 0.001  |
|                         | Not MDG     | 3.12       |        | 0.63       |        | 2.64       |        | 0.51       |        | 8.85          |        | 1.72       |        |
| Wall construction       | Good        | 1.55       | <0.001 | 0          | ns     | 1.38       | <0.001 | 0          | ns     | 4.27          | <0.001 | 0          | ns     |
|                         | Poor        | 2.39       |        | 0.36       |        | 2.20       |        | 0.08       |        | 7.25          |        | 0.64       |        |
| Roof construction       | Good        | 0.93       | <0.001 | 0          | <0.001 | 1.13       | <0.001 | 0          | ns     | 2.54          | <0.001 | 0          | <0.001 |
|                         | Poor        | 4.28       |        | 1.80       |        | 3.27       |        | 0.95       |        | 12.82         |        | 5.30       |        |
| Cooking                 | Good        | 0.05       | <0.001 | 0          | ns     | 0.48       | <0.001 | 0          | ns     | 0.06          | <0.001 | 0          | ns     |
|                         | Poor        | 2.49       |        | 0.13       |        | 2.15       |        | 0.13       |        | 7.25          |        | 1.01       |        |
| Assets                  | 0           | 4.44       | <0.001 | 1.53       | <0.001 | 3.42       | <0.001 | 1.02       | <0.001 | 12.83         | <0.001 | 4.44       | <0.001 |
|                         | 1           | 1.84       |        | -0.28      |        | 1.79       |        | -0.86      |        | 5.52          |        | -0.71      |        |
|                         | 2           | 0.56       |        | -0.27      |        | 0.76       |        | -0.22      |        | 1.33          |        | -0.89      |        |
|                         | 3+          | 0.03       |        | 0          |        | 0.38       |        | 0          |        | 0.06          |        | 0          |        |
| Household head          | Female      | 1.67       | ns     | 0.83       | 0.002  | 1.50       | ns     | -0.60      | 0.017* | 4.73          | 0.030* | -2.78      | <0.001 |
|                         | Male        | 2.00       |        | 0          |        | 1.82       |        | 0          |        | 5.83          |        | 0          |        |
| Marital Status          | Not married | 1.12       | <0.001 | 0.69       | ns     | 0.97       | ns     | -0.38      | ns     | 2.79          | 0.023* | 0.03       | ns     |
|                         | Married     | 1.93       |        | 0.34       |        | 1.77       |        | 0.26       |        | 5.54          |        | 0.08       |        |
|                         | Divorced    | 2.09       |        | 0          |        | 1.81       |        | 0          |        | 6.72          |        | 0          |        |
| Time to health post > 1 | No          | 1.41       | <0.001 | 0          | <0.001 | 1.40       | <0.001 | 0          | 0.002  | 4.16          | <0.001 | 0          | <0.001 |

| Indicator                  | Categories              | Total SPGI |        |            |        | Food SPGI  |        |            |        | Non-food SPGI |        |            |        |
|----------------------------|-------------------------|------------|--------|------------|--------|------------|--------|------------|--------|---------------|--------|------------|--------|
|                            |                         | Analysis 1 |        | Analysis 2 |        | Analysis 1 |        | Analysis 2 |        | Analysis 1    |        | Analysis 2 |        |
|                            |                         | Mean       | p      |            | Mean   | p          | Mean   | p          | Mean   | p             | Mean   | p          | Mean   |
| hour                       | Yes                     | 4.34       |        | 1.19       |        | 3.39       |        | 0.81       |        | 12.29         |        | 2.29       |        |
| Time to road head > 1 hour | No                      | 1.36       | <0.001 | 0          | 0.002  | 1.40       | <0.001 | 0          | ns     | 3.63          | <0.001 | 0          | <0.001 |
|                            | Yes                     | 4.13       |        | 0.92       |        | 3.16       |        | 0.50       |        | 13.27         |        | 4.23       |        |
| Time to market > 1 hour    | No                      | 0.96       | <0.001 | 0          | ns     | 1.11       | <0.001 | 0          | ns     | 2.52          | <0.001 | 0          | ns     |
|                            | Yes                     | 3.32       |        | 0.02       |        | 2.68       |        | 0.01       |        | 10.03         |        | 0.33       |        |
| Caste                      | Dalit                   | 3.00       | <0.001 | 0.41       | <0.001 | 3.04       | <0.001 | 1.14       | <0.001 | 8.39          | <0.001 | 0.57       | <0.001 |
|                            | Disadvantaged non-Dalit | 1.59       |        | -0.02      |        | 1.50       |        | 0.19       |        | 3.89          |        | 1.25       |        |
|                            | Disadvantaged Janajatis | 3.08       |        | 1.08       |        | 2.40       |        | 0.98       |        | 9.20          |        | 2.78       |        |
|                            | Religious minority      | 2.58       |        | 0.52       |        | 2.52       |        | 0.95       |        | 6.35          |        | 0.50       |        |
|                            | Advantaged Janajatis    | 0.81       |        | 0.77       |        | 1.25       |        | 0.88       |        | 2.25          |        | 2.05       |        |
|                            | Upper Caste             | 0.91       |        | 0          |        | 0.89       |        | 0          |        | 2.86          |        | 0          |        |
| Residency                  | Urban                   | 0.75       | <0.001 | 0          | ns     | 1.35       | ns     | 0          | ns     | 1.47          | <0.001 | 0          | ns     |
|                            | Rural                   | 2.06       |        | 0.44       |        | 1.81       |        | 0.66       |        | 6.06          |        | 0.35       |        |
| Dependency ratio           | <1                      | 0.89       | <0.001 | 0          | <0.001 | 0.95       | <0.001 | 0          | <0.001 | 3.28          | <0.001 | 0          | <0.001 |
|                            | ≥1                      | 3.09       |        | 1.71       |        | 2.68       |        | 1.39       |        | 8.22          |        | 3.44       |        |
| Loans                      | None                    | 1.53       | <0.001 | 0          | ns     | 1.40       | <0.001 | 0          | ns     | 4.46          | <0.001 | 0          | ns     |
|                            | Yes                     | 2.16       |        | 0.08       |        | 1.96       |        | 0.16       |        | 6.25          |        | 0.49       |        |
| Migration                  | Non                     | 2.76       | <0.001 | 0.32       | ns     | 2.36       | <0.001 | -0.06      | ns     | 8.07          | <0.001 | 0.44       | ns     |
|                            | Within Nepal            | 1.83       |        | 0.32       |        | 1.64       |        | 0          |        | 5.28          |        | 0.34       |        |
|                            | From abroad             | 1.48       |        | 0          |        | 1.66       |        | 0          |        | 4.40          |        | 0          |        |
| Land owned                 | None                    | 1.33       | <0.001 | 0.09       | ns     | 1.46       | <0.001 | 0.42       | ns     | 3.54          | <0.001 | -1.09      | ns     |
|                            | 0.2 ha                  | 2.57       |        | 0.15       |        | 2.22       |        | 0.36       |        | 7.11          |        | -1.19      |        |
|                            | 0.2-1.0 ha              | 1.79       |        | -0.31      |        | 1.59       |        | 0.02       |        | 5.79          |        | -1.75      |        |
|                            | 1.01 ha                 | 0.95       |        | 0          |        | 0.67       |        | 0          |        | 3.96          |        | 0          |        |
| Region                     | Eastern                 | 2.24       | <0.001 | -0.72      | ns     | 1.73       | <0.001 | -0.99      | <0.001 | 7.67          | <0.001 | 1.15       | <0.001 |
|                            | Central                 | 1.69       |        | -0.19      |        | 1.74       |        | -0.41      |        | 4.38          |        | 1.30       |        |
|                            | Western                 | 1.49       |        | -0.34      |        | 1.14       |        | -0.98      |        | 4.96          |        | 1.86       |        |
|                            | Mid-West                | 2.73       |        | -0.26      |        | 2.69       |        | -0.03      |        | 7.19          |        | 0.03       |        |
|                            | Far-West                | 2.22       |        | 0          |        | 2.19       |        | 0          |        | 4.97          |        | 0          |        |

**Table 7.14: Relationship between Squared Poverty Gap Indices and chronic poverty and vulnerability indicators in NLSS III**

| Indicator               | Categories  | Total SPGI |        |            |        | Food SPGI  |        |            |        | Non-food SPGI |        |            |        |
|-------------------------|-------------|------------|--------|------------|--------|------------|--------|------------|--------|---------------|--------|------------|--------|
|                         |             | Analysis 1 |        | Analysis 2 |        | Analysis 1 |        | Analysis 2 |        | Analysis 1    |        | Analysis 2 |        |
|                         |             | Mean       | p      | Mean       | p      | Mean       | p      | Mean       | p      | Mean          | p      | Mean       | p      |
| Adult illiteracy rate   | Literate    | 0.72       | <0.001 | 0          | <0.001 | 0.89       | <0.001 | 0          | ns     | 2.16          | <0.001 | 0          | <0.001 |
|                         | Illiterate  | 2.07       |        | 0.54       |        | 1.81       |        | 0.28       |        | 6.35          |        | 1.52       |        |
| Remittances             | Yes         | 0.85       | <0.001 | 0          | 0.001  | 0.91       | <0.001 | 0          | 0.015* | 3.12          | <0.001 | 0          | 0.009* |
|                         | No          | 1.53       |        | 0.45       |        | 1.47       |        | 0.35       |        | 4.43          |        | 0.69       |        |
| Child mortality         | No death    | 1.35       | <0.001 | 0          | ns     | 1.31       | <0.001 | 0          | ns     | 3.97          | <0.001 | 0          | ns     |
|                         | Death       | 2.33       |        | 0.18       |        | 2.06       |        | 0.09       |        | 6.50          |        | 0.30       |        |
| Child immunisation      | Yes         | 1.80       | <0.001 | 0          | ns     | 1.64       | <0.001 | 0          | 0.011* | 5.39          | <0.001 | 0          | ns     |
|                         | No          | 3.12       |        | 0.58       |        | 2.86       |        | 0.80       |        | 8.04          |        | 0.44       |        |
| Electricity             | Yes         | 0.70       | <0.001 | 0          | <0.001 | 0.76       | <0.001 | 0          | <0.001 | 2.25          | <0.001 | 0          | <0.001 |
|                         | No          | 3.02       |        | 0.66       |        | 2.78       |        | 0.72       |        | 8.92          |        | 1.77       |        |
| Drinking water          | Yes MDG     | 1.10       | <0.001 | 0          | ns     | 1.10       | <0.001 | 0          | ns     | 3.53          | <0.001 | 0          | ns     |
|                         | Not MDG     | 2.37       |        | 0.32       |        | 2.23       |        | 0.29       |        | 6.42          |        | 0.40       |        |
| Sanitation              | Yes MDG     | 0.37       | <0.001 | 0          | ns     | 0.60       | <0.001 | 0          | ns     | 0.97          | <0.001 | 0          | <0.001 |
|                         | Not MDG     | 2.03       |        | 0.40       |        | 1.82       |        | 0.24       |        | 6.32          |        | 1.36       |        |
| Foundation construction | Good        | 0.91       | <0.001 | 0          | ns     | 0.87       | <0.001 | 0          | ns     | 3.29          | <0.001 | 0          | <0.001 |
|                         | Poor        | 1.78       |        | 0.29       |        | 1.78       |        | 0.02       |        | 4.86          |        | 1.89       |        |
| Wall construction       | Good        | 0.35       | <0.001 | 0          | ns     | 0.53       | <0.001 | 0          | ns     | 1.14          | <0.001 | 0          | <0.001 |
|                         | Poor        | 1.84       |        | 0.31       |        | 1.71       |        | 0.08       |        | 5.58          |        | 1.59       |        |
| Roof construction       | Good        | 0.97       | <0.001 | 0          | ns     | 1.07       | <0.001 | 0          | ns     | 2.81          | <0.001 | 0          | <0.001 |
|                         | Poor        | 2.87       |        | 0.76       |        | 2.29       |        | 0.13       |        | 9.36          |        | 3.06       |        |
| Cooking                 | Good        | 0.29       | <0.001 | 0          | ns     | 0.48       | <0.001 | 0          | ns     | 0.78          | <0.001 | 0          | ns     |
|                         | Poor        | 1.78       |        | 0.01       |        | 1.66       |        | 0.18       |        | 5.48          |        | 0.66       |        |
| Assets                  | 0           | 3.63       | <0.001 | 1.90       | <0.001 | 3.01       | <0.001 | 1.24       | <0.001 | 11.16         | <0.001 | 6.23       | <0.001 |
|                         | 1           | 2.50       |        | 1.06       |        | 2.23       |        | 0.74       |        | 7.42          |        | 3.40       |        |
|                         | 2           | 0.77       |        | 0.01       |        | 0.91       |        | -0.01      |        | 2.41          |        | 0.39       |        |
|                         | 3+          | 0.27       |        | 0          |        | 0.47       |        | 0          |        | 0.85          |        | 0          |        |
| Household head          | Female      | 1.21       | ns     | -0.44      | 0.009* | 1.32       | ns     | -0.08      | ns     | 3.60          | 0.049  | -1.69      | <0.001 |
|                         | Male        | 1.36       |        | 0          |        | 1.29       |        | 0          |        | 4.18          |        | 0          |        |
| Marital Status          | Not married | 0.21       | 0.005  | -0.20      | ns     | 0.52       | ns     | 0.17       | ns     | 0.68          | <0.001 | -1.39      | ns     |
|                         | Married     | 1.38       |        | 0.37       |        | 1.35       |        | 0.38       |        | 4.12          |        | 0.39       |        |

| Indicator                    | Categories              | Total SPGI |        |            |        | Food SPGI  |        |            |        | Non-food SPGI |        |            |        |
|------------------------------|-------------------------|------------|--------|------------|--------|------------|--------|------------|--------|---------------|--------|------------|--------|
|                              |                         | Analysis 1 |        | Analysis 2 |        | Analysis 1 |        | Analysis 2 |        | Analysis 1    |        | Analysis 2 |        |
|                              |                         | Mean       | p      | Mean       | p      | Mean       | p      | Mean       | p      | Mean          | p      | Mean       | p      |
|                              | Divorced                | 1.14       |        | 0          |        | 1.09       |        | 0          |        | 4.14          |        | 0          |        |
| Time to health post > 1 hour | No                      | 1.14       | <0.001 | 0          | ns     | 1.13       | <0.001 | 0          | 0.02*  | 3.46          | <0.001 | 0          | ns     |
|                              | Yes                     | 2.67       |        | 0.28       |        | 2.58       |        | 0.54       |        | 8.30          |        | 0.13       |        |
| Time to road head > 1 hour   | No                      | 1.10       | <0.001 | 0          | 0.023  | 1.07       | <0.001 | 0          | ns     | 3.50          | <0.001 | 0          | ns     |
|                              | Yes                     | 2.78       |        | 0.53       |        | 2.81       |        | 0.39       |        | 7.58          |        | 0.09       |        |
| Time to market > 1 hour      | No                      | 0.79       | <0.001 | 0          | ns     | 0.80       | <0.001 | 0          | ns     | 2.65          | <0.001 | 0          | ns     |
|                              | Yes                     | 2.40       |        | 0.34       |        | 2.31       |        | 0.37       |        | 6.83          |        | 0.48       |        |
| Caste                        | Dalit                   | 2.78       | <0.001 | 0.74       | 0.001  | 2.33       | <0.001 | 0.54       | 0.009* | 8.66          | <0.001 | 2.71       | <0.001 |
|                              | Disadvantaged non-Dalit | 1.36       |        | 0.28       |        | 1.14       |        | 0.10       |        | 4.85          |        | 1.79       |        |
|                              | Disadvantaged Janajatis | 1.53       |        | 0.41       |        | 1.49       |        | 0.31       |        | 4.62          |        | 1.30       |        |
|                              | Religious minority      | 0.94       |        | -0.42      |        | 0.80       |        | -0.40      |        | 5.79          |        | 1.73       |        |
|                              | Advantaged Janajatis    | 0.64       |        | -0.04      |        | 0.62       |        | -0.22      |        | 1.67          |        | 0.24       |        |
|                              | Upper Caste             | 0.85       |        | 0          |        | 1.06       |        | 0          |        | 2.20          |        | 0          |        |
| Residency                    | Urban                   | 1.62       | <0.001 | 0          | <0.001 | 1.62       | <0.001 | 0          | ns     | 4.74          | <0.001 | 0          | <0.001 |
|                              | Rural                   | 0.76       |        | 0.64       |        | 0.70       |        | 0.19       |        | 2.69          |        | 2.81       |        |
| Dependency ratio             | <1                      | 0.72       | <0.001 | 0          | <0.001 | 0.81       | <0.001 | 0          | <0.001 | 2.56          | <0.001 | 0          | <0.001 |
|                              | ≥1                      | 2.83       |        | 1.57       |        | 2.83       |        | 1.25       |        | 7.69          |        | 3.39       |        |
| Loans                        | None                    | 1.19       | ns     | 0          | ns     | 1.20       | ns     | 0          | ns     | 3.69          | 0.05*  | 0          | ns     |
|                              | Yes                     | 1.40       |        | 0.60       |        | 1.35       |        | 0.09       |        | 4.23          |        | 0.12       |        |
| Migration                    | Non                     | 1.77       | <0.001 | 0.35       | ns     | 1.66       | <0.001 | 0.43       | ns     | 5.22          | <0.001 | -0.65      | ns     |
|                              | Within Nepal            | 0.79       |        | 0.17       |        | 0.90       |        | 0.26       |        | 2.47          |        | -0.81      |        |
|                              | From abroad             | 0.95       |        | 0          |        | 0.70       |        | 0          |        | 4.79          |        | 0          |        |
| Land owned                   | None                    | 1.05       | <0.001 | 0.92       | 0.001  | 0.85       | <0.001 | 0.44       | ns     | 3.73          | <0.001 | 3.27       | <0.001 |
|                              | 0.2 ha                  | 1.92       |        | 0.80       |        | 1.74       |        | 0.55       |        | 5.62          |        | 2.29       |        |
|                              | 0.2-1.0 ha              | 1.50       |        | 0.45       |        | 1.09       |        | 0.38       |        | 4.24          |        | 1.21       |        |
|                              | 1.01+ ha                | 0.57       |        | 0          |        | 0.80       |        | 0          |        | 1.86          |        | 0          |        |
| Region                       | Eastern                 | 0.75       | <0.001 | -1.92      | <0.001 | 0.68       | <0.001 | -1.58      | <0.001 | 8.91          | <0.001 | -3.99      | <0.001 |
|                              | Central                 | 1.22       |        | -0.85      |        | 1.24       |        | -0.62      |        | 7.01          |        | -2.50      |        |
|                              | Western                 | 0.94       |        | -1.05      |        | 0.92       |        | -1.06      |        | 6.77          |        | -2.19      |        |
|                              | Mid-West                | 2.10       |        | -1.10      |        | 2.11       |        | -0.75      |        | 13.37         |        | -2.40      |        |
|                              | Far-West                | 2.82       |        | 0          |        | 2.67       |        | 0          |        | 15.99         |        | 0          |        |

**Table 7.15: Order of importance of chronic poverty and vulnerability indicators in predicting Total SPGI, food SPGI and non-food SPGI in NLSS II**

| Step                        | Total Poor SPGI          | Food poor SPGI           | Non-food poor SPGI       |
|-----------------------------|--------------------------|--------------------------|--------------------------|
| 1                           | Dependency ratio         | Dependency ratio         | Roof construction        |
| 2                           | Roof construction        | Total number of assets   | Total number of assets   |
| 3                           | Total number of assets   | Roof construction        | Dependency ratio         |
| 4                           | Time to health centre    | Caste                    | Time to road post        |
| 5                           | Adult illiteracy         | Time to health centre    | Caste                    |
| 6                           | Drinking water           | Adult illiteracy         | Time to health centre    |
| 7                           | Caste                    | Region                   | Adult illiteracy         |
| 8                           | Gender of household head | Drinking water           | Electricity              |
| 9                           | Time to road post        | Gender of household head | Drinking water           |
| 10                          | Sanitation               | Sanitation               | Gender of household head |
| 11                          |                          |                          | Sanitation               |
| 12                          |                          |                          | Remittances              |
| R <sup>2</sup>              |                          |                          |                          |
| All indicators              | 16%                      | 10%                      | 26%                      |
| Indicators in model         | 16%                      | 10%                      | 24%                      |
| First 5 indicators in model | 14%                      | 9%                       | 21%                      |

**Table 7.16: Order of importance of chronic poverty and vulnerability indicators in predicting Total SPGI, food SPGI and non-food SPGI in NLSS III**

| Step                        | Total Poor SPGI          | Food poor SPGI         | Non-food poor SPGI       |
|-----------------------------|--------------------------|------------------------|--------------------------|
| 1                           | Dependency ratio         | Dependency ratio       | Total number of assets   |
| 2                           | Total number of assets   | Region                 | Dependency ratio         |
| 3                           | Region                   | Total number of assets | Roof construction        |
| 4                           | Roof construction        | Drinking water         | Residency                |
| 5                           | Adult illiteracy         | Remittances            | Land owned               |
| 6                           | Land owned               | Time to health centre  | Region                   |
| 7                           | Electricity              | Caste                  | Caste                    |
| 8                           | Residency                | Time to market         | Adult illiteracy         |
| 9                           | Remittances              |                        | Sanitation               |
| 10                          | Caste                    |                        | Gender of household head |
| 11                          | Sanitation               |                        | Electricity              |
| 12                          | Gender of household head |                        | Marital status           |
| 13                          | Time to road head        |                        |                          |
| 14                          | Marital status           |                        |                          |
| R <sup>2</sup>              |                          |                        |                          |
| All indicators              | 12%                      | 7%                     | 23%                      |
| Indicators in model         | 12%                      | 6%                     | 23%                      |
| First 5 indicators in model | 10%                      | 6%                     | 19%                      |

**Table 7.17: Order of importance of chronic poverty and vulnerability variables in predicting poor households by region in NLSS II**

| Step                               | Eastern                | Central                  | Western                  | Mid-West         | Far-West         |
|------------------------------------|------------------------|--------------------------|--------------------------|------------------|------------------|
| 1                                  | Roof construction      | Total number of assets   | Electricity              | Electricity      | Caste            |
| 2                                  | Time to health centre  | Roof construction        | Sanitation               | Sanitation       | Electricity      |
| 3                                  | Dependency ratio       | Dependency ratio         | Wall construction        | Dependency ratio | Dependency ratio |
| 4                                  | Sanitation             | Caste                    | Caste                    | Caste            | Sanitation       |
| 5                                  | Total number of assets | Time to road head        | Dependency ratio         | Time to market   |                  |
| 6                                  | Caste                  | Adult illiteracy         | Remittances              | Marital status   |                  |
| 7                                  | Loans                  | Gender head of household | Gender head of household |                  |                  |
| 8                                  | Drinking water         | Cooking fuel             | Roof construction        |                  |                  |
| 9                                  | Time to market         |                          |                          |                  |                  |
| 10                                 | Land ownership         |                          |                          |                  |                  |
| 11                                 | Remittances            |                          |                          |                  |                  |
| Classification correctly predicted |                        |                          |                          |                  |                  |
| Not poor                           | 91.2                   | 94.6                     | 92.5                     | 74.8             | 93.1             |
| Poor                               | 47.7                   | 47.7                     | 40.6                     | 66.7             | 34.8             |
| Total                              | 85.4                   | 85.4                     | 82.5                     | 71.7             | 73.3             |

**Table 7.18: Order of importance of chronic poverty and vulnerability variables in predicting poor households by region in NLSS III**

| Step                               | Eastern                | Central                | Western                | Mid-West               | Far-West               |
|------------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| 1                                  | Sanitation             | Total number of assets |
| 2                                  | Dependency ratio       | Dependency ratio       | Dependency ratio       | Caste                  | Caste                  |
| 3                                  | Caste                  | Sanitation             | Sanitation             | Dependency ratio       | Dependency ratio       |
| 4                                  | Residency              | Roof construction      | Cooking fuel           | Roof construction      | Cooking fuel           |
| 5                                  | Total number of assets | Residency              | Electricity            | Sanitation             | Gender household head  |
| 6                                  | Cooking fuel           | Wall construction      | Caste                  | Wall construction      | Sanitation             |
| 7                                  | Migration              | Land ownership         | Roof construction      | Migration              |                        |
| 8                                  | Land ownership         | Time to health centre  | Time to road head      | Land ownership         |                        |
| 9                                  |                        | Drinking water         |                        |                        |                        |
| 10                                 |                        | Migration              |                        |                        |                        |
| Classification correctly predicted |                        |                        |                        |                        |                        |
| Not poor                           | 97.9                   | 96.9                   | 96.7                   | 91.6                   | 84.0                   |
| Poor                               | 21.3                   | 25.8                   | 38.6                   | 34.3                   | 57.4                   |
| Total                              | 85.3                   | 86.4                   | 88.1                   | 76.6                   | 74.1                   |

**Table 7.19: Order of importance of chronic poverty and vulnerability variables in predicting food poor households by region in NLSS II**

| Step                               | Eastern               | Central                  | Western                  | Mid-West         | Far-West         |
|------------------------------------|-----------------------|--------------------------|--------------------------|------------------|------------------|
| 1                                  | Roof construction     | Total number of assets   | Sanitation               | Sanitation       | Caste            |
| 2                                  | Dependency ratio      | Caste                    | Electricity              | Caste            | Drinking water   |
| 3                                  | Sanitation            | Dependency ratio         | Caste                    | Time to market   | Adult illiteracy |
| 4                                  | Time to health centre | Time to road head        | Dependency ratio         | Marital status   |                  |
| 5                                  | Land ownership        | Roof construction        | Total number of assets   | Dependency ratio |                  |
| 6                                  | Remittances           | Remittances              | Gender head of household | Adult illiteracy |                  |
| 7                                  | Drinking water        | Wall construction        | Adult illiteracy         |                  |                  |
| 8                                  |                       | Adult illiteracy         | Drinking water           |                  |                  |
| 9                                  |                       | Gender head of household |                          |                  |                  |
| 10                                 |                       |                          |                          |                  |                  |
| 11                                 |                       |                          |                          |                  |                  |
| Classification correctly predicted |                       |                          |                          |                  |                  |
| Not poor                           | 93.1                  | 92.9                     | 96.5                     | 87.7             | 84.4             |
| Poor                               | 35.3                  | 37.5                     | 28.6                     | 44.7             | 45.4             |
| Total                              | 78.6                  | 79.0                     | 85.2                     | 72.9             | 68.3             |

**Table 7.20: Order of importance of chronic poverty and vulnerability variables in predicting food poor households by region in NLSS III**

| Step                               | Eastern                | Central                | Western                | Mid-West               | Far-West              |
|------------------------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|
| 1                                  | Dependency ratio       | Total number of assets | Total number of assets | Total number of assets | Caste                 |
| 2                                  | Caste                  | Dependency ratio       | Dependency ratio       | Dependency ratio       | Electricity           |
| 3                                  | Sanitation             | Wall construction      | Sanitation             | Cooking fuel           | Dependency ratio      |
| 4                                  | Total number of assets | Roof construction      | Time to road head      | Wall construction      | Sanitation            |
| 5                                  | Land ownership         | Sanitation             | Cooking fuel           | Caste                  | Time to health centre |
| 6                                  |                        | Residency              | Roof construction      |                        |                       |
| 7                                  |                        | Electricity            |                        |                        |                       |
| Classification correctly predicted |                        |                        |                        |                        |                       |
| Not poor                           | 99.5                   | 99.0                   | 98.1                   | 96.5                   | 89.8                  |
| Poor                               | 4.6                    | 7.3                    | 17.1                   | 13.4                   | 41.1                  |
| Total                              | 86.5                   | 85.6                   | 86.5                   | 73.5                   | 72.7                  |

**Table 7.21: Order of importance of chronic poverty and vulnerability variables in predicting non-food poor households by region in NLSS II**

| Step                               | Eastern                  | Central                  | Western                  | Mid-West                 | Far-West               |
|------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------------|
| 1                                  | Total number of assets   | Total number of assets   | Electricity              | Electricity              | Time to health centre  |
| 2                                  | Roof construction        | Roof construction        | Total number of assets   | Drinking water           | Caste                  |
| 3                                  | Time to health centre    | Electricity              | Sanitation               | Adult illiteracy         | Total number of assets |
| 4                                  | Dependency ratio         | Dependency ratio         | Cooking fuel             | Roof construction        | Electricity            |
| 5                                  | Caste                    | Adult illiteracy         | Gender head of household | Dependency ratio         | Adult illiteracy       |
| 6                                  | Sanitation               | Time to health centre    | Time to health centre    | Gender head of household | Wall construction      |
| 7                                  | Adult illiteracy         | Gender head of household | Remittances              |                          |                        |
| 8                                  | Gender head of household | Cooking fuel             | Adult illiteracy         |                          |                        |
| 9                                  | Wall construction        | Time to road head        | Dependency ratio         |                          |                        |
| 10                                 | Land ownership           |                          | Roof construction        |                          |                        |
| 11                                 | Time to market           |                          |                          |                          |                        |
| Classification correctly predicted |                          |                          |                          |                          |                        |
| Not poor                           | 86.2                     | 92.0                     | 89.1                     | 70.2                     | 84.2                   |
| Poor                               | 71.0                     | 52.5                     | 59.4                     | 76.8                     | 56.7                   |
| Total                              | 80.8                     | 83.1                     | 80.0                     | 73.3                     | 74.0                   |

**Table 7.22: Order of importance of chronic poverty and vulnerability variables in predicting non-food poor households by region in NLSS III**

| Step                               | Eastern                  | Central                  | Western                  | Mid-West                 | Far-West                 |
|------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1                                  | Total number of assets   |
| 2                                  | Caste                    | Sanitation               | Caste                    | Caste                    | Sanitation               |
| 3                                  | Sanitation               | Dependency ratio         | Cooking fuel             | Roof construction        | Caste                    |
| 4                                  | Land ownership           | Land ownership           | Dependency ratio         | Dependency ratio         | Cooking fuel             |
| 5                                  | Cooking fuel             | Roof construction        | Gender of household head | Sanitation               | Dependency ratio         |
| 6                                  | Residency                | Wall construction        | Electricity              | Residency                | Remittances              |
| 7                                  | Dependency ratio         | Residency                | Adult illiteracy         | Gender of household head | Gender of household head |
| 8                                  | Roof construction        | Electricity              | Land ownership           | Adult illiteracy         | Adult illiteracy         |
| 9                                  | Migration                | Caste                    | Roof construction        | Loans                    | Time to health centre    |
| 10                                 | Adult illiteracy         | Drinking water           | Migration                | Land ownership           |                          |
| 11                                 | Gender of household head | Gender of household head |                          | Migration                |                          |
| 12                                 | Loans                    | Adult illiteracy         |                          | Time to road head        |                          |
| 13                                 | Wall construction        |                          |                          | Cooking fuel             |                          |
| Classification correctly predicted |                          |                          |                          |                          |                          |
| Not poor                           | 90.0                     | 94.4                     | 93.3                     | 83.5                     | 76.8                     |
| Poor                               | 53.4                     | 42.5                     | 58.6                     | 68.3                     | 70.3                     |
| Total                              | 79.8                     | 82.8                     | 85.4                     | 77.6                     | 73.9                     |

**Table 7.23: Order of importance of chronic poverty and vulnerability indicators in predicting total PGI by region in NLSS II**

| Step               | Eastern                | Central                  | Western                | Mid-West         | Far-West          |
|--------------------|------------------------|--------------------------|------------------------|------------------|-------------------|
| 1                  | Roof construction      | Time to road head        | Roof construction      | Time to market   | Caste             |
| 2                  | Total number of assets | Dependency ratio         | Total number of assets | Sanitation       | Wall construction |
| 3                  | Dependency ratio       | Roof construction        | Electricity            | Dependency ratio | Dependency ratio  |
| 4                  | Time to health centre  | Caste                    | Dependency ratio       | Marital status   |                   |
| 5                  | Drinking water         | Total number of assets   | Adult illiteracy       | Adult illiteracy |                   |
| 6                  | Sanitation             | Gender of household head |                        |                  |                   |
| 7                  | Caste                  | Drinking water           |                        |                  |                   |
| 8                  | Land ownership         | Adult illiteracy         |                        |                  |                   |
| 9                  |                        | Time to health centre    |                        |                  |                   |
| R <sup>2</sup> (%) | 24                     | 30                       | 21                     | 17               | 21                |

**Table 7.24: Order of importance of chronic poverty and vulnerability indicators in predicting total PGI by region in NLSS III**

| Step               | Eastern                | Central                  | Western                | Mid-West               | Far-West               |
|--------------------|------------------------|--------------------------|------------------------|------------------------|------------------------|
| 1                  | Dependency ratio       | Dependency ratio         | Total number of assets | Dependency ratio       | Dependency ratio       |
| 2                  | Total number of assets | Total number of assets   | Dependency ratio       | Roof construction      | Caste                  |
| 3                  | Residency              | Electricity              | Roof construction      | Adult illiteracy       | Total number of assets |
| 4                  | Caste                  | Roof construction        | Electricity            | Time to market         | Adult illiteracy       |
| 5                  | Adult illiteracy       | Residency                | Time to road head      | Caste                  | Roof construction      |
| 6                  | Electricity            | Remittances              | Caste                  | Total number of assets |                        |
| 7                  | Land ownership         | Time to health centre    |                        | Marital status         |                        |
| 8                  |                        | Land ownership           |                        | Time to health centre  |                        |
| 9                  |                        | Sanitation               |                        | Loans                  |                        |
| 10                 |                        | Drinking water           |                        |                        |                        |
| 11                 |                        | Loans                    |                        |                        |                        |
| 12                 |                        | Gender head of household |                        |                        |                        |
| R <sup>2</sup> (%) | 14                     | 19                       | 22                     | 17                     | 22                     |

**Table 7.25: Order of importance of chronic poverty and vulnerability indicators in predicting food PGI by region in NLSS II**

| Step               | Eastern                  | Central                  | Western                | Mid-West               | Far-West       |
|--------------------|--------------------------|--------------------------|------------------------|------------------------|----------------|
| 1                  | Dependency ratio         | Dependency ratio         | Roof construction      | Caste                  | Land ownership |
| 2                  | Roof construction        | Caste                    | Total number of assets | Marital status         |                |
| 3                  | Gender head of household | Time to road head        | Residency              | Time to market         |                |
| 4                  | Sanitation               | Total number of assets   | Dependency ratio       | Sanitation             |                |
| 5                  | Land ownership           | Roof construction        | Adult illiteracy       | Total number of assets |                |
| 6                  |                          | Gender head of household | Land ownership         | Dependency ratio       |                |
| 7                  |                          | Drinking water           |                        |                        |                |
| 8                  |                          | Adult illiteracy         |                        |                        |                |
| R <sup>2</sup> (%) | 15                       | 20                       | 15                     | 19                     | 12             |

**Table 7.26: Order of importance of chronic poverty and vulnerability indicators in predicting food PGI by region in NLSS III**

| Step               | Eastern                | Central                | Western                | Mid-West         | Far-West              |
|--------------------|------------------------|------------------------|------------------------|------------------|-----------------------|
| 1                  | Dependency ratio       | Dependency ratio       | Dependency ratio       | Dependency ratio | Dependency ratio      |
| 2                  | Total number of assets | Electricity            | Time to road head      | Time to market   | Caste                 |
| 3                  |                        | Total number of assets | Roof construction      | Marital status   | Time to health centre |
| 4                  |                        | Land ownership         | Electricity            |                  |                       |
| 5                  |                        | Drinking water         | Total number of assets |                  |                       |
| 6                  |                        | Roof construction      | Caste                  |                  |                       |
| 7                  |                        | Caste                  |                        |                  |                       |
| 8                  |                        | Residency              |                        |                  |                       |
| R <sup>2</sup> (%) | 5                      | 11                     | 12                     | 10               | 11                    |

**Table 7.27: Order of importance of chronic poverty and vulnerability indicators in predicting non-food PGI by region in NLSS II**

| Step               | Eastern                  | Central                  | Western                  | Mid-West                 | Far-West               |
|--------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------------|
| 1                  | Total number of assets   | Roof construction        | Total number of assets   | Time to market           | Caste                  |
| 2                  | Time to road head        | Time to road head        | Electricity              | Gender head of household | Wall construction      |
| 3                  | Time to health centre    | Dependency ratio         | Roof construction        | Dependency ratio         | Total number of assets |
| 4                  | Roof construction        | Total number of assets   | Dependency ratio         | Time to health centre    | Adult illiteracy       |
| 5                  | Dependency ratio         | Gender head of household | Sanitation               | Adult illiteracy         | Time to health centre  |
| 6                  | Caste                    | Time to health centre    | Adult illiteracy         | Electricity              |                        |
| 7                  | Sanitation               | Adult illiteracy         | Time to health centre    | Sanitation               |                        |
| 8                  | Dinking water            | Caste                    | Caste                    |                          |                        |
| 9                  | Adult illiteracy         |                          | Gender head of household |                          |                        |
| 10                 | Gender head of household |                          |                          |                          |                        |
| R <sup>2</sup> (%) | 41                       | 35                       | 29                       | 25                       | 25                     |

**Table 7.28: Order of importance of chronic poverty and vulnerability indicators in predicting non-food PGI by region in NLSS III**

| Step               | Eastern                  | Central                  | Western                  | Mid-West                 | Far-West                 |
|--------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1                  | Residency                | Total number of assets   | Total number of assets   | Roof construction        | Dependency ratio         |
| 2                  | Total number of assets   | Dependency ratio         | Dependency ratio         | Dependency ratio         | Total number of assets   |
| 3                  | Dependency ratio         | Roof construction        | Roof construction        | Total number of assets   | Caste                    |
| 4                  | Land ownership           | Residency                | Electricity              | Adult illiteracy         | Remittances              |
| 5                  | Adult illiteracy         | Electricity              | Caste                    | Caste                    | Land ownership           |
| 6                  | Caste                    | Gender of household head | Gender of household head | Time to health centre    | Gender of household head |
| 7                  | Sanitation               | Land ownership           | Time to road head        | Sanitation               | Adult illiteracy         |
| 8                  | Loans                    | Sanitation               | Sanitation               | Marital status           |                          |
| 9                  | Cooking fuel             | Time to health centre    | Adult illiteracy         | Gender of household head |                          |
| 10                 | Wall construction        | Remittances              | Residency                |                          |                          |
| 11                 | Gender of household head | Adult illiteracy         | Land ownership           |                          |                          |
| 12                 | Migration                | Caste                    |                          |                          |                          |
| 13                 | Electricity              | Wall construction        |                          |                          |                          |
| 14                 | Roof construction        | Time to road head        |                          |                          |                          |
| R <sup>2</sup> (%) | 28                       | 31                       | 34                       | 29                       | 28                       |

## Report 8 – Review of Donor Interventions in the Mid- and Far-West Regions

*This report is a direct result of and relates to Outputs 10 and 12 in the Terms of Reference for ‘An Inclusive Growth Strategy for the Mid-West and Far-West Regions of Nepal that delivers on poverty, vulnerability, food security and nutritional outcomes’*

### Acronyms & Abbreviations

|         |  |
|---------|--|
| ADB     | Asian Development Bank   |
| APPSP   | Agriculture Perspective Plan Support Programme                     |
| CBS     | Central Bureau of Statistics                                       |
| CSP     | Community Support Programme  |
| DADF    | District Agriculture Development Fund                              |
| DFID    | Department for International Development (UK)                      |
| DLGSP   | Decentralised Local Government Support Programme                   |
| DSP     | Decentralised Support Programme                                    |
| DoLIDAR | Department of Local Infrastructure Development & Agriculture Roads |
| FSI     | Food Security Initiative   |
| GIS     | Geographic Information System                                      |
| ILO     | International Labour Organisation                                  |
| JICA    | Japan International Co-operation Agency                            |
| KEP     | Karnali Employment Programme                                       |
| LGP     | Local Governance Programme   |
| LGCDP   | Local Governance and Community Development Programme               |
| MEDEP   | Micro-Enterprise Development Programme                             |
| MFW     | Mid and Far West Regions   |
| NPC     | National Planning Commission                                       |
| NGO     | Non-Governmental Organisation                                      |
| NORAD   | Norwegian Agency for Development Cooperation                       |
| PAF     | Poverty Alleviation Programme                                      |
| PDDP    | Participatory District Development Programme                       |
| RAP     | Rural Access Programme   |
| SDC     | Swiss Development Co-operation                                     |
| ToR     | Terms of Reference   |
| UN      | United Nations   |
| UNDP    | United Nations Development Programme                               |
| USAID   | United States Agency for International Development                 |
| WB      | World Bank   |
| WUPAP   | Western Uplands Poverty Alleviation Programme                      |

## **8.1 Introduction**

### **Objective of the Report**

The purpose of this report is to provide a comprehensive picture of the interventions carried out in the Mid and Far West Nepal to determine if any interventions have successfully addressed chronic poverty and vulnerability. This analysis feeds into recommendations for key strategies that could be employed in future development interventions in the Mid and Far West of Nepal.

### **Scope of the Report**

This report is part of a broader study addressing chronic poverty and vulnerability in the Mid and Far West Regions (MFW) of Nepal. The scope of this element of the broader study is to look at the real impacts (successes) of completed development interventions, and how/if they can influence future planning for development interventions by DFID and the wider donor community in Nepal. This report is limited to secondary data and as a desk based study, making use of limited time to conduct a short pool of stakeholder consultations.

### **Organisation of the Report**

This report is split into five sections, starting with this introduction in Section 1. Section 2 outlines the background to the Mid and Far West Nepal, in terms of the current challenges posed to identifying and delivering lasting success, taking results from earlier outputs of the broader study; Section 3 defines the approach and limitations experienced in the methodology applied; Section 4 provides a comprehensive scoping of interventions in the MFW to determine whether there is any evidence of these having successfully addressed chronic poverty and vulnerability, finishing with key findings that will inform the implications for key strategies to be identified in the Final Report (August 2012) of the broader study.

## **8.2 Challenges in the Mid and Far West Nepal**

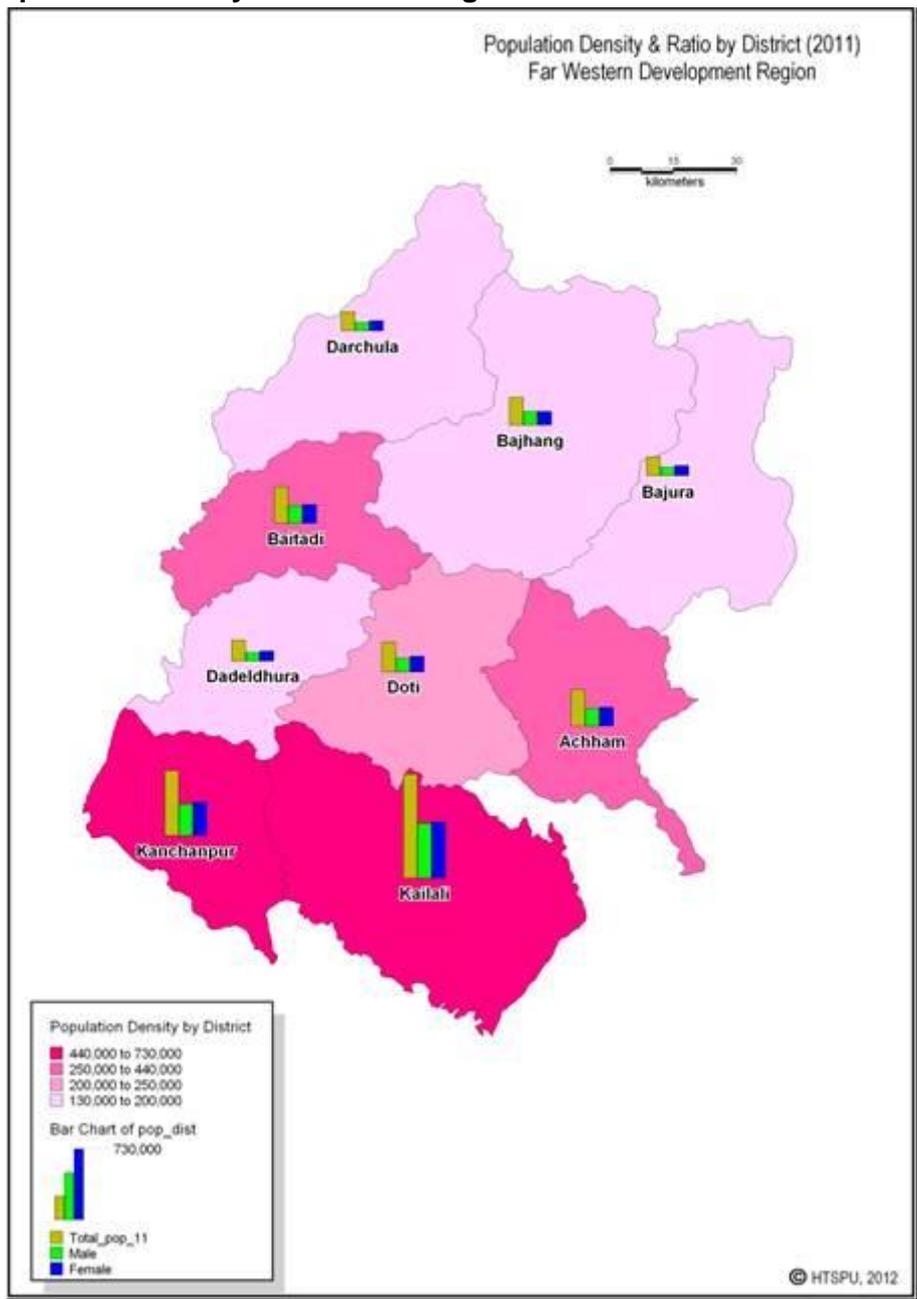
The Mid and Far West Regions of Nepal have been the focus of significant donor attention and development interventions over the last 30 years or more (see Figure 1 for location map). Though they are the least populated regions of Nepal (see figures 2 and 3 for the population distribution of the Mid and Far West Regions), due to the rural remoteness of the Mid and Far West, poverty levels are greatest and access to basic services are the worst in Nepal. Subsistence agriculture is the main form of employment in the regions, often on marginal land that offers low agricultural productivity. Despite these issues being the focus of many donor and government interventions in the Mid and Far West regions in recent decades, there still remains the hurdle of identifying and delivering lasting success through development interventions. Food aid and short term relief programmes have been a popular way of trying to alleviate the immediate needs of poor and excluded communities. Experience has shown that longer term strategies are required to sustain those reaching out of poverty and improving the rate of poverty alleviation. In addition to this, both government and donor funded programmes should aim to be owned and led by Government of Nepal to drive internal capacities for sustained poverty reduction in Nepal. This intervention report seeks to provide some initial answers to these issues.

**Figure 1 Location Map of Mid and Far West Regions**

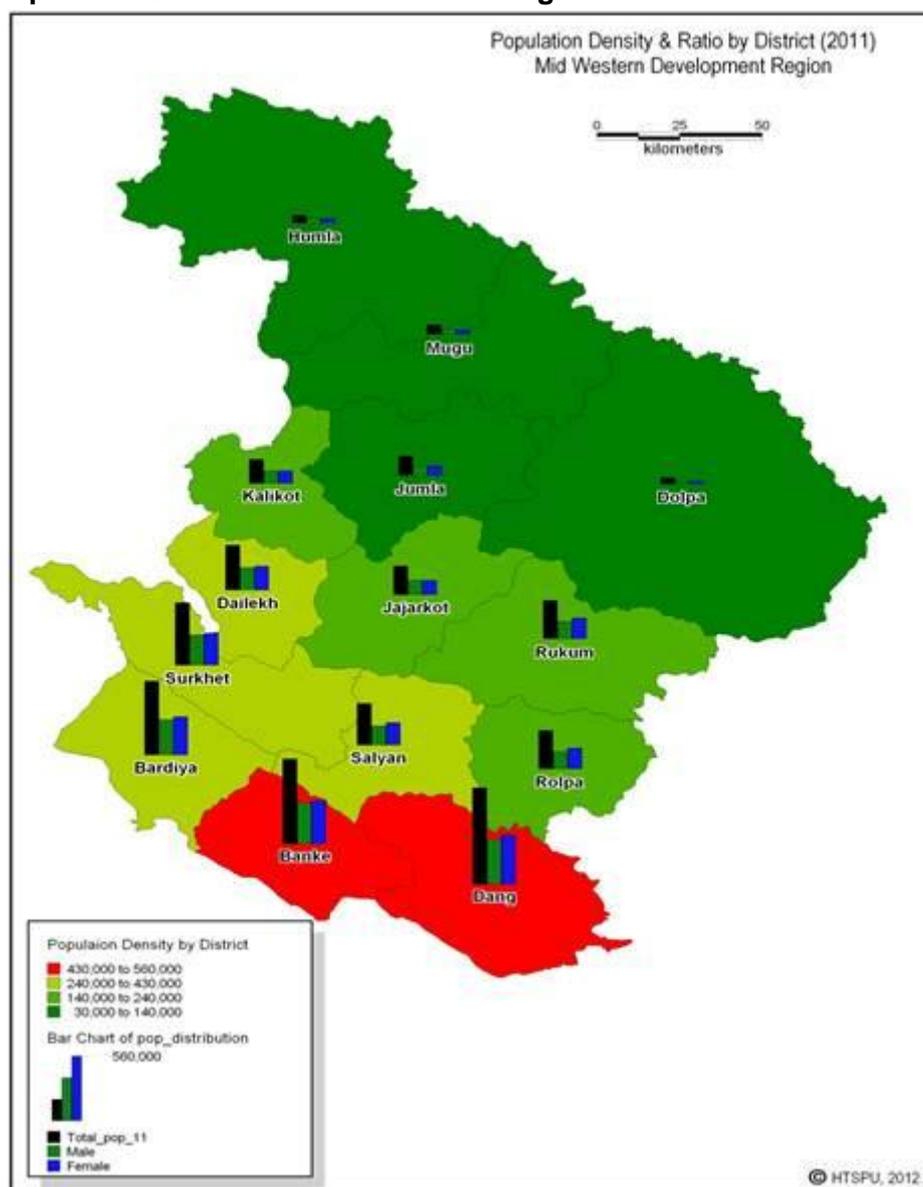


Poverty and vulnerability, through both external threats to livelihoods (shocks, hazards, risks) and internal coping capacity (resilience), as well as social empowerment, are linked. Often the links made between targeting those that are poor with those that are vulnerable are not robust enough. As defined in earlier outputs of this broader study (see Final Report, August 2012), poverty is multi-dimensional; it is not only related to economic indicators, but also social exclusion (e.g. powerlessness), health, access to services and food security/nutrition. This broader study has identified that there are key indicators that can be determinants of chronic poverty and vulnerability in Nepal and the Mid and Far West regions specifically. One key finding is also that vulnerability is not as strongly associated or linked to poverty as theory suggests. In fact, Nepal shows a clear trend that the Mid and Far West regions are significantly worse in terms of poverty levels than the other regions of Nepal. There is greater homogeneity across all regions when vulnerability indicators are analysed. This is important to consider when targeting beneficiaries for development interventions.

**Figure 2 Population Density in Far West Region**



**Figure 3 Population Distribution in Mid-West Region**



### 8.3 Approach & Limitations

#### 8.3.1 Introduction

This is predominantly a desk based study, with limited qualitative analysis. Firstly, to determine whether interventions in the MFW have successfully addressed chronic poverty and vulnerability and secondly, to identify key strategies that may be employed in future interventions that may improve the effectiveness and impact of development interventions in the Mid and Far West of Nepal. The team undertook an round of 'intervention information collection', gathering documents from completed development interventions, from a wide range of sources (included Government, Donor and NGO), carried out consultations with key stakeholders and undertook a mapping exercise and analysis of current donor strategies used to implement interventions in the MFW. Details of these methodologies are provided in more detail below.

### **8.3.2 Selection Criteria**

Following a series of initial consultations with donors and conducting an internet based search for relevant information, a matrix of all completed programmes working in the MFW regions was collated (see Annex C). Based on the Terms of Reference given (see Annex A), the team agreed a selection criteria in order to review a limited number of programmes (see Annex C). The 5 categories chosen for programme review selection were:

- **Geographic coverage** – Mid/Far West or nationwide?
- **Programme Focus/ Sector** (as per the ToR, the impact of roads investments were of particular interest)
- **Duration of the programme** (number of phases)
- **Focus on the chronic poor** –definition(s) of poverty/ targeting
- **Projects start date** – no earlier than 1998

### **8.3.3 Stakeholder Consultation**

Following review of programme documents, consultations were carried out with donors/ programme teams and evaluators to discuss and clarify results reported in the specific programmes selected for review, in addition to understanding how donors have designed and implemented interventions in the MFW and how they have collated information on development interventions in the MFW. A further review of current donor strategies and a mapping exercise of intervention information were also carried out. A list of the stakeholder consultation is provided in Annex D.

### **8.3.4 Mapping**

A mapping exercise was undertaken to illustrate the current and past activities in the Mid and Far West, in addition to demographics and financial resources by district. A GIS Mapping expert was used to create these maps, based on a series of data sources including programme information and data from the Central Bureau of Statistics (CBS) and the National Planning Commission (NPC).

### **8.3.5 Limitations to the study**

Due to the limited time available, a cut off period of programmes starting no earlier than 1998 was given to the selection to keep the process manageable, so some key impacts may be missed if experienced before then.

The standard and quality of evaluation reports and monitoring and evaluation frameworks vary considerably from programme to programme, meaning the review of some intervention evaluations were more subjective.

## **8.4 Donor Interventions in the Mid and Far West Regions**

### **8.4.1 Introduction**

This section describes the findings from the mapping exercise, donor strategy analysis (nationwide) and a summary of the programmes reviewed, for evidence of success in addressing chronic poverty and vulnerability through interventions operating in the Mid and Far West of Nepal. The final section of this chapter details the key findings from these different analyses.

### **8.4.2 Mapping the Mid and Far West**

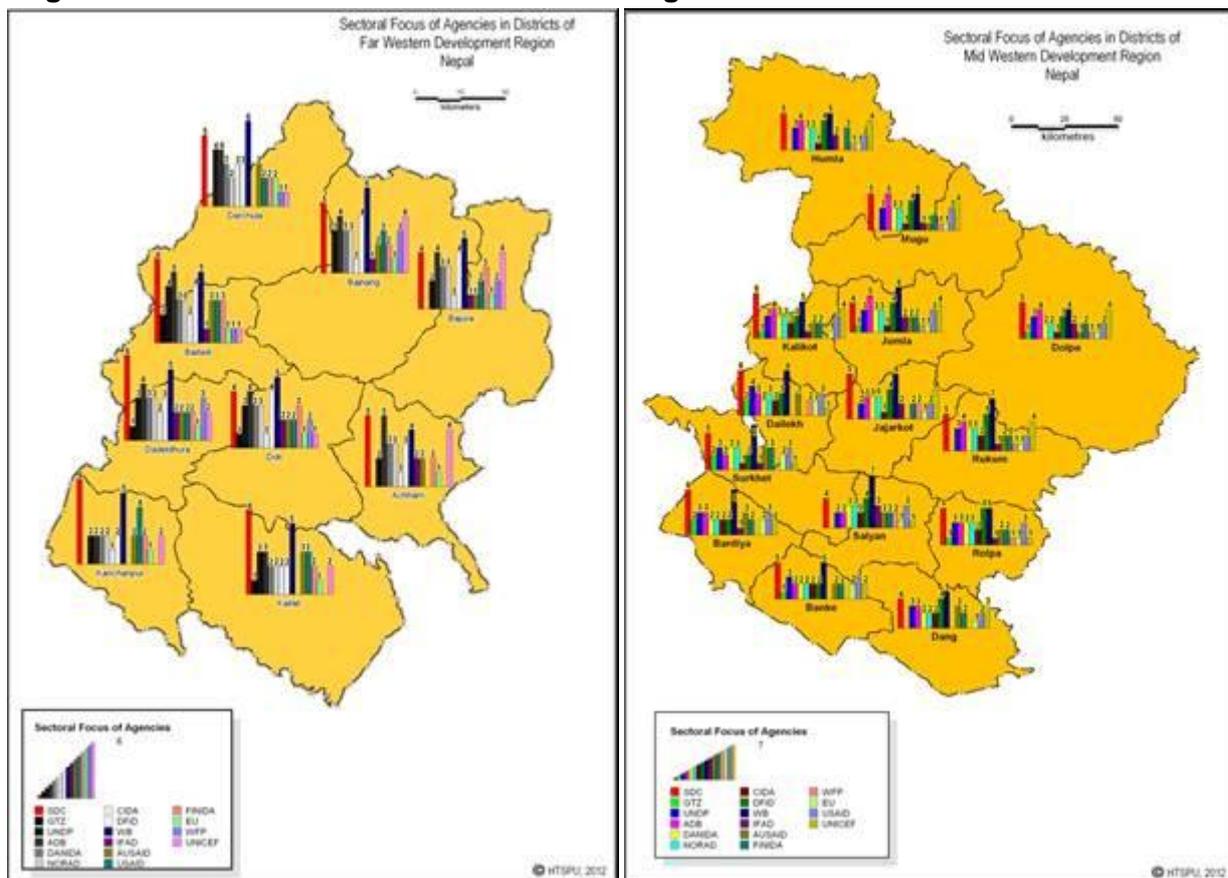
Three different types of maps were produced, using several sources of information, to illustrate the donor presence across all districts in the MFW, programme activities by sector in each district of the MFW and the budget allocation by district in the MFW for the fiscal year 2011/12. A summary of the analysis is detailed below.

### **Programmes supported by Major Development Agencies**

Sixteen major funding agencies are currently active in the Mid and Far West development regions, supporting 11 different programmes either through the Government of Nepal or various development partners. All of these sixteen agencies are present in a total of six out of the twenty-four districts (Jumla, Dolpa, Rolpa, Baitadi, Dadeldhura and Doti) of the two regions. Among the agencies, the World Bank supports seven programmes – the highest by any funding agency – in Rukum and Salyan. Likewise, a total of twelve agencies support the education sector in three districts – Bajura, Bajhang and Achham – of the region. Dolpa district has eight programmes operating with funding from major donors; this district also happens to be the district with the least numbers of programmes (that are funded by the major agencies) running among the districts in the region. Similarly, a total of thirteen agencies are involved in Dang, Achham and Kanchanpur. This is the lowest representation of major agencies in comparison to other districts in the MFW region. In the Far West, activities in the education sector are greatest in all Far West districts and community development programmes are common in all districts. Connectivity activities (such as roads and large scale infrastructure) are low across the Far West. A similar pattern emerged in the Mid-West, with all districts showing a high presence of education focused and community development programmes. Please refer to the maps in Figures 4 and 5 for detailed information.

**Figure 4 Donor Activities in Far West Region**

**Figure 5 Donor Activities in Mid-West Region**



**Government Budget for the Fiscal Year 2011/12**

Total budget allocated to the MFW development region in the fiscal year 2011/12 is NRs 28.145 billion. The highest allocation is for Kailali district (Far West), with NRs. 2,547.5 and the lowest is in Salyan (Mid West) with NRs 773.3 million. In terms of programmes, the highest allocation is in the irrigation sector in Banke, with NRs 1,037.3 million in allocation. Overall budget allocation of the two regions indicates that local development and education sectors are the top priority sectors, whci ties in with donor activity by sector in the regions. In terms of population, the highest per-capita allocation is in Dolpa district (Mid-West), with NRs 27,747 allocation. This is followed by Humla and Mugu districts (both in Mid West) with NRs 19,347 and NRs 16,682 allocated respectively. According to National Planning Commission’s (NPC) district poverty ranking, Mugu, Humla and Dolpa are ranked lowest, second lowest and sixth from the bottom. Additionally, Karnali districts have the highest per capita allocation among all the districts of the regions. Furthermore, Dang has the lowest per-capita allocation with NRs 2,273, followed by Kanchanpur and Surkhet, with NRs 2,809 and 3,290 respectively. More information can be inferred from Table 1 below.

**Table 1 Budget Allocations (Per capita and Annual) for 2011/12 for Mid and Far West Districts**

| District               | Number of Municipalities | Number of VDCs | Per-capita Budget (NRs) | Annual Budget (NRs) 2011/12 |
|------------------------|--------------------------|----------------|-------------------------|-----------------------------|
| <b>Mid West Region</b> |                          |                |                         |                             |
| Banke                  | 1.00                     | 46.00          | 4,446                   | 2,191,848,540               |
| Bardiya                | 1.00                     | 31.00          | 3,529                   | 1,506,731,120               |
| Dailekh                | 1.00                     | 55.00          | 4,351                   | 1,147,938,050               |
| Dang                   | 2.00                     | 39.00          | 2,273                   | 1,268,215,540               |
| Dolpa                  |                          | 23.00          | 27,747                  | 1,018,334,370               |
| Humla                  |                          | 27.00          | 19,347                  | 986,858,790                 |
| Jajarkot               |                          | 30.00          | 5,185                   | 894,699,740                 |
| Jumla                  |                          | 30.00          | 9,903                   | 1,076,816,320               |
| Kalikot                |                          | 30.00          | 8,429                   | 1,193,780,450               |
| Mugu                   |                          | 24.00          | 16,682                  | 922,691,440                 |
| Pyuthan                |                          | 49.00          | 4,074                   | 958,091,430                 |
| Rolpa                  |                          | 51.00          | 4,576                   | 1,039,187,400               |
| Rukum                  |                          | 43.00          | 5,100                   | 1,075,527,240               |
| Salyan                 |                          | 47.00          | 3,175                   | 773,316,540                 |
| Surkhet                | 1.00                     | 50.00          | 3,290                   | 1,184,905,260               |
| <b>Far West Region</b> |                          |                |                         |                             |
| Achham                 |                          | 75.00          | 4,913                   | 1,267,597,530               |
| Baitadi                | 1.00                     | 62.00          | 4,485                   | 1,130,707,000               |
| Bajhang                |                          | 47.00          | 5,129                   | 1,006,608,390               |
| Bajura                 |                          | 27.00          | 6,443                   | 873,096,820                 |
| Dadeldhura             | 1.00                     | 20.00          | 6,242                   | 883,537,850                 |
| Darchaula              |                          | 41.00          | 6,580                   | 878,140,770                 |
| Doti                   | 1.00                     | 50.00          | 5,056                   | 1,070,986,000               |
| Kailali                | 2.00                     | 42.00          | 3,307                   | 2,547,515,410               |
| Kanchanpur             | 1.00                     | 19.00          | 2,809                   | 1,248,162,960               |
| <b>Total</b>           | <b>12.00</b>             | <b>958.00</b>  |                         | <b>28,145,294,960.00</b>    |

### 8.4.3 Review of Donor Strategies for Nepal

The overall objective of development interventions in Nepal should tie in to the Government of Nepal's, which is to support the emergence of a '*Prosperous, Peaceful and Just Nepal*' where all Nepali's can lead their life with dignity ('Three Year Plan Approach Paper' 2010/11 – 2012/13, Government of Nepal). This translates into enhancing asset bases relating to social, physical, financial, human, political and natural capital, as well as concurrently ensuring a sound resilient system to cope with both internal and external shocks. Thus, development interventions are meaningful if they contribute to the multi-dimensional needs of poverty and vulnerability.

An analysis of the key strategies formed by donors was conducted in parallel with considering how these have influenced the implementation of development interventions in

Nepal. The drawback to this analysis was that the strategy outlines were presented more broadly on a national scale. Specific strategies for the Mid- and Far-West regions could not be determined. A synthesis of the key donors reviewed, including their donor strategy, programme/sector focus, lessons learned and development constraints, can be found in Annex E. Developments constraints identified by the donor strategies reviewed can be summarised as:

- **Social exclusion and disadvantaged groups**
- **Lack of reliable infrastructure and rural to urban connectivity**
- **Limited access to basic services in rural areas**
- **Food insecurity and malnutrition**
- **Weak political situation, rule of law and weak governance**
- **Environment and climate change, affecting agricultural/economic growth**

These issues draw a parallel to a recent joint study by ADB, DFID and ILO (Nepal: Critical Development Constraints, 2009), which identified four key strands of critical development constraints that are affecting inclusive and effective economic growth in Nepal. These can be summarised as:

1. **Weak governance and slow recovery from civil conflict**
2. **Inadequate infrastructure base**
3. **Poor industrial relations and labour market rigidities**
4. **Inability to accelerate the slow structural transformation of the country**

The paper also identified critical factors to be addressed in order to transform economic growth into inclusive growth as being:

1. **Lack of productive employment opportunities**, particularly in rural areas, due to poor agricultural growth.
2. **Unequal access to economic opportunities**, due mainly to unequal access to education and skills development, infrastructure facilities (roads and electricity) and productive assets (land and credit)
  - to improve agricultural productivity;
  - to engage in non-agricultural activities;
  - to migrate abroad.
3. **Formal/non-formal rules and structures** that generate disadvantages to certain groups on the basis of caste, gender, ethnicity and religion
4. **Inadequate social safety nets.**

The review of donor strategies also found that there are common themes in terms of programme focus and development strategy planning that address the development constraints described above and are built upon from lessons learned in previous donor interventions. These are described in the following paragraphs.

### **The strength behind development in Nepal is more effective at the community level**

One of CIDA's key principles is that development should be community driven and community groups should be given greater autonomy and control over their own development agendas. This is also taken as one of the World Bank's areas of focus, using the Community Driven Development concept as the driving force for the formulae under the Poverty Alleviation Fund.

CIDA has found through programme experience that communities and community groups can bring about social transformation, economic development and effective and equitable governance if they are:

- organized for collective action towards a shared vision and common vision,
- empowered for building self-confidence and self-esteem
- Mobilized to contribute to the strengthening of human and social capital.

### **Poor themselves are best suited to manage their own needs and resources by organising themselves in a group**

Taking the community level development further, donors are now also recognising that the formation and organisation of groups by communities can be used a catalyst for change, particularly success has been noted in the formation of community forest user groups and savings and credit cooperatives (World Bank and IFAD). JICA recognise that effective programming requires strong capacity building, community participation and action and a greater degree of autonomy and authority given to the local level government. In addition, ADB also comment that community-based projects need to be consistent with local-level capacity.

### **Essential to connect Nepal's rural poor to the rest of the country and to the market**

Lack of access and connectivity to rural areas is one of the biggest contributors to poverty in Nepal. In particular, it is often the poorest and most excluded groups that are the furthest out of reach and connectivity between market centres and rural roads is the key to developing pocket development (WB, ADB).

### **Social inclusion and conflict sensitivity is important**

There are significant differences in the development and poverty reduction levels between advantaged and disadvantaged social groups. The UN recognise that social exclusion is caused by caste, ethnic, gender, religious and region-based discrimination as suffered by Nepal's women and girls, Dalits, Janajatis (ethnic groups), Madhesis (Terai communities), people living in remote areas, people with disabilities, religious minorities and others. Social mobilization programmes have helped the poor to form self-help groups, which can serve as building blocks for present and future interventions. Inclusion and empowerment of these groups are required at all levels in order to be able to make critical development decisions on their own.

### **Linkages between livelihoods and the environment need strengthening**

Food security is a major issue across Nepal, but particularly in rural regions, including mountains. Households are often only food sufficient for 9 months or less per year. This is impacted by harsh environments, particularly in the high mountains where productivity is low. The UN and EU recognise that environmental issues and the threat from natural disasters need to be further mainstreamed into the government development planning process.

### **Region-specific strategies need to be strengthened**

Donor strategies are all based on national development constraints and how to overcome these. There are no strategies that have been identified based on constraints to specific regions, or where they are identified, they not addressed fully. The Mid and Far west regions have been identified as the poorest and most vulnerable regions in Nepal. Despite the past 30 plus years of development interventions and a more focused presence in the MFW region over more recent years, there has been little change in this trend. Focused strategies that address regional variations and constraints would make development interventions more effective.

#### **8.4.4 Development Interventions in the Mid and Far West**

A total of eleven programmes were selected for review using the selection criteria detailed in Chapter 3. A matrix was drawn up which provides key details of each of the programmes and the key lessons learned that were reported by the impact evaluation reports (See Annex C). Interventions were reviewed on successful impact through the lens of development and addressing poverty and vulnerability in the MFW.

In general, interventions are implemented in a multi-faceted manner, such that a road or infrastructure programme considers social, economic and environmental dimensions to be just as vital to the success of an intervention as construction. Many current and recently completed programmes have been built upon by their predecessors from the last 30 years' or so development activity in Nepal. For example the Decentralised Local Governance Support Programme (DLGSP) was the successor programme of the Decentralisation Support Programme (DSP) (started in 1994), the Participatory District Development Programme (PDDP), the Local Governance Programme (LGP) and LGP/PDDP Bridging Phase Programme, LPBPP (UNDP/ Norway/DFID). DLGSP is now the predecessor to the current Local Governance and Community Development Programme (LGCDP). RAP has also evolved through several phases and has been built upon by earlier roads programmes.

#### **Overall Impacts**

Analysis from earlier outputs of this broader study illustrate that there are clear variations in poverty between and within the Mid and Far West Districts, whereas there is greater homogeneity in vulnerability across the MFW and Nepal in general. While the data holds strong, there is no practical evidence from programme evaluations to suggest this is obvious in interventions. Despite enormous investments made and some marked progress, it is clear that many people are still not able to graduate permanently out of poverty.

The review highlighted that there are many different styles to evaluating the impacts of a programme. This also makes it difficult to compare the successful elements against one another. Table 2 below illustrates a summary of the reported key impacts from the programmes reviewed. Some impacts are reported in terms of per capita income growth, while others report an increase in physical or human assets, such a leasehold land or average number of days paid employment received. The ultimate objective of all these programmes is to reduce poverty of the targeted beneficiaries, particularly vulnerable and excluded groups. The table highlights that some programmes are more successful in their approach than others. For instance, PAF reports a real per capita consumption growth of 31% for participants, against a -2% growth for non-participants. The Karnali Employment

Programme was only able to report an average of 13 days' work per person with an average daily wage rate for men and women at NRs 201 – below the national average.

Social mobilization programmes have helped the poor to form self-help groups, which can serve as building blocks for present and future interventions. Reviews undertaken conclude that social mobilization programmes are having greater impact when focusing efforts in remote areas that are complemented by livelihood components which meet the needs of the poorest of the poor (e.g. RAP, WUPAP, Sahakarya).

**Table 2 Reported Impacts from Interventions**

| Programme  | Reported Impacts  |
|--|---|
| Poverty Alleviation Fund   | <ol style="list-style-type: none"> <li>1. <b>Real per capita consumption growth = 31 %</b> over a two year PAF intervention period.</li> <li>2. In the absence of PAF = the targeted households would have recorded about negative 2 per cent growth</li> </ol>   |
| Western Upland Poverty Alleviation Project (WUPAP)   | <ol style="list-style-type: none"> <li>1. Physical/financial assets: <b>11.200ha land to &gt;14,300 households</b> - moderately satisfactory;</li> <li>2. Food Security infrastructures: reported by farmers to be most successful component - rated moderately unsatisfactory.</li> <li>3. Income: modest impact on impact due to food security initiatives/group formed on Leasehold land, (no figures documented)</li> </ol>   |
| Decentralized Rural Infrastructure and Livelihood Project (DRILP)                            | <ol style="list-style-type: none"> <li>1. <b>Increased per capita income 124.89%</b> (2011) Target = 25% increase.</li> <li>2. District wise, Jumla has highest increase rate. 2,397 public utilities and services along road alignment (59% increase, 2011).</li> <li>3. 480 vehicles operating in 9 districts = 74.54% increase, 2011).</li> <li>4. 48.79% workers employed at least 90 days/year, 47.91% = DAG, 30% = women (2011)</li> </ol>  |
| Rural Access Programme   | <ol style="list-style-type: none"> <li>1. <b>Increased average HH income between pre and post RAP = 218%</b> (NRs 33,515 to 106,652).</li> <li>2. Average male to female ratio in districts = 49:51.</li> <li>3. <b>Road Building Groups: Dalit &amp; Janajati represent 54% women = 32%</b></li> <li>4. Ratio spend on household consumption vs asset creation pre RAP= 90:10, post RAP = 65:35 - substantial increased investment in IGAs.</li> <li>5. Road construction: <ul style="list-style-type: none"> <li>o <b>ST impact = lower migration</b>, access to local employment opportunities.</li> <li>o Post road completion = LT migration to Gulf region + increased remittance level.</li> </ul> </li> </ol> |
| Agriculture Perspective Plan Support Programme: District Agriculture Development Fund (DADF) | <ol style="list-style-type: none"> <li>1. <b>'Estimated' 290,000 Households benefited from DADF.</b></li> <li>2. <b>'Estimated' 12,500 Households moved out of extreme poverty</b> (defined as poverty line 20% below national poverty line).</li> <li>3. 'Estimated' a further <b>12,500 Households moved out of poverty</b> (CBS poverty line).</li> <li>4. 45% HHs who received assets benefited most - incomes of 73,500 HHs significantly improved from DADF interventions</li> </ol>  |
| Decentralized Local Governance Programme (DLGSP)   | <ol style="list-style-type: none"> <li>1. <b>66 Districts and 880 VDCs covered</b> (not distinguished by District) = 59,1629 Households benefited.</li> <li>2. 27,221 COs formed.</li> <li>3. Creation of social capital = accessed services improved socio-economic condition/on-going.</li> </ol>   |

| Programme                                      | Reported Impacts   |
|--|--|
| Sahakarya                                      | <ol style="list-style-type: none"> <li>1. EOP survey: <b>28 % households living below the poverty line.</b> (44.8 % Mid-Western &amp; 41 % Far Western region households living in poverty).</li> <li>2. <b>HH income: target (Rs 46, 670) surpassed by 39%.</b></li> <li>3. Coverage: implemented in 57% VDCs of 5 programme districts.</li> <li>4. Reached over 55,000 HHs (target 30,000 HHs) - 12% Janajatis, 30% Dalits</li> </ol>  |
| Karnali Employment Programme                   | <ol style="list-style-type: none"> <li>1. Average days of work = 13/person.</li> <li>2. Average wage rate = 201 NRs/day.</li> <li>3. <b>Beneficiaries = 21.4 % Dalits, 4.9% Janajatis, 47.4% women</b></li> <li>4. Average HH income = NRs 56,624, of which KEP wages = NRs 2,573, non-KEP = NRs 15,126, rest = agriculture and social pensions.</li> </ol>  |
| Food Security Initiative Project               | <ol style="list-style-type: none"> <li>1. <b>Reduced vulnerability of 6,817 households</b> and 3,180 children.</li> <li>2. <b>Food sufficiency level of beneficiary households increased by at least 60%</b></li> <li>3. 2,920 HHs = average income NRs 2,514 from HVPs, average annual income from all other sources = NRs 6,436.</li> </ol>  |
| Micro-Enterprise Development Programme (MEDEP) | <ol style="list-style-type: none"> <li>1. A higher proportion of MEDEP participants are involved in business than non-participants.</li> <li>2. From 832 participant respondents: <b>64% have private enterprises</b>, 12% members in group enterprises, 4% employed in enterprises of other MEDEP participants, 20% did not have enterprises.</li> <li>3. <b>Per capita income: participants = Rs 26,961</b> and non-participants = Rs. 12,514.00. Difference = 117%. (2010)</li> </ol> |
| Community Support Programme                    | <ol style="list-style-type: none"> <li>1. Economic impact: <b>4.88m person days/20,000 person years' FT jobs created.</b></li> <li>2. At least 1 fulltime job created in 10,000 hhs through skill development &amp; IGAs.</li> <li>3. Social Impact: <b>P&amp;E (including women) brought into programme activities</b> - representation in management committees = awareness and confidence to communities.</li> </ol>  |

(Source: Programme Impact Assessment/End of Project Surveys – see references)

The Sahakarya programme illustrated that an effective community development model should be integrated and multidisciplinary. The programme addressed the issue of poverty in a focused yet multi-disciplinary approach (community health and economic development). As a result, the impact evaluation for the intervention was more tangible. Sahakarya provided support to manage health issues like diarrhoea through community infrastructure projects, for example, constructing drinking water schemes and the installation of improved pit latrines. In addition the programme conducted awareness raising schemes, imparting knowledge on personal sanitation and hygiene in the communities. In the economic development stream, Sahakarya focused on agricultural production supported by irrigation, improved seed and plant protection measures to increase productivity. This component also supported the transfer of cultivation technology and appropriate varieties to enhance cropping intensity and production, selling produce through cooperatives to achieve efficiency in marketing, according to community needs, delivering services through the specialised CBOs and integrating their services at the community level.

Effective interventions have also found to be successful when using specific targeting approaches to those that will benefit the most (i.e. specific groups such as Dalits, Janajatis and women) in the most rural regions of the MFW. PAF found that adopting the same approach across all their programme districts is not effective. For example, when promoting market linkages within a community, they realised that in certain parts of the MFW districts, communities were limited in terms of which markets they could reach. In the subsequent phase of PAF the focus has moved to more of a regional focus, implementing a 'pocket development' approach, whereby products specific to that area will be promoted and the key issues hindering market access will be addressed (such connectivity). WUPAP has also found that addressing a livestock programme across the intervention area does not improve the lives of the poor. Instead, the programme has carried out research into other areas of agriculture that will benefit different ecological zones. For example they are researching the cultivation of medicinal and herbal plants in the mountain areas that grow at specific altitudes. MEDEP also found a link between the type of enterprise adopted with socio-economic issues – more women would take on enterprises focused on agricultural products for example. Through focusing on these target groups, MEDEP reported that while nearly three quarters of the participants households have moved out of poverty (73.1%), the contribution of MEDEP to poverty reduction is higher among women, Dalit and other Terai caste.

### **Outreach**

The programmes reviewed varied from nationwide focus to specific focus within the Mid and Far West Regions. For example PAF is aiming to roll out nationwide, but started its pilot focusing in the poorest districts of Nepal, which were within the MFW. The subsequent phases have since rolled out to further districts across Nepal. Therefore, it is difficult to attribute all impacts made by PAF to improvements in poverty in the MFW regions. Other programmes, specific to the MFW have reported improvements in poverty reduction, as illustrated in Table 1, though some more than others. Programmes that have focused within the MFW have also demonstrated a targeted approach to specific social groups as beneficiaries. However, the targeting of these groups is not always carried out in a robust manner and can vary from programme to programme.

Often the poorest and most vulnerable groups, that are the target beneficiaries for most interventions are situated in the most remote areas of the MFW regions. Many interventions are directing efforts at the issue of reaching these beneficiaries, who will benefit most from the programme impacts. Issues of remoteness and connectivity, in addition to conflicts, in the MFW region, do impede progress. Some programmes have managed to persevere through such difficulties, such as APPSP during the conflicts in 2006, however construction works are often affected, such as in RAP and DRILP. Secondly, remote regions are now being addressed.

Often beneficiaries are found to overlap across programmes operating in the same VDCs, which makes it even more difficult to attribute change solely to one programme. For instance the recent impact assessment for RAP indicates that programme impacts on increased remittances are solely due to involvement in RAP. Given the number of programmes that operate across the same area it is impossible to confirm this. PAF, APPSP and WUPAP have also experienced the same issue when identifying the benefits of disbursing livestock – which goat belongs to which programme? PAF have since tried to overcome this issue through forming collaborations with programmes, donors NGOs who are operating in the same areas undertaking similar activities, to ensure the full benefits are received by the appropriate target beneficiaries.

### **Institutional arrangements**

Many institutions are common to many donor projects, such as saving and credit groups, community organisations, partner organisations, or user groups like Road Building Groups, Community Forestry User Groups or local NGOs.

Many programmes have created partner organisations or community groups that run in parallel with other programmes. The sustainability of these in the post-intervention period is questionable, depending on the amount of follow-on support that the intervention can offer. It is difficult to determine the sustained impact due to the current gap in post project evaluation reporting – for example five to ten years after a project has left an area. Groups that are formed into a legally functioning body by the government, such as forest user groups in the Leasehold Forestry element of WUPAP highlights that that they can be successful when managed in the right way.

Programmes that are initiated directly through the Government of Nepal are not always effective. Such as RAP, the initial implementation was through DoLIDAR directly, which saw ineffective results and a fundamental shift to implementation by an external executing agency (in this case an international company) to provide technical oversight and management. Issues of sustainability arise, where the professionalism that the external agency brings might not be sustainable by government alone. This highlights a requirement for more institutional improvements within the government to be made.

Some programmes have been successful only where the donor staff/external agencies are present at the local level to assist with implementation. The capacity of local level NGOs, service providers and District level government are often not at the level that is required to offer assistance under multiple programmes and sectors – particularly in areas of skills development, administrative and financial management or entrepreneurial training. For

example during the APPSP DADF, large grants were disbursed for agriculture development to local user organizations competitively and successfully, but this would have been an easy victim of corruption without such external officials present, particularly during times of conflict. In WUPAP, the evaluation (IFAD) has assessed similar activities as being “moderately satisfactory”, however the programme has suffered particularly in areas of financial management through the formation of savings and credit groups. The programme concluded that local microfinance institutional capacity needs to be improved rather than expecting the programme to deliver micro-finance support.

Interventions require time at the start to ensure that effective institutions are integrated into the programme design that otherwise may not survive after the project. Through PAF, as an autonomous body, it is able to allow local Partner Organisations to benefit from the programme by forming as a federation that is endorsed by the government. Being an autonomous body has its advantages though it can mean PAF might not always work in collaboration with line agency objectives. Other donor interventions like the DLGSP have been unduly ambitious in programme activities without implementing effective institutional arrangements.

#### **8.4.5 Main Findings**

Based on the review of donor strategies, mapping and interventions, some key findings can be drawn from the impacts of donor interventions:

- 1. Programmes are multi-faceted:** both donors and governments recognise that in order to address the multi-dimensional nature of poverty, interventions need to also be designed with a more multi-faceted approach. For example, road programmes, such as RAP, need to integrate a clear social component to address social exclusion and activities such as promoting income generating activities to improve local economies where programme is operating. It takes several years for the poor to reap economic gains from roads. It is, therefore, essential to concurrently provide vocational training, enterprise development trainings, income generating activities so that the benefits of roads may accrue to the poor in the immediate term. The Sahakarya programme also addressed dimensions of poverty by addressing health economic development using a streamlined community development approach. Community development programs are successful if they go beyond “creating awareness” and “social and political” empowerment, using a multi-faceted approach.
- 2. Multiple targeting strategies are used to identify the poor:** There is confusion over what is meant by chronic poor, vulnerability and excluded groups. Definitions of these vary from programme to programme, depending on the type of intervention being undertaken.
- 3. The impact of interventions is difficult to assess or compare due to poor monitoring and evaluation:** Often interventions have poorly designed M&E components, with no or insufficient baseline data. Approaches are not homogenous, meaning it is difficult to compare impacts across different interventions.
- 4. Blanket approaches are not effective, even within regions or districts:** Specific strategies are required for specific contexts, such as ecological zones that can affect how successful development interventions are. In Nepal’s context, programmes should consider differences between the Terai, hills and mountains, within the Mid and Far West. The evaluation of PAF phase 1, realised that pocket development would work

better than a blanket approach, due to the varying geography across Nepal, particularly in the Mid and Far West. This would enable communities within the intervention area to connect to markets outside and would increase the type of opportunities beyond the direct community.

5. **Regional development strategies are non-existent:** Donors and government alike prepare a country level strategy that focuses on the key development constraints at a national level. Following this review and analysis of data in the broader study, it is clear that distinct differences lie between the 'West, Central and East' as one grouping and the 'Mid and Far West' as another grouping. Even within the Mid and Far West there are differences, with the Far West showing signs of being much worse than the Mid West. Strategies do not directly address this issue of context specific development interventions, although it has been acknowledged in one or two donor strategies; USAID do refer to the need to address regional differences in their most recent strategy document for Nepal (2009 – 2013 and JICA list rural mountain communities as a priority area under their Rolling Plan (2009).

## References

- ADB, 'Country Partnership Strategy, Nepa, 2010 – 2012' (October 2009)
- ADB, 'Country Operations Business Plan 2012 – 2014' (September 2011)
- ADB, DFID, ILO 'Nepal: Critical Constraints to Development' (2009)
- ADB, 'Outcome Monitoring Survey (OMS): Decentralised Rural Livelihoods Investment Programme (DRILP)' (2011)
- Bajracharya, P & Shrestha, TP 'An Assessment of Community Support Programme' (July 2009)
- DANIDA 'The Right to a Better Life: Strategy for Denmark's Development Cooperation' (June 2012)
- Devkota, BM 'Impact Assessment Report Rural Access Programme Phase 1' (January 2012)
- DFID, 'Nepal Portfolio Performance Review' (2010)
- DFID 'BAR Results Offer Nepal: MDG Pillar Strategic priority: Poverty, Hunger and Vulnerability' (2010)
- EU, 'Nepal Country Strategy Paper 2007-2013 Mid- Term Review Document IP 2011-2013' (April 2010)
- Government of Nepal, National Planning Commission, 'Three Year Plan Approach Paper: 2010/11 - 2012/13' (August 2010)
- HTSPE, 'Agriculture Perspective Plan Support Programme: Summary Report' (August 2009)
- IFAD 'Western Uplands Poverty Alleviation Project (WUPAP) Joint Review Mission' (December 2011)
- IFAD, 'Country Strategic Opportunities Programme, Nepal' (2006)
- IMC Worldwide/Helvetas 'Implementing the Rural Access Programme Nepal: Project Completion Report' (July 2008)
- JICA, 'Japan/JICA NPPR Background Paper' (2010)
- JICA, 'Rolling Plan' (2009)
- Jones, S *et al.* 'Agriculture Perspective Plan Support Programme: District Agricultural Development Fund (DADF) Impact Assessment Study' (August 2008)
- Meier, U *et al.* 'Final Report End Evaluation of the Decentralised Local Governance Support Programme (DLGSP) in Nepal' (July 2009)
- Nepal South Asia Centre, UNOP Malaysia, 'Review of Poverty Alleviation Initiatives in Nepal' (November 2002)
- Pandey, TN *et al.* 'Final Evaluation Report of Food Security Initiative (FSI) Project' (January 2012)
- Parajuli, D *et al.* 'Impact of Social Fund on the Welfare of Rural Households: Evidence from the Nepal Poverty Alleviation Fund' (April 2012)
- Premchander, S *et al.* 'Impact Assessment of Micro-Enterprise Development Programme' (November 2010)
- SEEPOR Consultancy Pvt. Ltd. 'Sahakarya End of Project Survey Report' (December 2008)
- TEAM Consult Pvt. Ltd 'Final Report of the Assessment of Results of Karnali Employment Programme' (December 2011)
- USAID, 'Country Assistance Strategy Nepal 2009 – 2013'
- UNDP, 'Country Programme Action Plan Extension 2011 – 2012' (2010)
- World Bank 'Annual Progress Report, 2010/2011' (January 2012)

World Bank 'Implementation Completion and Results Report: Nepal Poverty Alleviation Fund' (October 2009)  
World Bank, 'Interim Strategy for Nepal' (2007)

## **Annexes**

**Annex A: Terms of Reference**

**Annex B: Programme Review Documents**

**Annex C: Stakeholder Consultation**

**Annex D: Donor Strategy Synthesis**

## **Annex A: Terms of Reference**

### **An Inclusive Growth Strategy for the Mid-West and Far-West Regions of Nepal that delivers on poverty, vulnerability, food security and nutritional outcomes**

#### **Terms of Reference for Phase 1, Outputs 5-14:**

##### **Defining the problem and evidence base for solutions**

### **Background**

Nepal is a poor country, its per capita gross domestic product (GDP) is one of the lowest in the South Asia region and Nepal is where Sri Lanka was in the 1960s (2009 ADB, DFID, ILO). The incidence of poverty has reduced from 42% in 1995/6 to about 31% in 2003/4 but alongside rises in inequality; the Gini coefficient has increased from 0.31 to 0.41 over the same time period (CBS 2006). Approximately 55% of the population survive on \$1.25 per day or less and 78% on up to \$2 per day.

Geographic disparities are evident. Economic and social outcomes are worse in rural and remote areas. Poverty levels are highest and access to services lowest in the Mid-West and Far-West regions. These regions are very remote and most of the terrain is mountainous. According to national statistics the incidence of poverty in 2003-4 was 27% in the Western region compared with 45% in the Mid-West and 41% in the Far-West (CBS 2006). Infant mortality in the Mid-West region (97 per 1000 live births) is almost double the rate in the Western region (56 per 1000 live births) (DHS 2006). The Maoist insurgency started in 1996 in the Mid-West hills and the death toll has been highest here.

There is a low population density in the Mid- and Far-West and most people are self employed in subsistence agriculture. Agriculture is small scale, with little cultivable land, mainly rain fed, resulting in low productivity. Access is poor and there are few markets. Food security is a chronic problem in these regions with food shortages recorded since the early 1970s (NAGA 2010). As a result almost half of all adult men are temporary migrants to India – but wages are low and the average annual remittances are less than half the national average (CBS 2006).

A central response in the Mid- and Far-West has been short-term and humanitarian. Food subsidies and food aid has been provided to these regions for decades. In some districts food aid has become a key source of food (NAGA 2010). In parallel the agriculture sector has focused on trying to achieve food security in these areas by providing inputs to improve agricultural production. However in the hills and mountains the continued reliance on food aid suggests that this approach is unviable.

We need a different response in the Mid- and Far-West regions that addresses the fundamental causes of chronic poverty and vulnerability, particularly in relation to nutrition and food insecurity. We need to develop feasible, inclusive, long-term, social and economic pathways to development. Pathways that are resilient to the impacts of climate change. As a first step we need to better define and understand the problem.

Food and nutrition security are critical and timely issues for Nepal. The Ministry of Agriculture and Co-operatives is developing a Food Security and Nutrition 5-year plan. The Ministry of Health and Population is developing an action plan that follows on from the

National Nutrition Gap Analysis and both of these documents will be used to develop an investment plan to submit to the Global Agriculture and Food Security Programme. This piece of work will provide a useful input into all of these plans and have been widely discussed with both Government and donors.

### **Objective**

To define the underlying causes of chronic poverty and vulnerability – particularly in relation to economic security, food insecurity and nutrition – in the Mid- and Far-West regions and to test the assumption that these are critical factors impeding development.

### **Outputs achieved to date**

1. An agreed definition of chronic poverty and vulnerability<sup>15</sup> in Nepal.
2. Identify indicators that are available to measure chronic poverty and vulnerability.
3. Using existing data, describe the geographic and social distribution of chronic poverty and vulnerability in the Mid- and Far-West regions vis-à-vis other regions.
4. Using existing data, describe the distribution of, and trends in, chronic poverty and vulnerability in the Mid- and Far-West regions identify the critical region, zones (i.e. Karnali zone) and if possible within the region or zones, the most critical districts.

### **Work to carried out under this ToR**

1. Revise the existing analysis based on the data from NLSS III, mini DHS 2010 and DHS 2011, UNICEF Karnali study and any other new data sources that come to light during the study
2. Extend the existing analysis to provide trends data, as far as possible, based on NLSS 1 2 and 3.
3. Using existing data test the assumption that chronic poverty and vulnerability are key development issues in the Mid- and Far-West regions relative to other regions in Nepal.
4. Undertake further analysis to investigate the relative importance of different factors in determining poverty and vulnerability outcomes. This should include non-income gap poverty indicators e.g. access to electricity.
5. Using existing data, describe the various strategies, such as migration, taking loans, restricting consumption etc. employed in the Mid- and Far-West regions in response to chronic poverty and vulnerability.
6. Undertake a round of 'intervention information' collection to provide a comprehensive picture of the interventions carried out in the MFW and determine whether there is any evidence of interventions that have successfully addressed chronic poverty and vulnerability. This should specifically include the impact of road investments.
7. Inform the methodologies adopted by and share information with the 'Koshi Hills Study team' to provide a 'comparison' of development trends between the two regions.

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<sup>15</sup>

Chronic poverty and vulnerability should include but not be confined by issues such as social, economic, food, nutrition and climatic vulnerabilities, access to productive resources, markets, services and infrastructure

8. Based on this analysis identify key strategies that may be employed in future interventions that may improve the effectiveness and impact of development interventions in the Mid and Far West of Nepal.
9. Based on the data collected and possible interventions suggest both methodologies and impact and outcome indicators that can be used to more accurately track chronic poverty trends and programme impacts in the MFW. This should be developed in conjunction with the Government and other development partners and be based as far as possible in existing indicators to ensure a common approach and the ability to track trends.
10. Using the finding of the outputs above, produce a narrative report, of no more than 40 pages, with a 4-page executive summary and with illustrative maps, graphs and tables. Additional information such as the methodology used, additional statistical tables should all be in annexes. A power point presentation which summaries key findings should be provided. The consultant(s) will be asked to present key findings to a Government and donor group.

It should be noted that is expected that the study team will require additional expertise and resources to complete the revised terms of reference. In particular national expertise with knowledge of interventions in the Mid and Far West and their impact.

### **Scope of Work**

Step 1 Short review of literature: Examine the latest international, regional and local academic and development literature<sup>16</sup> to determine a definition(s) of chronic poverty and vulnerability and the means to assess its presence, distribution, depth and changes over time. These definition(s) should be discussed with DFID and key stakeholders to achieve a consensus.

Step 2 Review of data: Identify the data that is available to be able to measure (cross sectional and trends) the selected definition(s) of chronic poverty and vulnerability at the appropriate regional, zonal or district level.

Step 3 Agreement on definition and measurement: Present the parameters, definition(s) and key suggested indicators for measurement (including the limitations) to DFID and discuss with DFID and other key stakeholders to reach an agreement on what will be used for the data analysis stage.

Step 4 Data trends: Using existing data, describe the distribution and trends of chronic poverty and vulnerability in the Mid- and Far-West regions vis-à-vis other regions. Within the Mid- and Far-West regions, identify whether some zones are more critical than regions and within the regions/zone whether there are some more critical districts.

Step 5 Predictive analysis: Using regression techniques, test the assumption that chronic poverty and vulnerability are key issues and analyse the relative importance of different factors contributing to chronic poverty and vulnerability in the Mid- and Far-West regions vis-à-vis other regions. Repeat this analysis for zones, if zones are more critical than regions.

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<sup>16</sup> Including key NGO, bilateral, UN and multilateral reports.

Step 6: Response strategies: Using existing data, describe the various strategies employed by people in the Mid- and Far-West regions in response to chronic poverty and vulnerability and make initial assessments on their effectiveness.

Step 7: Recommendations on future approaches and monitoring needs: Analyse the implications of the findings above and what this might imply for future interventions in the MFW.

Step 8. In particular the study should inform new DFID programming in chronic poverty. This should include specific recommendations on how to integrate better monitoring of chronic poverty and outcomes into future programmes.

This will require the consultants to work closely and share all available data with the design team for the new DFID local government, infrastructure and economic development programmes, with a specific emphasis on assessing the contribution of road access to development outcomes.

Secondary analysis of existing data will be conducted (e.g. Nepal Living Standard Surveys, Demographic Health Surveys, WFP surveillance, Government data, climate change reports) alongside examining existing reports, and discussions with key stakeholders. In particular the study team should work closely with the Koshi Hills study team to ensure data and methodologies are shared and comparisons between the two regions can be made.

The results should also be compared to what we know about chronic poverty and vulnerability in South Asia. This should include discussions with DFID regional programmes and the Research and Evidence Department of DFID.

A short summary of the revised steps one to four using tables and graphs to illustrate key points should be delivered to DFID before the predictive analysis in step five begins. The final report should include recommendations for further analysis and on the basis of this report possible programming options.

### **Timeframe**

Outputs the study will be completed in approximately 6 months. The timeline for key milestones are as given below:

|    | Milestone  | Weeks from date of study commencement |
|----|--|---------------------------------------|
| 1. | Revised 1-4 report (with trends) and presentation to selected stakeholders | 2 Months                              |
| 2. | Intervention report  | 4 Months                              |
| 2. | Draft report   | 5 months                              |
| 3. | Final report & presentation  | 6 months                              |

### **Coordination and Technical Support**

Simon Lucas (Head, Inclusive Growth Team) will coordinate the study. The Inclusive Growth Team will provide technical support.

**Skill set and Competencies Required**

A team that can deliver the following competencies:

- At least 15 years' experience in economic statistical analysis including multivariate analysis and modelling, in poverty, vulnerability, food and nutrition security
- Experience in and knowledge of key issues in poverty, food security and nutrition in South Asia and Nepal
- Knowledge of interventions in the mid-far west and their development impact

**Reference material**

Key contacts will be supplied by DFID. The relevant reference material and data sets should be obtained by the consultant(s).

## Annex B: Programme Review Documents

| Programme   | Selection Criteria   |   |   |   |              |
|---|--|---|---|---|--------------|
| Poverty Alleviation Fund  | <b>Geographical Coverage</b>   | <b>Sector/Components</b>  | <b>Longevity/Duration</b>   | <b>Focus on Chronic Poor/Vulnerable</b>   | <b>Donor</b> |
|   | Pilot: <b>Darchula, Mugu, Kapilvastu, Pyuthan, Ramechchap, Siraha</b><br>Phase 2: <b>Accham, Baitadi, Bhajang, Bajura, Dadeldhura, Dailekh, Dolpa, Humla, Jajarkot, Jumla, Kalikot, Mahottari, Rasuwa, Rautahat, Rolpa, Rukum, Sarlahi, Singhuli</b> | i) Livelihoods: Agriculture, Fishing, Forestry;<br>ii) Social Services;<br>iii) Sub-national government administration  | Two successful phases. Going in to Phase 3 from 2013  | <b>'Hardcore - Poor'</b> = food sufficiency < 3 months;<br><b>'Medium-Poor'</b> = food sufficiency 3 - 6 months;<br><b>'Poor'</b> = food sufficiency 6 - 12 months;<br><b>'Non-Poor'</b> = food sufficiency > 12 months, among other criteria set by the communities. The targeted beneficiaries of PAF are <b>poor women, Dalits and Janjatis</b> .  | WB/ IFAD     |
| Western Upland Poverty Allevation Project (WUPAP)                 | <b>Geographical Coverage</b>   | <b>Sector/Components</b>  | <b>Longevity/Duration</b>   | <b>Focus on Chronic Poor/Vulnerable</b>   | <b>Donor</b> |
|   | Phase 1: Bajhang, Bajura, Jumla, Humla.<br>Phase 2: Dolpa, Kalikot, Dailekh, Jajarkot, Rukum, Rolpa, (Mugu).   | i) Infrastructure Development;<br>ii) Leasehold Forestry & Non-Timber Products;<br>iii) Crop & Livestock Production;<br>iv) Micro-finance/ marketing;<br>v) Institutional Support | Phased Approach - pilot successful, Phase 2 risk status = 'Actual Problem' Dec 2011 Review. | (i) Hill and Mountain districts of Mid and Far Western Regions.<br>(ii) Poor and food insecure least developed districts as per policy of 10th Plan as guided by Poverty Reduction Strategy Paper (PRSP).<br>(iii) VDCs and communities were selected on DDC poverty ranking with focus on isolated/excluded community.<br>(iv) Beneficiaries were selected by a participatory process of wealth-ranking based on cast, ethnicity, gender | IFAD         |
| Decentralized Rural Infrastructure and Livelihood Project (DRILP) | <b>Geographical Coverage</b>   | <b>Sector/Components</b>  | <b>Longevity/Duration</b>   | <b>Focus on Chronic Poor/Vulnerable</b>   | <b>Donor</b> |
|   | Dolpa, Jajarkot, Jumla, Mugu, Kalikot, Bajura, Humla, Bajhang, Darchula, Baitadi   | i) Rural Transport Infrastructure;<br>ii) Community Development & Rural Livelihood Restoration;<br>iii) Capacity Building & Decentralised Governance                              | Phase 1: 2005 - 2011<br>Phase 2: 2012 - 2015  | District Selection Criteria:<br>(i) Support Local Infrastructure Development (LID) policy of DoLIDAR - implement labour-based projects as peace dividend to all 75 districts.<br>(ii) DTMP prepared and approved by the DDC and acceptable to MLD<br>Rural Road Selection Criteria:<br>(i) To be listed as a priority road in the DTMP;<br>(ii) Should not have any negative impact in  | ADB/ SDC     |

| Programme  |  | Selection Criteria  |   |  |              |
|--|--|---|---|--|--------------|
|  |  | environment and settlement.   |   |  |              |
| Rural Access Programme   | <b>Geographical Coverage</b>   | <b>Sector/Components</b>  | <b>Longevity/Duration</b>   | <b>Focus on Chronic Poor/Vulnerable</b>  | <b>Donor</b> |
|  | Doti, Achham and Dailekh   | <ul style="list-style-type: none"> <li>i) Improve connectivity of rural hill communities;</li> <li>ii) Enhance economic and employment opportunities;</li> <li>iii) Increase access to market and social services for the rural poor and disadvantaged</li> </ul> | Design: 2000 - 2002<br>Phase 1: 2002 - 2008<br>Phase 2: 2008 - 2013 | District Selection:<br>i) DTMP prepared and approved by the DDC and acceptable to MLD<br><br>Rural Road Selection:<br>i) To be listed as a priority road in the DTMP;<br>ii) Should not have any negative impact in environment and settlement<br><br>Beneficiaries Selection:<br>(i) Poorest of the poor identified from "wellbeing ranking" through social mobilization process. | DFID         |
| Agriculture Perspective Plan Support Programme: District Agriculture Development Fund (DADF) | <b>Geographical Coverage</b>   | <b>Sector/Components</b>  | <b>Longevity/Duration</b>   | <b>Focus on Chronic Poor/Vulnerable</b>  | <b>Donor</b> |
|  | Siraha, Udayapur, Okhaldhunga, Sindhuli, Ramechhap, Rauthat, Arghakhachi, Kapilbastu, Pyuthan, Rolpa, Rukum, Salyan, Jajarkot, Mugu, Humla, Achham, Doti, Baitadi, Bajhang, and Bajura | <ul style="list-style-type: none"> <li>i) Agricultural growth;</li> <li>ii) Income generating activities;</li> <li>iii) capacity building;</li> <li>iv) savings and credit</li> </ul>   | 2003 - 2009   | District Selection:<br>i) Poorest districts through ranking<br>ii) Remote districts<br>iii) High % of socially excluded population.<br><br>VDC Selection:<br>(i) Less accessible part of the district.<br><br>Beneficiaries Selection:<br>(i) Dalit, very poor, Janajati and women   | DFID         |
|  | <b>Geographical Coverage</b>   | <b>Sector/Components</b>  | <b>Longevity/Duration</b>   | <b>Focus on Chronic Poor/Vulnerable</b>  | <b>Donor</b> |

| Programme  |   | Selection Criteria   |   |  |                   |
|--|---|--|---|--|-------------------|
| Decentralized Local Governance Programme (DLGSP) | 66 districts of Nepal. From Mid and Far West: Dang, Pyuthan, Salyan, Rolpa, Rukum, Banke, Bardiya, Jajarkot, Dailekh, Kalikot, Mugu, Kailali, Achham, Bajura, Bajhang, Kanchanpur, Dadeldhura, Baitadi, Darchula. | <ul style="list-style-type: none"> <li>i) Governance Development;</li> <li>ii) Social Mobilisation,</li> <li>iii) Savings &amp; credit;</li> <li>iv) Skills Development</li> </ul> | Predecessors: PDDP(Participatory District Development Programme) and LGP (Local Governance Programme). DLGSP: 2004 - 2010 | District Selection: Commitment of local bodies <ul style="list-style-type: none"> <li>i) Interaction with local government and feedback</li> <li>ii) Accessibility (this implies only for pilot phase)</li> <li>iii) Proportionate distribution in five development regions</li> <li>iv) Human Development Index of District</li> <li>v) Situation analysis (by Programme)</li> </ul> VDC Selection: DAG mapping within the District.           Beneficiary Selection: <ul style="list-style-type: none"> <li>i) Participatory poverty ranking</li> <li>ii) Welfare assessment</li> <li>iii) DAG households</li> </ul>   | GoN/ UNDP/ Norway |
|  | <b>Geographical Coverage</b>  | <b>Sector/Components</b>   | <b>Longevity/Duration</b>   | <b>Focus on Chronic Poor/Vulnerable</b>  | <b>Donor</b>      |
| Sahakarya  | Jumla, Dadeldhura, Baitadi, Dailekh and Surkhet   | <ul style="list-style-type: none"> <li>i) Community Health &amp; Sanitation</li> <li>ii) Community Economic Development</li> </ul>   | Phase 1: 2003 - 2008<br>Phase 2: 2008 - 2012  | District Selection: <ul style="list-style-type: none"> <li>i) This project was implemented in the districts where CECL implemented similar project before. (i.e. this is continuation of previous project).</li> <li>ii) CECL's policy is to work in the hilly areas of the regions with the lowest HDI.</li> </ul> VDC Selection: <ul style="list-style-type: none"> <li>i) Population of Janajati to be more than 10%</li> <li>ii) Should not be more than 3hr walking distance from the road corridor.</li> <li>iii) Agro-ecological zone (potential for high value off-season vegetables and fruits).</li> </ul> Beneficiary Selection: Poor, Dalit, Janajati and women. | CIDA              |
| <b>Geographical Coverage</b>                     | <b>Sector/Components</b>  | <b>Longevity/Duration</b>  | <b>Focus on Chronic Poor/Vulnerable</b>   | <b>Donor</b>   |                   |
| Karnali Employment Programme                     | Karnali Zone: Jumla, Humla, Mugu, Kalikot and Dolpa   | <ul style="list-style-type: none"> <li>i) Public Works (Social Protection)</li> <li>ii) Small Scale Infrastructure</li> <li>iii) Road construction</li> </ul>                      | 2006 - 2011   | Districts Selection: <ul style="list-style-type: none"> <li>(i) Districts of Karnali Zone.</li> </ul> VDC selection: <ul style="list-style-type: none"> <li>(ii) <b>All VDCs</b> of Karnali.</li> </ul> Beneficiary Selection: <ul style="list-style-type: none"> <li>(iii) 100 days of guaranteed wage employment to at least one family member of every household who</li> </ul>   | GoN               |

| Programme                                      | Selection Criteria  |   |  |   |   |
|--|---|---|--|---|---|
| Food Security Initiative Project               |   |   |  | are unemployed or do not have income from business enterprise or cultivable land to produce enough food for the family.   |   |
|  | <b>Geographical Coverage</b><br>Mugu, Humla, Rukum, Rolpa, and Banke  | <b>Sector/Components</b><br>i) Food Security<br>ii) Agriculture (Seeds)<br>iii) Livestock | <b>Longevity/Duration</b>  | <b>Focus on Chronic Poor/Vulnerable</b><br>District Selection:<br>(iv) Remoteness<br>(v) Food insecure (No of HHs that have food only for about 4-6 months),<br>(vi) Districts affected by natural disasters<br>(vii) Emergency coping capacity of people, and<br>(viii) Ecological zone (Mountain, Hill and Terai).<br>VDC Selection:<br>(i) Degree of food insecurity,<br>(ii) remoteness<br>(iii) inventory of the organization working in those VDCs in the district,<br>(iv) disadvantaged groups (caste/ethnicity (Janajati, Dalit and vulnerability) )<br>Beneficiary Selection:<br>(i) Poorest of the poor identified by wealth ranking through PRA approach. | <b>Donor</b><br>EC  |
| Micro-Enterprise Development Programme (MEDEP) | <b>Geographical Coverage</b><br>32 Districts N/wide over 3 Phases. From MFW: Baitadi, Dandeldhura, Dang, Pyuthan, Darchula, Kailali, Bardiya, Bane, Kalikot, Jumla, Dailekh, Surkhet, Salyan, Rukum, Rolpa. | <b>Sector/Components</b><br>i) Micro-Enterprise;<br>ii) Skills Development/ Training      | <b>Longevity/Duration</b><br>Phase 1: 1998 - 2003<br>Phase 2: 2003 - 2007<br>Phase 3: 2008 - 2012<br>Phase 4: Expected | <b>Focus on Chronic Poor/Vulnerable</b><br>(i) Hard-core poor families (those having annual income of less than Rs 4,404)<br>(ii) Poor scheduled caste (Dalit - there are 26 different scheduled castes in Nepal)<br>(iii) Poor Indigenous groups (there are 59 different indigenous groups of which 12 are ethnic minority groups among which 8 have been listed as endangered ethnic groups).<br>(iv) Differently Able (physically and mentally challenged)<br>(v) Deprived Women (divorced women, women-headed households)   | <b>Donor</b><br>UNDP/<br>AusAID,<br>DFID,<br>NZAID,<br>CIDA |

| Programme                   | Selection Criteria                                       |   |  |  |       |
|-----------------------------|--|---|--|--|-------|
|                             | Geographical Coverage                                    | Sector/Components   | Longevity/Duration                           | Focus on Chronic Poor/Vulnerable                                 | Donor |
| Community Support Programme | 39 Districts including all of Mid and Far West Districts | <ul style="list-style-type: none"> <li>i) Community infrastructure development</li> <li>ii) Capacity enhancement of partner organisations,</li> <li>iii) Increased access to non-formal technical and vocational education</li> <li>iv) Strengthened assets of poor &amp; excluded to sustain and benefit from basic services</li> <li>v) Enhance functional alignment and collaborative relations with local government bodies.</li> </ul> | Phase 1: 2003 - 2009<br>Phase 2: 2010 - 2014 | Conflict affected regions and people were the main focus of CSP. | DFID  |

### Lessons Reported from Programmes

| Western Upland Poverty Alleviation Program  | Observations/Lessons Learned  | Remarks  |
|---|---|--|
| <p><b>Purpose: "Poor households benefit from sustained growth of production, employment, and access to resources (water, land), services (health, education, finance) and markets."</b></p> <p><b>Project Components:</b></p> <ol style="list-style-type: none"> <li>1. Infrastructure Development</li> <li>2. Leasehold Forestry and Non-Timber Products</li> <li>3. Crop and Livestock Production</li> <li>4. Micro-finance and Marketing</li> <li>5. Institutional Support.</li> </ol> | <ul style="list-style-type: none"> <li>• <b>Insufficient attention to appropriate community-led operation and maintenance (O&amp;M)</b> arrangements due to programme focus of the infrastructure activities being heavily biased towards construction.</li> <li>• The <b>quality of scheme design and construction has also been variable</b> within the same district. This variability appears to be primarily concentrated in water supply and irrigation schemes which have been designed by <b>insufficiently experienced staff</b> and <b>without adequate technical supervision</b> during construction.</li> <li>• <b>Forging local partnerships with NGOs/private sector will support social mobilisation</b> and provide technical support services for different sectors: While WUPAP management</li> </ul> | <ul style="list-style-type: none"> <li>• Inadequate upstream activities in relation to social mobilization and training to user committees on O&amp;M.</li> <li>• TA part is overlooked and perhaps deemed unimportant.</li> <li>• Reliance on DDC's DTO for design and supervision. DTOs do not have the competence or staffing to design, supervise and monitor rural infrastructures.</li> <li>• Having to rely on DTO for a wide range of activities lead to conflict of interest and, thus, sub-standard infrastructures.</li> <li>• Local bodies and line agencies pass on their responsibility and accountability to CBOs/user</li> </ul> |

| Western Upland Poverty Alleviation Program                | Observations/Lessons Learned   | Remarks  |
|---|--|--|
| <p><b>IFAD assistance implemented by MLD and DDCs</b></p> | <p>adopted the policy of partnering with local NGOs and the private sector to assist with social mobilization and animal health activities, their failure to move in a similar direction with agriculture extension has led to limited outcomes for the target beneficiary groups.</p> <ul style="list-style-type: none"> <li>• <b>Larger CO group sizes offer a greater pool of technical, financial and administrative expertise;</b> stronger group management and account keeping skills to allow more easily rotation/succession of roles between members over time without undermining the group capacity.</li> <li>• <b>Increased sector/theme based COs would encourage further diversity and growth within local community.</b> CO groups would benefit from further sustained mobilization of all group members around a range of themes, including entrepreneurship, gender equity, expected duties and responsibility of Chairperson, manager and members of COs, loan disbursement procedure.</li> <li>• <b>The success of the Programme is contingent upon Social Mobilizers competence and dedication.</b> A great deal is expected from the SMs in strengthening the COs, LFUGs and infrastructure O&amp;M groups. SMs will therefore need to be provided with further refresher training and regular back-up and monitoring strengthened for a further phase.</li> <li>• Institutional sustainability is the weakest for the O&amp;M groups supporting infrastructure sub-projects. In practice most user groups have only so far functioned as construction committees, rather than full user groups including O&amp;M management functions, and only a small minority are therefore likely to be sustainable in their current state.</li> </ul> | <p>committees, thereby constituting reversal of accountability structure.</p> <ul style="list-style-type: none"> <li>• Private sector is being rooted out.</li> <li>• Reintroduce the role of professional contractors and consultants and re-establish the public-private-civil society balance.</li> </ul> |
| Poverty Alleviation Fund Program                          | Observations/Lessons Learned   | Remarks  |

| Western Upland Poverty Alleviation Program   | Observations/Lessons Learned   | Remarks   |
|--|--|---|
| <p><b>(PAF)</b></p> <p><b>Objective: to support the Government of Nepal (GoN) in implementing a new, targeted instrument – the Poverty Alleviation Fund (PAF) – for reaching poor and excluded communities. It aims to improve access to income-generation projects and community infrastructure for the groups that have tended to be excluded by reasons of gender, ethnicity and caste, as well as for the poorest groups in rural communities.</b></p> <p><b>Project Components:</b></p> <ol style="list-style-type: none"> <li><b>1. Income Generation Sub-projects Targeted to the Poorest and Excluded Groups;</b></li> <li><b>2. Small-Scale Village and Community Infrastructure;</b></li> <li><b>3. Innovation and Special programs;</b></li> <li><b>4. Capacity Building; and</b></li> <li><b>5. Administration of PAF.</b></li> </ol> <p><b>WB assisted and implemented by</b></p> | <ul style="list-style-type: none"> <li>• Strength of the <b>autonomous entity model</b> for project implementation, especially in the areas of transparency and results</li> <li>• Strength behind development in Nepal is highly concentrated at the <b>community level</b>; the poor themselves are best suited to manage their own needs and resources by organizing themselves in a group to collectively identify, prioritize, plan, fund, and implement their development needs.</li> <li>• An initiative to adopt direct transfer of the grant to the COs' accounts worked well (despite initial delays due mainly to poor communication with the Rastriya Banijya Bank in remote areas) and served to enhance transparency at the community level.</li> <li>• At the CO level, a monitoring sub-committee tracked each development activity implemented in the community, and findings were presented in CO regular meetings at least once a month, for discussion and recommendations of corrective measures to improve implementation.</li> <li>• The importance of <b>continuity, local knowledge</b> and continuing to perfect institutional arrangements and the engaging of POs with intimate local knowledge and good track records have contributed to successful project implementation during a period of rapid scale up</li> <li>• Necessary to allow <b>beneficiary demand to drive investment choices</b>, while carefully <b>monitoring the factors/incentives which may be driving choices</b>. In the case of Nepal, extremely poor and marginalized households have tended initially to prioritize fairly simple income generation activities over infrastructure investments, in order to</li> </ul> | <ul style="list-style-type: none"> <li>• Targeting seems to be fairly thorough: takes place at three levels: district, village and community. Six districts were selected to pilot the new PAF approach, on the basis of 'needs, diversity and security conditions' and the National Planning</li> <li>• Commission (NPC)'s district-level socio-economic indicators. Specifically, a set of 28 district-level socio-economic indicators were used to rank all districts in Nepal.</li> <li>• The six project districts were selected from among the lower third of all districts according to this ranking, with attention to the security situation and geographic distribution, and included two in the Terai, two in the hills and two in the mountains.</li> <li>• Within each district, PAF selected 25 villages based on the respective DDC poverty ranking. This was then followed by a participatory process of wealth-ranking by the village communities themselves to identify target groups/beneficiaries.</li> <li>• This participatory wealth ranking considered criteria including caste, ethnicity, gender, accessibility to services and indicators of poverty such as level of assets, food security and income. Findings were verified in public meetings at community level, and substantiated by the formal evaluation survey data.</li> <li>• There were/are concerns about bypassing local bodies (DDC/DVC) in the implementation and fund flow arrangements. GON and WB recognize the need to coordinate and engage at the sub-national level with</li> </ul> |

| Western Upland Poverty Alleviation Program                                       | Observations/Lessons Learned   | Remarks  |
|--|--|--|
| <p><b>PAF Board (GON) /Secretariat through Partner Organizations (NGOs).</b></p> | <p>improve family consumption and food security.</p> <ul style="list-style-type: none"> <li>• Cultivating demand for infrastructure may require <b>innovative options for technical assistance</b> and <b>partnerships which reflect the extreme scarcity of these services</b> in many of the more remote areas of the country. It may also be useful to review the standard per capita/CO allocation formulas which PAF has used to date, to assess whether these tilt incentives away from infrastructure and/or more costly income generation investments.</li> <li>• The challenges of <b>developing appropriate M&amp;E arrangements</b>. Measurement and impact assessment of quantitative indicators, using a large statistical sample and rigorous methodology, requires significant time and a process of technical support and capacity building.</li> <li>• Challenges of topography, climate and political context in Nepal are multifaceted and should be anticipated as far as possible.</li> <li>• Using <b>matching grants for income generation activities</b> by the extreme poor, in a phased approach, as a bridge to sustainable market linkages and microfinance. Project in which income generation sub-projects are supported through matching grants, a great deal of attention needs to be paid to the issue of linkages with markets and longer term transition to sustainable finance. PAF has approached these challenges through the institution of revolving funds and support for the emergence of co-operatives and producer federations.</li> <li>• <b>Collaboration and forming Memorandum of Understanding</b> with other programmes, donors, government departments and NGOs operating in the same Districts, VDCs and sectors to ensure further communication and streamlining</li> </ul> | <p>DDC/VDC without having to actually flow the funds and entrust management responsibility to these agencies.</p> <ul style="list-style-type: none"> <li>• This model represents Centre – Partner organization (PO)-CBO modality. Contracts are signed with CO and the TA portion signed with PO to do the social mobilization and technical support.</li> </ul> |

| Western Upland Poverty Alleviation Program   | Observations/Lessons Learned   | Remarks  |
|--|--|--|
|  | <p>of mutual benefits to the target beneficiaries rather than duplication.</p> <ul style="list-style-type: none"> <li>In subsequent phases, <b>use of the MEDEP modality</b> for integrating micro-enterprise into PAF has been successful.</li> </ul>   |  |
| Karnali Employment Program   | Observations/Lessons Learned   | Remarks  |
| <p><b>Objective: To provide 100 days of guaranteed wage employment to at least one family member of every household who are unemployed and to reach very poor households who do not have any other opportunities of employment or sources of income.</b></p> <p><b>Project Components:</b></p> <ol style="list-style-type: none"> <li><b>Labour intensive infrastructure development</b></li> <li><b>Public works programme (safety net)</b></li> <li><b>Small-scale Infrastructure</b></li> <li><b>Road Construction &amp; Maintenance</b></li> </ol> <p><b>KEP is primarily based on public works programme of safety nets.</b></p> <p><b>GON program Implemented by Karnali Region Development Unit</b></p> | <ul style="list-style-type: none"> <li><b>Complex management arrangements.</b> There are three tiers in the institutional arrangement from Ministry at MoLD (Central) down to VDC level, making it a lengthy decision making process. Monitoring is only carried out at the local level by VDCs themselves, this is not followed up by DDC or Central level.</li> <li><b>Poor social mobilisation with weak arrangements for user group formation.</b> Each VDC makes an agreement with users group and payments are made by VDC to users group. The proposals prepared by the user groups are weak and the role of the DTO in the preparation of project design appears ineffective. They are more involved in cross-checking whether the calculations are correct instead of providing guidance in the selection, preparation and supervision of projects.</li> <li><b>Insufficient presence of technical manpower</b> in the process of project selection, implementation and monitoring. Most of the projects have not been adequately designed and estimated prior to construction. In most projects, presence of the technical manpower in the project area is limited to prepare a bill of quantities and cost estimates for the purpose of payment system and for making the completion report.</li> <li>The following weakness were pointed out by local people - Insufficient budget allocation in comparison to the unemployment</li> </ul> | <ul style="list-style-type: none"> <li>Many programs rely on DTO for technical assistance – i.e from designing to supervision to certification of completion. DTOs are leanly staffed and not at all prepared to undertake the responsibilities that are imposed on them.</li> <li>Reaching out to the excluded and marginalized requires extra time, effort and resources. Targeting oftentimes is not practiced rigorously in programs implemented by local governments, at least in the current context. Targeted poverty alleviation programs are best implemented by INGO/NGOs who have the tools and the competence in such aspect.</li> </ul> |

| Western Upland Poverty Alleviation Program                          | Observations/Lessons Learned  | Remarks  |
|---|---|--|
| <b>(KRDU) at the Ministry of Local Development (MOLD)</b>           | <ul style="list-style-type: none"> <li>• Employment generation is very low (&lt;30%) in comparison to intended (100 days)</li> <li>• Lack of technical support</li> <li>• Lack of large scale programs</li> <li>• Late release of fund and late payment to employers</li> <li>• Lack of responsible person of KEP</li> <li>• Weak supervision and monitoring process from the higher level</li> <li>• Insufficient knowledge about KEP</li> <li>• <b>Average number of work days not met target of 100 days:</b> The average days of work is found to be 13 days, conclusion is that it is due to poor programme design and weak monitoring framework in place.</li> <li>• <b>Poor beneficiary targeting:</b> Analysis of KEP's selection procedures shows <u>that it has not followed targeting, eligibility and intake criteria rigorously.</u> Instead, KEP has selected all the households of each VDC. As a result the criterion of selection of an unemployed household as set out in the Operation Procedure of KRDU has been defeated, due to weak monitoring framework.</li> <li>• <b>Beneficiaries' household income was not significantly improved</b> through participating in KEP. The average income of a households amounts to NRs.56,624. Disaggregation of this into KEP wages figures out to NRs. 2,573, non KEP wages amounts to NRs.15,126 and rest (NRs.38,930) comes from the sale agricultural produce and social pensions.</li> </ul> |  |
| Sahakarya   | Observations/Lessons Learned  | Remarks  |
| <b>Objective: to improve the socio-economic condition of 30,000</b> | <ul style="list-style-type: none"> <li>• Integrated <b>multidisciplinary community development model</b> for sustainable development that dealt with problems in</li> </ul>   | <ul style="list-style-type: none"> <li>• While the content and approach was proper, the coverage was not large enough to create a VDC level</li> </ul> |

| Western Upland Poverty Alleviation Program  | Observations/Lessons Learned   | Remarks  |
|---|--|--|
| <p>households by working through 1,000 CBOs in 500 hill communities.</p> <p><b>Project Components:</b><br/>           (i) Community health;<br/>           (ii) economic development<br/>           (iii) institutional development</p> <p>CIDA assistance and implemented by CECI in partnership with 21 district based NGOs for the health component and 22 Second Tier Organisations/lead CBOs for the economic component.</p> <p>The Project was managed by a Project Management and Monitoring Unit (PMMU)</p> | <p>a packaged form. As a result, the impact of the intervention became more tangible.</p> <ul style="list-style-type: none"> <li>• For example, Sahakarya help manage the support of a diarrhoeal problem by supporting hardware parts such as construction of drinking water schemes, installation of improved pit latrines, imparting knowledge on sanitation and hygiene, appropriate hand-washing, oral rehydration techniques, management of stool of non-toilet using children.</li> <li>• <b>Promotion of multi-dimensional economic development</b> proved more effective than single focus projects. As well as production, Sahakarya supported irrigation, improved seed and plant productivity, transfer of cultivation technology and appropriate variety to enhance cropping intensity and production and selling produce through cooperatives to achieve efficiency in marketing.</li> <li>• <b>Delivering services through specialised CBOs</b> and integrated their services at the community level.</li> <li>• <b>Limited coverage of the programme meant that all components of projects could not always be carried out effectively</b> – i.e. if a VDC with particular expertise available was not participating. Participants from Jumla suggested that the project should have developed a model VDC by integrating all the components of the project. The officials of partners of Surkhet district shared that the project did not cover all of the VDC even if it has reported that the project covered that particular VDC.</li> <li>• <b>User group formation expanded as result of increased social mobilisation within communities/VDCs.</b> - two new types of CBOs emerged in response to community needs. CFUG members came up with the concept of NTFP Marketing</li> </ul> | <p>impact.</p> <ul style="list-style-type: none"> <li>• Project had some progressive success stories which could be developed further if investment had been there.</li> </ul> |

| Western Upland Poverty Alleviation Program  | Observations/Lessons Learned   | Remarks  |
|---|--|--|
|   | <p>Cooperatives and registered five such cooperatives (one in each project district). Another type of CBO that emerged was the health CBO. There are 22 such HCBOs that have emerged due to project intervention in the project area. HCBOs are not yet registered though.</p>   |  |
| Agriculture Perspective Plan Support Programme (APPSP) – District Agricultural Development Fund   | Observations/Lessons Learned   | Remarks  |
| <p><b>Objective: improve livelihoods of the poor and excluded. The short-term objective was to improve access of the poor and excluded to appropriate agriculture support services by developing and institutionalizing poor-and-excluded-friendly appropriate service delivery mechanisms, especially to those living in the remote parts of the country.</b></p> <p><b>Project Components:</b></p> <ol style="list-style-type: none"> <li>1. <b>Social mobilization</b></li> <li>2. <b>Micro financing (Savings and Credits)</b></li> <li>3. <b>Community infrastructure</b></li> <li>4. <b>Capacity building (Skill training)</b></li> <li>5. <b>Policy support</b></li> </ol> | <ul style="list-style-type: none"> <li>• <b>Asset ownership increased</b> by beneficiaries(cattle; goats, pigs, fruit trees and agricultural tools/equipment and pakki house)</li> <li>• <b>Diversifying occupations</b> as result of the DADF: People who had labor as the main occupation have changed it to agriculture, livestock and business.</li> <li>• <b>Increased cash incomes:</b> Participating households have increased their cash incomes faster than the non-participating households.</li> <li>• <b>Decrease in vulnerability:</b> A positive change in food security, household income, water availability for irrigation and crisis coping has been recorded with DADF intervention. The lowest 17% in food security (months) from own production and HH income and the highest 29% for crisis coping. However, there are many other factors at work and all the positive changes noted cannot be attributed to DADF.</li> <li>• <b>Improved access to public services:</b> Access to agricultural extension and livestock services compared to non-participants increased from 34% to 80% after the project, compared to a rise from 21% to 41% in the case of non-participants. Moreover, 75% of participating households now access these</li> </ul> | <ul style="list-style-type: none"> <li>• There are several programmes going on at the same time in the same area and all of them form their own groups. A beneficiary could be the member of several groups. Due to this duplication and overlapping of COs, it is difficult to gauge the impact of individual projects.</li> <li>• Also, local NGOs are not very effective as there is high turnover of staff due to job insecurity. This is because local NGOs survive until they get external funding. But the problem has always been the incoming of new staff - when the new face comes, they can't work effectively due to initial lack of experience and limited technical capacity.</li> <li>• The programme focal point was District Agriculture Development Office (ADO) and the effectiveness of the programme was mainly dependent on the activeness and coordinating capacity of the ADO. However, coordination among district government service providers and local government remained poor. Besides, frequent change of staff in the districts and their long absence hampered in programme implementation.</li> </ul> |

| Western Upland Poverty Alleviation Program  | Observations/Lessons Learned  | Remarks  |
|---|---|--|
| <p><b>DFID assisted, implemented through MOAC, with technical assistance support team for the DADF.</b></p> | <p>services 'regularly' or 'sometimes' compared to only 31% of non-participating households.</p> <ul style="list-style-type: none"> <li>• An increase in demand for public services by 77% (e.g, health services) and 73% demand for accessing other required services by participating HHs. This was found to be at 40% and 35% on non-participants respectively.</li> <li>• <b>Improved skills development capacity</b> within participating communities. 85% of participating households have public skill development programmes (up from 34%) compared to only 46% (up from 25%) of non-participants.</li> <li>• <b>Improved empowerment of poor, women and excluded:</b> Individual's voice in the meeting and group's voice in the community are now heard. The level of confidence of excluded increased as they are now participating in decision making and raise their voices in group meetings. 75%of the members report that their power to influence LIF/DEF groups has increased over the project duration.</li> <li>• <b>Increased mobility of women,</b> use of cash incomes, participation in agricultural marketing and community development work and violence against women has decreased.</li> <li>• <b>Increased participation of Dalits</b> and other excluded groups in the management of the groups (31% of elected positions are held by Dalits) and in raising their voices in meetings (33% of households reporting this were Dalits).</li> <li>• <b>Policy reform:</b> The DADF component of APPSP has successfully influenced the 'rules of the game' through: <ul style="list-style-type: none"> <li>a) The LSI monitoring system developed by APPSP was adopted by MOAC, to report to the National Planning Commission;</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• There was no exit strategy. Some of the groups existed before DADF started (e.g., as agriculture or livestock department or Poverty Alleviation Fund groups) were likely to sustain. Others were set up in order to access DADF funds and have received little or no social mobilization support. It is likely that most of these groups will only sustain with continued support.</li> </ul> |

| Western Upland Poverty Alleviation Program   | Observations/Lessons Learned  | Remarks  |
|--|---|--|
|  | <ul style="list-style-type: none"> <li>b) District officers (e.g., for irrigation and forestry) now use LSI categories and collect gender disaggregated data in their own programmes, which partly results from seeing these in use by DADF;</li> <li>c) MOAC and other departments now accept that targeting on the basis of social exclusion, poverty and remoteness is possible and try to do so in other programme; and</li> <li>d) DADF approach and categories are reflected increasingly in MOAC policy documents (e.g., The National Agricultural Extension Strategy (2007)).</li> </ul>  |  |
| Decentralized Local Governance Support Programme (DLGSP)   | Observations/Lessons Learned  | Remarks  |
| <p><b>Objective: to enhance effective participation of people in the governance process, thereby ensuring improved access of socio-economic services particularly to Dalits and disadvantaged groups and women.</b></p> <p><b>Project components:</b></p> <ol style="list-style-type: none"> <li>1. Village Development and Social Mobilization</li> <li>2. Saving and Credit (Micro-financing)</li> <li>3. Income Generating Activities</li> <li>4. Community Infrastructure</li> <li>5. Capacity Building</li> </ol> | <ul style="list-style-type: none"> <li>• <b>Greater social mobilisation, harmonisation and empowerment</b> of poor and exclude at community level through capacity building and strengthening of income generating activities. <b>Enabled communities to act for their own development</b> through <b>community organizations</b> and by helping them <b>forge links with the local government and civil society</b>. The 3,469 new and rehabilitated infrastructures has benefitted tens of thousands of households and the project has contributed significantly to livelihood improvement with 105,566 group and skill training programmes and 75,668 income generation programmes started by community organization members.</li> <li>• <b>Promoted social harmony</b>; local people came together to mediate disputes, resolve problems and oppose anti-social behaviour.</li> <li>• <b>Inter-community relations were improved</b> through <b>Chairperson Manager Conferences</b>.</li> <li>• <b>Savings practices of group members improved</b>; NRs. 624</li> </ul> | <ul style="list-style-type: none"> <li>• Community organisations have been the focal points of the Village Development Programme. On the one hand, the social capital they represent exists in the 66 districts waiting to be used to contribute to local governance, whilst on the other it is questionable how far many of these organisations can maintain their activism without a dedicated support programme.</li> <li>• The end evaluation found little evidence of the active participation of the poor in local planning processes as requests for support from many community organizations were being turned down again and again by local bodies, line agencies and NGOs. There was much less downward accountability, which led to bottom-up planning often being ignored.</li> <li>• The lack of good quality data has made it difficult to report on the impact of some aspects of DLGSP. The end evaluation said that “data quality is uneven, and there are gaps and inconsistencies in reporting”, whilst</li> </ul> |

| Western Upland Poverty Alleviation Program  | Observations/Lessons Learned  | Remarks   |
|---|---|---|
| <p><b>6. Policy Support</b></p> <p><b>Assisted by Norway and UNDP and implemented directly by MoLD.</b></p> | <p>million deposited during DLGSP and improved access to credit with 361,531 loans from internal savings and credit capital worth a total of NR 2,900 million (\$41 million) given out by community organisations to their members to enhance their livelihoods and meet their short term needs.</p> <ul style="list-style-type: none"> <li>• <b>Improved networks for communication at the regional (district) level.</b> Enabling environment created in DDCs through computer network, web-site and intercom; District Information &amp; Documentation Centre with GIS developed as information hub of the district; financial record keeping system of DDCs made more scientific; DDCs Income &amp; Expenditure statements made public; internal revenue of DDCs increased by 80%; 48 DDCs have assigned a gender focal person, and in general, a “social sector” is included in the DDC administrative structure.</li> <li>• <b>Improved policy and processes created at the central level:</b> Gender Budget Audit Guidelines were prepared for Local Bodies; GIS unit was established in NPC and MLD; Disadvantaged groups maps were prepared; and support to the inception phase of the LGCDP.</li> <li>• <b>Ambitious targets led to resources being spread too thin;</b> aiming to reach 1,000 VDCs, continuing support to ‘old’ community organisations and addressing non-core subjects that was diverting the programme from its core tasks of capacity building for community organisations and overcoming the exclusion of the disadvantaged groups, providing economic opportunities.</li> <li>• <b>Emphasis on delivering expected targets led to reduced quality of tasks achieved.</b> The number of community organisations formed meant that insufficient attention was</li> </ul> | <p>the mid-term review reported</p> <ul style="list-style-type: none"> <li>• DLGSP successfully brought about the social and economic empowerment of women, although it was less successful in doing the same for Dalits and the ultra-poor. This is probably explained by the more powerful, more educated and resourceful groups and group members managing to attract more benefits.</li> <li>• The end evaluation reported that to a large extent, the programme was unable to bridge the wide gap in the leadership capacity and management skill between the most disadvantaged groups and the rest of its target groups as it did not impart specific programmes focusing on this. Furthermore, monitoring was done from an overall perspective simply disaggregating data by sex and different groups without further disaggregating data by sex within the different groups. Thus, programme managers were unable to gain ample insight on the status of Dalit and ultra-poor women and make necessary adjustments.</li> <li>• Coverage in terms of district is 88%, which seems like a high coverage. But in terms of VDCs it is only 22%, which is quite low for a national project implemented for 15 years.</li> </ul> |

| Western Upland Poverty Alleviation Program   | Observations/Lessons Learned  | Remarks   |
|--|---|---|
|  | <p>given to developing their capacities. Limited support from LDF staff and the social mobilisers — with only one mobiliser per VDC and an average of 31 community organisations per VDC, alongside the ending of LDF credit capital support meant that few resources were available to support new community organisations.</p>  |   |
| Decentralized Rural Infrastructure and Livelihood Project (DRILP)  | Observations/Lessons Learned  | Remarks   |
| <p><b>Objective: To reduce rural poverty with the purpose of increasing access to economic and social services and enhance social and financial capital for poor and disadvantaged groups in a sustainable manner.</b></p> <p><b>Project Components:</b></p> <ol style="list-style-type: none"> <li>1. <b>Community development and rural livelihood restoration</b></li> <li>2. <b>Capacity development and decentralized governance</b></li> <li>3. <b>Rural transport infrastructure</b></li> <li>4. <b>Project management service</b></li> </ol> <p><b>ADB/SDC/ GIZ assisted with GoN, executed agency is DoLIDAR.</b></p> | <ul style="list-style-type: none"> <li>• <b>Capacity of DDCs enhanced and accountability and transparency improved:</b> As a result, 9 districts (50%) have prepared Annual Road Maintenance Plans (ARMP) and all 18 districts have conducted public audits and hearings in each road corridor every year.</li> <li>• <b>Weak institutional structures at the central level</b> meant that MoLD and DDC could not fulfill their financial commitment in time, causing delay to programme activities.</li> <li>• <b>Weak District level co-ordination and vacant offices</b> led to poor follow up on programme monitoring. Less coordination among LDOs, DTOs and DPOs and other district level stakeholders. Besides, in remote districts where the project has been focused, senior staff are absent for long time.</li> <li>• <b>Lack of presence of senior staff led to contractors being hired</b> - more efficient labour but went against the principle of job creation and equal treatment to all in works.</li> <li>• Delay in the delegation of the authorization for implementation and management of local infrastructure activities from LDO to DTO Chiefs.</li> <li>• <b>Lack of aspiration from government:</b> The local government has not yet taken the ownership of road maintenance fully. Several stretches of road are not maintained as per plan.</li> </ul> | <ul style="list-style-type: none"> <li>• The outcome of the project shows that per capita income has increased by 124.89% and public utilities and services increased by 59.06%.</li> <li>• Freight volume is increased by 115.2%. This is good indication of increased productive activities in the road corridor due to inclusion of socio-economic and supplementary infrastructure components in the roads project and the input of high value crops, new technology, and irrigation facilities, including access to market due to existence of the road project. Increased participation of women and DAG in construction work (30.01% women and 47.91% DAG) and their position in VWRCC (22.46% women and 34.93% DAG) and BG (37.76% women and 56.6% DAG) is a clear indication of empowerment of women and DAG due to social mobilization component of the project.</li> </ul> |

| Western Upland Poverty Alleviation Program  | Observations/Lessons Learned   | Remarks  |
|---|--|--|
|   | <ul style="list-style-type: none"> <li>• Skilled labourers from DAG in RBGs work are often unavailable and there are not sufficient numbers of local/women labourers in contract packages in some districts.</li> <li>• VWRCC being inactive due to <b>inadequate operational cost</b> for VWRCC making them unsustainable in the long term. Emergency fund collected is very little for most of the ongoing sub-projects, particularly when labour safety during construction is one of the concerns of the project.</li> <li>• <b>Per capita income increased</b> by 124.89% of the people living in the Zone of influence.</li> <li>• <b>Public utilities and services</b> (shops, pharmacies, schools, new village roads) <b>increased</b> by 59.06% from the previous year along the road.</li> <li>• <b>Improved empowerment and social mobilisation. Increased participation of women</b> (30.01%) <b>and DAG</b> (47.91%) in overall workers. Their position in VWRCC is 22.46% and 34.93% respectively and their representation in the key positions of Building Groups (BG) is 37.76% and 56.6% .</li> </ul> |  |
| Rural Access Programme (RAP)  | Observations/Lessons Learned   | Remarks  |
| <p><b>Objective: To provide more secure and sustainable rural livelihoods for poor and disadvantaged in hill areas of Nepal, thereby improving poor people’s access to goods, markets and services that they value in the targeted hill areas. Additionally, it aims to lift extremely poor and</b></p> | <ul style="list-style-type: none"> <li>• RAP has been the <b>dominant awareness-raising vehicle for all</b>, building up peer pressure within and between groups. Then the availability of new surplus income from RAP wages has led to <b>improvements in school enrolment</b> that now sees little discrimination between boys and girls.</li> <li>• <b>Employment in road construction appears more attractive than migration</b> for work in other parts of Nepal or India, reflected by a decline in migration from an average of 7.4% down to 2.5%. At the same time the short-term increase in</li> </ul>   | <ul style="list-style-type: none"> <li>• Impact assessment of RAP Phase 1 is inconsistent: <ul style="list-style-type: none"> <li>- Assigns all changes between baseline and endline to the impact of RAP (there is no non RAP control group)</li> <li>- No evidence is provided that baseline and endline households are homogeneous (e.g. in caste distribution)</li> <li>- There is some evidence that the endline survey does not reflect the RGB as there are almost 50%</li> </ul> </li> </ul> |

| Rural Access Programme (RAP)  | Observations/Lessons Learned   | Remarks   |
|---|--|---|
| <p><b>disadvantaged people out of poverty in 7 hill districts through road building and adopting labour based, environment friendly (LEP) approaches.</b></p> <p><b>Project Components:</b></p> <ol style="list-style-type: none"> <li>1. <b>Construction of new road</b></li> <li>2. <b>Socio-economic development (Organizational development, saving and credit, income generative activities, and institutional development)</b></li> <li>3. <b>Maintenance of old road</b></li> <li>4. <b>Supplementary infrastructure (Micro-irrigation, water supply, school building, short span trail bridges, community buildings.</b></li> </ol> <p><b>Assisted by DFID funding, originally implemented through DoLIDAR, now managed by external executing agency.</b></p> | <p>wage income has provided the means for future migrations abroad once the wage earning capacity reduces after the completion of construction.</p> <ul style="list-style-type: none"> <li>• <b>Increased awareness of health centres generated by RAP, increased income and in parallel with improved government policy.</b> Visits to local health centres and clinics increased from an average of 41% to 47% for males and 54% for females. The free immunization of children below five years of age has risen from an average of 59% for selective diseases up to 93% for all the common diseases.</li> <li>• <b>Livelihood Resource Person's (LRPs) help to promote income diversification</b> of household's through awareness raising and providing technical support services. In the past one year, 64% of households have received services from LRPs developed by RAP, and which did not exist before. 18% of households have received services from the District Agricultural Development Office and 20% from the District Livestock service offices during the same one-year period.</li> <li>• <b>Increased voice and empowerment</b> of poor and excluded members of communities. RBGs from the poorest and most disadvantaged groups of society are now joining in community level decision making with increased vigour evidenced by their increased involvement in general and executive membership in the various community-based organizations.</li> <li>• <b>Increased participation of other user groups</b> in the operating districts; 78% of households are now participating in community forest user groups as compared with 47% during the baseline study this is largely due to LFP but with some increase attributable to RAP.</li> <li>• <b>Dependency on moneylenders has decreased</b> dramatically.</li> </ul> | <p>women in the survey yet only 32% in RGBs.</p> <ul style="list-style-type: none"> <li>• A big impact on the lives of marginal and substantial farmers has been noted due to inclusion of socio-economic and supplementary infrastructure components in the roads project. Social harmony and cohesion among people enhanced due to economic and occupational group formation. Participation of Janajati, women and Dalit in key position increased (55% JJ, 41% dalit). Decision making process transformed towards women at HH level.</li> <li>• Household income increased by 2.3 times due to intervention of high value crops, new technology, irrigation and access to market. On average, saving habit improved and 51% of the incomes have been used in land purchase. Economic exploitation against poor is decreasing as loan taking system is shifting from moneylenders to group funds and cooperatives.</li> <li>• Child mortality rate decreased due to increased awareness and utilization of health service. Illiteracy rate decreased from 33 to 13% and primary enrolment increased.</li> <li>• Could the economic impact be improved with all-weather roads?</li> </ul> |

| Rural Access Programme (RAP)   | Observations/Lessons Learned  | Remarks   |
|--|---|---|
|  | <p>Even so, 27% of households still borrow some money to cover household expenditures and create assets.</p> <ul style="list-style-type: none"> <li>• <b>Social mobilization should be viewed as a long term goal</b> to carry on after the life of the programme. It is difficult to obtain desired results in a short project life, especially working with poor and excluded communities. Evidence shows that the RAP formed socio-economic groups are not matured yet.</li> <li>• <b>Services given to IG groups is inadequate</b>, thus requires further support of professionals (even after the project phase out). Though some positive signs have been seen, activities are not in scale to make visible impact.</li> <li>• People do not have access to market all year around, especially during rainy season, which is the season of high production of high value crops.</li> <li>• <b>Fair weather road requires major maintenance each year.</b> It is beyond the affordability of poor communities as this requires a regular financial source and technical skills.</li> </ul> |   |
| Micro-Enterprise Development Programme (MEDEP)   | Observations/Lessons Learned  | Remarks   |
| <p><b>Objective: Poverty reduction through the creation and development of micro-enterprises owned and operated by low income poor families, majority of whom, are rural women.</b></p> <p><b>Project Components:</b></p> <ol style="list-style-type: none"> <li><b>1. Entrepreneurship Development</b></li> <li><b>2. Technical Skills Development</b></li> </ol> | <ul style="list-style-type: none"> <li>• Lesson from Phase 1 ( 1998 – 2003): <b>market-oriented, integrated approach</b> (potential entrepreneur selection and training, skills training, micro-finance, market linkage and promotion), in <b>partnership with existing government and private sector institutions</b>, provides an effective and cost-effective approach to developing relatively large numbers of sustainable micro-enterprises among the poor.</li> <li>• Lesson from Phase 2 (2004 – 2008): an <b>integrated approach is effective</b> and even more essential when one targets persons whose social and/or economic situations put them in even more restricted, poor, and vulnerable conditions.</li> </ul>   | <ul style="list-style-type: none"> <li>• MEDEP modality to be rolled out into nationwide planning and integrated in policy</li> </ul> |

| Rural Access Programme (RAP)   | Observations/Lessons Learned  | Remarks  |
|--|---|--|
| <p>3. Access to Finance</p> <p>4. Appropriate Technology Testing &amp; Transfer</p> <p>5. Marketing Linkages &amp; Business Counselling</p> <p>6. Social Mobilisation for entrepreneurship</p>   | <ul style="list-style-type: none"> <li>• <b>Success of the MEDEP modality:</b> <ul style="list-style-type: none"> <li>- focused on assisting people to identify latent entrepreneurial skills by themselves (entrepreneurship development, rather than enterprise development/establishment)</li> <li>- Targeting and selection of the poor</li> <li>- group approach to enterprise promotion</li> <li>- No rush and no pressure</li> <li>- high professional/ technical advice and supervision of the grass roots service providers from APSOs and MEDEP</li> <li>- Cost effective: total cost over the ten year period vs. annual income earned by an entrepreneur; the cost is almost recovered in a year by the entrepreneur</li> </ul> </li> <li>• Constraints to the programme: <ul style="list-style-type: none"> <li>- programme was constrained by conflicts,</li> <li>- difficulties in delivering technical services</li> <li>- withdrawal of the ADB/N to provide financial services</li> </ul> </li> </ul> |  |
| Food Security Initiatives  | Observations/Lessons Learned  | Remarks  |
| <p><b>Objective: to address increases in food prices and food insecurity of vulnerable and disadvantaged households of 5 districts in Mid-Western region (Karnali Zone) by increasing food production and incomes, and improving nutrition.</b></p> <p><b>Project Components:</b></p> <ol style="list-style-type: none"> <li>1. Provide immediate support</li> <li>2. Develop capacity</li> <li>3. Deliver input supply</li> <li>4. Develop micro-irrigation facility</li> </ol> | <ul style="list-style-type: none"> <li>• Increasing agriculture production, improves nutritional practices to the vulnerable families, especially children and mothers suffering from increased food prices and malnutrition</li> <li>• Increasing household income improves financial capacity of direct and indirect project beneficiaries</li> <li>• Scope of the project was appropriate method to upgrade local methods and strategies with innovative practices related to sustainable agriculture</li> <li>• Strong networking and coordinated efforts of line agencies and service providers in the leadership of DADO is vital in order to maximise effectiveness and harnessing on-going activities</li> </ul>  | <ul style="list-style-type: none"> <li>• Short term programme aimed only at food security and nutrition – is it sustainable in the long-term if upscaled?</li> <li>• Required more focus on increasing incomes using off-farm activities?</li> </ul> |

| Rural Access Programme (RAP)  | Observations/Lessons Learned  | Remarks   |
|---|---|---|
| <b>5. Market network to promote sustainable agriculture</b>   |   |   |
| Community Support Programme (CSP)   | Observations/Lessons Learned  | Remarks   |
| <p><b>Objective: aimed to address conflict affected regions and people, adopted development strategies that would be tangible, visible cost-effective, able to complete in a short period and executed in a transparent manner to meet the needs of the community.</b></p> <p><b>Project Components:</b></p> <ol style="list-style-type: none"> <li>1. <b>Community Infrastructure Development</b></li> <li>2. <b>Capacity enhancement of partner organisations</b></li> <li>3. <b>Increased access to non-formal technical and vocational education</b></li> <li>4. <b>Strengthened assets of p&amp;e to sustain and benefit from basic services</b></li> <li>5. <b>Enhance functional alignment and collaborative relations with local government bodies</b></li> </ol> | <ul style="list-style-type: none"> <li>• Community infrastructure – targeted achievements not feasible (particularly rural electrification) – frequent disturbances listed as one of reasons for this.</li> <li>• Focus on specific physical infrastructures – like school/health has had impact on both education and health including improved quality of teaching and more people using health services. Additionally, built up greater sense of trust/partnership within community and led to improved incomes through greater productivity from irrigation facilities, access to roads/foot trails.</li> </ul> | <ul style="list-style-type: none"> <li>• Designed originally as short term peace/conflict focused programme at community level</li> <li>• Integrated community approach, while also able to respond during times of conflict</li> <li>• Strengthened design when realised demand was there for longer term focus during interim to handover to LGCDP</li> </ul> |

### Annex C: Stakeholder Consultation

| Name                           | Position, Organisation   | Contact  | Programme           | Status   | Details of Meeting |
|--------------------------------|--|--|---------------------|--|--------------------|
| <b>Bashu Babu Aryal</b>        | Country Programme Coordinator, IFAD                                | <a href="mailto:b.aryal@ifad.org">b.aryal@ifad.org</a>   | WUPAP               | Ongoing but completed 2 phases (as of 15/07/12)  | Met on 12/07/12    |
| <b>Bharat Patel</b>            | RAP Programme Manager  | <a href="mailto:Bpatel@imc-nepal.com">Bpatel@imc-nepal.com</a>   | RAP                 | completed RAP 1, RAP 2 completes March 2013      | Met on 12/07/12    |
| <b>Arjun Poudel</b>            | RAP Deputy Programme Manager                                       | <a href="mailto:Apoudel@imcw-nepal.com">Apoudel@imcw-nepal.com</a>   | RAP                 |  |                    |
| <b>Dr Raghu Shrestha</b>       | Governance Adviser, LGCDP  | ?  | DLGSP/LGCDP         | Finished 2009, LGCDP current phase finishes 2012 | Met on 13/07/12    |
| <b>Yogendra Badahur Gurung</b> | Associate Professor, Central Department for Population Studies, TU | <a href="mailto:gurungyb@wlink.com.np">gurungyb@wlink.com.np</a>   | PAF - baseline data | Baseline collection annually                     | Met 14/07/12       |
| <b>Tulasi Neupane</b>          | Chairman, Team Consult   | -  | KEP                 | ongoing, completed 1 phase?                      | met 15/07/12       |
| <b>Bhupendra Basnet</b>        | Director General   | <a href="mailto:dq@dolidar.wlink.com.np/">dq@dolidar.wlink.com.np/</a><br><a href="mailto:bbasnet66@gmail.com">bbasnet66@gmail.com</a> | RCIW/DoLIDAR        | completed - replacement programmes underway      | met 15/07/12       |
| <b>Ram Prasad Dhakal</b>       | Chief of Programme Division  | -  | PAF                 | Currently Phase 3                                | met 16/07/12       |

## Annex D: Donor Strategy Synthesis

| Agency | Development Challenge/ Development Constraints  | Lessons from experience   | Strategic Focus  | Programme Sectors  |
|--------|---|---|--|--|
| WB     | <p>5. Lack of elected local officials increases the challenge of making the state downwardly accountable to its citizens.</p> <p>6. Income disparity has increased.</p> <p>7. most serious infrastructure bottlenecks to growth - Poor reliability and access to power</p> <p>8. Poor physical connectivity</p> <p>9. Increasing access to secondary school education (grades 9-12)</p> <p>10. The nutritional status of women and children has not shown much improvement with chronic malnutrition affecting about half of the nation's children.</p> | <p>11. Conflict: raised awareness that the Nepali state had been associated with exclusionary political, social, and economic institutions that did not reflect the country's diversity. This has led to the rise of identity politics with an increasing demand for state recognition and greater accommodation of diverse social, cultural, and ethnic identities.</p> <ul style="list-style-type: none"> <li>The evidence is compelling that the strength behind development in Nepal is highly concentrated at the community level.</li> <li>Poor themselves are best suited to manage their own needs and resources by organizing themselves in a group and collectively identifying, prioritizing, planning, funding, and implementing their development needs.</li> <li>Enhancing the efficiency of irrigation systems will continue to be critical to increase agricultural productivity, incomes, and rural livelihoods.</li> <li>It is essential to connect Nepal's rural poor to the rest of the country and to the market:</li> </ul> | <p>Three pillars:</p> <ol style="list-style-type: none"> <li><b>Enhancing connectivity and productivity</b> for growth.</li> <li><b>Reducing vulnerabilities and improving resilience.</b></li> <li><b>Promoting access to better quality services.</b></li> </ol>   | <p>Roads, food security and livelihood vulnerability, education, health, urban services, and disaster management.</p> <p>Improving access to finance and investment climate, trade facilitation, lending to Small and Medium Enterprises and trade finance facilities for local banks;</p> <p>Power development, agriculture and climate change.</p> <p>Governance, accountability, gender equality and social inclusion are themes that run across all three pillars.</p> |
| ADB    | <ul style="list-style-type: none"> <li>Underlying <u>causes of the conflict</u> and the fundamental problems : <ul style="list-style-type: none"> <li>exclusion,</li> <li>lack of connectivity in rural areas,</li> <li>limited access to rural financial services, and</li> <li>limited access to basic social services</li> </ul> </li> <li>Uneven Progress in Poverty Reduction and Social Development.</li> <li>Improving Public Financial Management</li> </ul>  | <ul style="list-style-type: none"> <li>Serious challenges exist in addressing inequality and exclusion which have prevented the <u>equitable distribution of benefits from development efforts.</u></li> <li><u>Country Assistance Program Evaluation, CAPE, pointed out key lessons learned:</u> <ul style="list-style-type: none"> <li>infrastructure deficits mainly in rural and urban roads, and power supply,</li> <li>active involvement of civil society organizations</li> <li>community-based projects need to be</li> </ul> </li> </ul>  | <p>Four pillars as follows:</p> <ul style="list-style-type: none"> <li><b>Pillar I:</b> Broad based and Inclusive High Economic Growth</li> <li><b>Pillar II:</b> Inclusive Social Development</li> <li><b>Pillar III:</b> Governance and State Strengthening</li> <li><b>Pillar IV:</b> Climate Change and Environment Sustainability Inclusive Growth Environmentally</li> </ul> | <p><b>Sectors</b></p> <p>The strategic objectives will be achieved by focusing on:</p> <ul style="list-style-type: none"> <li>agriculture and natural resources;</li> <li>education;</li> <li>energy;</li> <li>finance;</li> <li>transport,</li> </ul>   |

| Agency | Development Challenge/ Development Constraints   | Lessons from experience   | Strategic Focus   | Programme Sectors  |
|--------|--|---|---|--|
|        | and Procurement and combating corruption for development Management  | <ul style="list-style-type: none"> <li>○ consistent with local-level capacity, and</li> <li>○ continued policy advice is needed given the risks to long-term macroeconomic stability</li> <li>○ inclusive development</li> </ul>  | sustainable Regional Cooperation Relief Reconstruction and Reintegration  | <ul style="list-style-type: none"> <li>● information and communication technology;</li> <li>● water supply and other municipal infrastructure and services.</li> </ul> <p><b>Themes</b><br/>Operations in the seven priority sectors will be strengthened by mainstreaming six thematic priorities:</p> <ul style="list-style-type: none"> <li>● gender equity,</li> <li>● governance,</li> <li>● environmental sustainability,</li> <li>● regional cooperation/ integration,</li> <li>● private sector development,</li> <li>● engaging civil society and NGOs</li> </ul> |
| JICA   | <p><b><u>Political Issues</u></b></p> <ul style="list-style-type: none"> <li>● Political interference in procurement of goods services and works.</li> <li>● Strikes (bandhs) hinder implementation of project activities</li> <li>● Weak local governance system, mandate and operational structure at the district and the VDC levels - misuse of the ODA inputs.</li> </ul> <p><b><u>Government and Development Partners</u></b></p> <ul style="list-style-type: none"> <li>● Plans too ambitious to formulate project framework</li> </ul> | <p>Through JICAs inclusive and dynamic development approach and focus on key sectors for the last decade, JICA has found the following requirements to be vital for effective programming:</p> <ul style="list-style-type: none"> <li>● Capacity building</li> <li>● Community participation &amp; action</li> <li>● More authority to local community</li> </ul> | <p><b>Inclusive and Dynamic Development</b> through four key strategies:</p> <ol style="list-style-type: none"> <li><b>1. Integrated Assistance</b></li> <li><b>2. Seamless Assistance</b></li> <li><b>3. Promoting Development Partnerships</b></li> <li><b>4. Enhancing Research &amp; Knowledge Sharing</b></li> </ol> <p>JICA hope to achieve this through its Activity Guiding Principles:</p> <ol style="list-style-type: none"> <li><b>1. Achieving synergies of the merger</b></li> </ol> | <p><b>JICA Rolling Plan (2009)</b><br/>Four Priority Areas</p> <ol style="list-style-type: none"> <li><b>1. Poverty Alleviation in Rural Regions</b> <ul style="list-style-type: none"> <li>● Agriculture and Rural</li> <li>● Development</li> <li>● Basic Education</li> <li>● Health</li> </ul> </li> <li><b>2. Democratization and Peace building</b></li> </ol>   |

| Agency | Development Challenge/ Development Constraints  | Lessons from experience  | Strategic Focus   | Programme Sectors   |
|--------|---|--|---|---|
|        | <ul style="list-style-type: none"> <li>Different development concepts and methodologies introduced by the development partners, projects/ programs and/or GON without identifying the feasibility</li> <li>Discontinuity of reform measures and inconsistencies of use of technology.</li> </ul> <p><b>Infrastructure issues</b></p> <ul style="list-style-type: none"> <li>electric shortage and load shedding, water shortage, fuel shortage contributing to increase of the project costs, are the serious hindering factors.</li> </ul>   |  | <ol style="list-style-type: none"> <li>Tackling complex, difficult issues flexibly with the field-based approach</li> <li>Fostering expertise for providing professional solutions</li> <li>Efficient and transparent operations</li> </ol> | <ul style="list-style-type: none"> <li>Support for the <ul style="list-style-type: none"> <li>democratization</li> <li>process</li> <li>Strengthening</li> <li>Inclusive Governance</li> </ul> </li> <li><b>Establishment of Social and Economic Infrastructure</b> <ul style="list-style-type: none"> <li>Transportation</li> <li>Electric Power</li> <li>Water Supply</li> <li>Urban Environments</li> </ul> </li> <li><b>Other Support Areas</b> <ul style="list-style-type: none"> <li>Assistance for South</li> <li>West Asia</li> <li>Cool Earth Partnership</li> </ul> </li> </ul> |
| UN     | <ul style="list-style-type: none"> <li><b>Social exclusion</b> restricts the access of a large proportion of Nepal's population to the benefits of development.</li> <li>Inadequate involvement of <b>marginalised groups</b> in decision making, improving the democratic functioning of political parties and the greater decentralisation of power.</li> <li><b>Rule of law:</b> required to <u>reduce corruption, to give all citizens access to justice</u> and to transform the police into a service-orientated body that protects all law-abiding citizens and fully and equally</li> </ul> | <ul style="list-style-type: none"> <li>Social exclusion is caused by caste, ethnic, gender, religious and region-based discrimination as suffered by Nepal's women and girls, Dalits, Janajatis (ethnic groups), Madhesis (Terai communities), people living in remote areas, people with disabilities, religious minorities and others.</li> <li>Social mobilization programmes have helped the poor to form self-help groups, which can serve as building blocks for present and future interventions.</li> <li>Reviews undertaken conclude that social mobilization programmes should focus on</li> </ul> | <p>Priority Areas of UNDAF</p> <ol style="list-style-type: none"> <li>human rights, rule of law and governance,</li> <li>education and health,</li> <li>sustainable livelihoods</li> <li>cultural and natural wealth</li> </ol>             | <p>UNDP Current Programme priorities:</p> <ul style="list-style-type: none"> <li><b>Transitional Governance</b></li> <li><b>Inclusive Growth &amp; Sustainable Livelihoods</b></li> <li><b>Peace Building and Recovery</b></li> <li><b>Energy, Environment and Natural Disaster Management</b></li> <li><b>HIV/AIDS</b></li> </ul>  |

| Agency | Development Challenge/ Development Constraints  | Lessons from experience   | Strategic Focus  | Programme Sectors  |
|--------|---|---|--|--|
| WFP    | <p>respects the human rights of all citizens.</p> <ul style="list-style-type: none"> <li>Bringing about genuinely <b>democratic national and local level government.</b></li> </ul>   | <p>remote areas, and must be <u>complemented by livelihood components</u> which meet the needs of the poorest of the poor.</p> <ul style="list-style-type: none"> <li>Linkages between livelihoods and the environment need strengthening, and environmental issues need to be further mainstreamed in development planning.</li> <li>Special attention should be paid to designing gender and social-inclusion sensitive monitoring and evaluation frameworks, and capacity development strategies.</li> <li>Effective and strong state and civil society institutions are needed to hold central and local state agencies accountable.</li> </ul> |  | <ul style="list-style-type: none"> <li>The most remote, poor, and/or conflict-affected areas of the <b>mid- and far-western development regions</b> and the Terai - targeted towards the disadvantaged and vulnerable groups.</li> </ul>   |
|        | <ul style="list-style-type: none"> <li>3.5 million people in Nepal are considered to be moderately to severely food insecure and 41% of the population is estimated to be undernourished.</li> <li>Vulnerability to food insecurity and under-nutrition is the result of chronic, transitory and seasonal factors. Chronic factors include weak agricultural growth coupled with strong population growth, high rates of chronic poverty, geographical isolation of much of the poorest population, and chronic utilisation problems such as inadequate access to health services, water and sanitation.</li> <li>Malnutrition threatens millions of children with debilitating and irreversible mental and physical impairments: Half of Nepal's children under 5 years are stunted or chronically undernourished. For the same population, acute malnutrition rates are at</li> </ul> | <ul style="list-style-type: none"> <li>Vulnerability to food insecurity and under-nutrition is the result of chronic, transitory and seasonal factors.</li> <li>Chronic factors include weak agricultural growth coupled with strong population growth, high rates of chronic poverty, geographical isolation of much of the poorest population, and chronic utilization problems such as inadequate access to health services, water and sanitation.</li> </ul>  | <ul style="list-style-type: none"> <li>Targets the most food insecure and hard to reach districts of the Mid and Far Western Hills and Mountains.</li> <li>Support the country's protracted peace and recovery process by reducing hunger and under-nutrition,</li> <li>Fostering increased resilience among vulnerable communities, and</li> <li>providing humanitarian response to and preparing for increased environmental disasters.</li> </ul> | <p>In 2011:</p> <ul style="list-style-type: none"> <li>preventing hunger and meeting food and nutrition needs,</li> <li>empowering local communities to build assets that improve long-term food security, and</li> <li>supporting government and partners to develop and implement effective food security and nutrition strategies.</li> </ul> |

| Agency        | Development Challenge/ Development Constraints  | Lessons from experience  | Strategic Focus  | Programme Sectors   |
|---------------|---|--|--|---|
| <b>DANIDA</b> | 13 %.<br>No specific constraints have been documented for Nepal                               | No specific lessons learned have been documented for Nepal   | Strategy for DANIDA's 25 Priority Countries (June 2012) <ul style="list-style-type: none"> <li>• to facilitate and promote the development of a democratic political environment,</li> <li>• respect for human rights and rule of law, and</li> <li>• a peaceful resolution of the armed conflict; and</li> <li>• to continue, in spite of political instability, to contribute to poverty reduction in a peace and conflict-sensitive manner through economic growth and improvements of service delivery, targeting the poorest segments of the population.</li> </ul> | In line with Denmark's new development strategy, Danish development cooperation targets four main priority areas: <ul style="list-style-type: none"> <li>i) Human rights and democracy</li> <li>ii) Green growth</li> <li>iii) Social progress</li> <li>iv) Stability and protection</li> </ul> |
| <b>NORAD</b>  | Strategy provided at global level – no specific development constraints documented for Nepal. | Strategy provided at global level – no specific lesson's learned were documented at country level. | Strategy Areas <ul style="list-style-type: none"> <li>• Bringing the peace process to a logical conclusion,</li> <li>• Drafting a new federal democratic republican constitution within two years as stipulated in the Comprehensive Peace Accord (CPA), and</li> <li>• Reducing poverty by bringing about socio-economic transformation through sustainable economic growth and social equity.</li> </ul>   | Programmes in <ul style="list-style-type: none"> <li>i) Education</li> <li>ii) Energy</li> <li>iii) Peace Building and</li> <li>iv) Human Rights</li> </ul>   |

| Agency | Development Challenge/ Development Constraints  | Lessons from experience  | Strategic Focus  | Programme Sectors  |
|--------|---|--|--|--|
| SDC    | <p>Facing huge challenge to address political, social and economic inclusion:</p> <ul style="list-style-type: none"> <li>• Rural poor</li> <li>• Disadvantaged groups</li> <li>• Political insecurities</li> <li>• Weak governance</li> </ul>   | <ul style="list-style-type: none"> <li>• Conflict/Fragile contexts: stay engaged and protect development space</li> <li>• Joint strategy between government and development partners is most effective aid modality</li> <li>• Need to be pro-active in donor harmonisation to void duplicating efforts – establishment and dissemination of Basic Operating Guidelines</li> <li>• Need to be impartial and engaged in peace process</li> <li>• Conflict sensitivity should be incorporated into all activities – inclusion and empowerment of DAGs</li> <li>• Essential to link project and diplomatic level activities for harmonisation</li> </ul>  | <p>Two inter-related intervention priorities:</p> <ul style="list-style-type: none"> <li>• Consolidation of the Peace Process and State Building</li> <li>• Contribution to <u>Inclusive, Connected Local Development</u></li> </ul>   | <ul style="list-style-type: none"> <li>• Good Governance</li> <li>• Local Governance &amp; Community Development</li> <li>• Rights, Democracy and Inclusion</li> <li>• Strengthening the Capacity of National Human Rights Commission of Nepal (NHRC)</li> <li>• infrastructure development; sustainable natural resource management; health services, and skill development.</li> </ul> |
| CIDA   | <ul style="list-style-type: none"> <li>• Poor market access and limited transportation and energy-distribution systems contribute to low productivity, notably in agriculture.</li> <li>• Food insecurity is rising, largely driven by inflation in food prices and uneven rainfall. In the longer term, glacial melting brought on by climate change threatens food and water supplies.</li> </ul> | <ul style="list-style-type: none"> <li>• Civil aviation sector: sustainability of efforts requires greater government capacity and resources.</li> <li>• Energy sector: technical assistance has built the capacity of individuals, however building the capacity of institutions presented greater challenges.</li> <li>• Integrated rural development: <u>building the socio-economic infrastructure and confidence of farmers in the most remote districts.</u></li> <li>• Key learning from past projects: communities and community groups can bring about <b>social transformation, economic development, and effective and equitable governance</b> if they are: <ul style="list-style-type: none"> <li>○ organized for collective action towards a shared vision and common vision,</li> </ul> </li> </ul> | <p>CIDA's Sustainable Economic Growth (SEG): sustainable long-term economic growth to increase revenue generation, create employment, and poverty reduction. There are three paths:</p> <ol style="list-style-type: none"> <li>1. <b>Building economic foundations:</b> Support willing governments to build the legislative and regulatory business, industrial and financial framework for sustainable economic growth;</li> <li>2. <b>Growing businesses:</b> Enhance financial viability, productivity and competitiveness of micro, small and medium-sized private sector enterprises to increase employment</li> </ol> | <p>CIDA's programming in Nepal is closely aligned with the country's development strategy which aims to promote:</p> <ul style="list-style-type: none"> <li>• sustainable peace through rapid economic growth and improved social inclusion,</li> <li>• decentralization</li> <li>• community-led development</li> </ul> <p>All programmes will cease by end 2014.</p>                   |

| Agency | Development Challenge/ Development Constraints   | Lessons from experience  | Strategic Focus   | Programme Sectors   |
|--------|--|--|---|---|
| EU     |  | <ul style="list-style-type: none"> <li>○ empowered for building self-confidence and self-esteem and</li> <li>○ Mobilized to contribute to the strengthening of human and social capital.</li> </ul>                              | <p>opportunities;</p> <p>3. <b>Investing in people:</b> Improve the employment potential to increase access to, and benefits from, opportunities in the informal and formal business sectors.</p>   |   |
|        | <ul style="list-style-type: none"> <li>● bringing real and tangible changes to the lives of 28 m citizens of Nepal</li> <li>● Expectation of society – inclusive just society, ending impunity, respect for human rights and solid democracy</li> <li>● Fragile state – food crisis, global financial crisis, economic slowdown, climate change</li> </ul>   | <ul style="list-style-type: none"> <li>● Need to stay proactively engaged in development process and peace building</li> <li>● Strengthen stakeholders implementation capacity</li> <li>● Promote political consensus</li> </ul> | <p>Three pronged strategy:</p> <ol style="list-style-type: none"> <li>1. Stability &amp; peace building</li> <li>2. Education and trade facilitation</li> <li>3. Economic capacity building</li> </ol>  | <p>Cross-cutting themes:</p> <ul style="list-style-type: none"> <li>● Environment</li> <li>● Gender</li> <li>● Conflict prevention</li> <li>● Human rights</li> </ul>   |
| USAID  | <ul style="list-style-type: none"> <li>● Political and social divisions</li> <li>● High and often-unrealistic expectations on the part of the public</li> <li>● Fragile and politicized state institutions and civil society</li> <li>● Unrest and physical insecurity</li> <li>● Production resources, especially land and biodiversity, have decreased</li> <li>● Climate change risks have increased the vulnerability of the poor to natural disasters.</li> <li>● Low and declining investment in agricultural research and extension, poor access to services and limited basic infrastructure have inhibited productivity</li> <li>● Food prices continue to rise.</li> <li>● Lack of livelihood opportunities and market volatilities</li> </ul> | <ul style="list-style-type: none"> <li>● No lessons documented for Nepal</li> </ul>  | <p>Five Assistance Priority Goals:</p> <ul style="list-style-type: none"> <li>● Goal 1: Successful Transition Completed: Effective, Responsive and Democratic Constitutional Government</li> <li>● Goal 2: Enabling Environment for Inclusive, Private-Sector Led Economic Growth Established</li> <li>● Goal 3: Health and Well-Being</li> <li>● Goal 4: Government More Effectively Secures National Territory: Public Safety, Law Enforcements, Human Rights and Subordination to Civilian Authority</li> <li>● Goal 5: National capacity to prevent, mitigate and respond to disasters</li> </ul> | <p>Five major themes cut across Nepal's development challenges - themes that must be addressed by an effective strategic approach to development assistance.</p> <p>Those themes are:</p> <ul style="list-style-type: none"> <li>● Youth</li> <li>● Social Inclusion</li> <li>● Regional balance in development</li> <li>● Environment</li> <li>● Sustainability</li> </ul> |

## Report 9 - Technical note

### 9.1 Introduction

DFID Nepal set up a study using existing data to describe the geographic and social distribution of chronic poverty and vulnerability in the Mid- and Far-West (M&FW) regions, to identify any trends in chronic poverty and vulnerability over time and to identify the critical zone and district.

The study drew on available national studies and databases i.e. a set of uncoordinated studies. This note aims to draw on this experience, to suggest ways in which the basis for assessing chronic poverty and vulnerability could be improved through national systems and improved donor coordinated support. This is a preliminary discussion note.

### 9.2 Existing national surveys

Since 2000 the main national surveys comprise (a) two census (b) two national living standard and (c) three Demographic Health Surveys (Table 1). Three national level surveys were conducted in 2010/11 (NLSS 2010/11, about 6000 HH, DHS 2011, 10826 HH and the census 2011) so there is considerable duplication of information across surveys – e.g. sanitation, drinking water and house construction.

### 9.3 Absolute Poverty Lines

The Nepal Living Standard Surveys (NLSS) are the source of data officially used for poverty estimation in Nepal. The poverty estimation follows the Cost of Basic Needs approach (CBN) in which the poverty line is defined as the expenditure value in Nepal RRs required by an individual to fulfil his/her basic needs in terms of both food and non-food items. The poverty line in the 2003/4 (NLSS II) was an update of prices for the same basic needs basket estimated in NLSS I (1995/6) but the poverty line for 2010/11 is based on a new basic needs basket of the poor with the aim of reflecting on changes in well being over time. Using the new method about 25% of households in NLSS III are below the overall poverty line, using the old method the figure would be about 12% and using the new UNDP multidimensional poverty index, 42% would be below the poverty line. So there is considerable variation in the percentage who are poor depending on which cut-off is used. In NLSS II 5 regional poverty lines were used whereas in NLSS III 12 different lines/domains thereby adding to complexity in interpreting poverty trends over time.

The overall poverty line can be subdivided into two, the food and non-food poverty lines.

### 9.4 Depth and Inequality of poverty derived from the poverty lines

The poverty lines only distinguish between poor and non-poor households and not the extent of poverty. The shortfall in consumption of each household below the poverty line (poverty gap) is also usually computed and the depth of poverty (the Poverty Gap Index, PGI) and the degree of inequality (the Squared Poverty Gap Index, SPGI) determined. Three PGIs reflecting overall PGI, food PGI and non-food PGI can be computed as well as the three corresponding SPGIs. Only the overall PGI and SPGI are calculated in the NLSS database but the food and non-food PGI and SPGI were found to be important, especially the non-food indices.

### **9.5 Multidimensional chronic poverty and vulnerability indicators**

The analyses that have been undertaken suggest that there are about 12 key indicators (Total number of assets, Dependency ratio, Sanitation, Caste, Remoteness, House construction, Adult illiteracy, Gender of household head, Remittances, Urban/rural locality, Migration and Region) that associate with being below the poverty lines. Although agencies will continue to collect data specific to their programmes inclusion of these indicators would be important for monitoring national or regional poverty trends from a multidimensional perspective.

Indicators which have been shown to associate with absolute poverty and not included in NLSS surveys include:-

1. Maternal BMI
2. Maternal haemoglobin
3. Floor construction
4. Gender related development index
5. Natural disasters landslide, drought etc
6. Malaria, TB and HIV/AIDS incidence
7. Food insecurity
8. Food coping strategies

Other potential indicators include road density, ratio of girls to boys in primary education, student-teacher ratio in secondary education, primary school net enrolment ratio, employment of population of working age ratio, yield of fruits, cash crops, fisheries, cereal crops and pulses

| Source | Date         | Availability   | Comment   |
|--------|--------------|--|---|
| Census | 2001         | Download summary data for each VDC in each district  | Would require extensive collation of summary data from all 3900+ VDCs |
|        | 2011         | Data still being entered   |   |
| NLSS   | II, 2004/5   | Sample of 4000 HHs – data organised in large number of separate files generating a single database very time consuming       | Number of households surveyed in some districts very small            |
|        | III, 2010/11 | Sample of about 6000 HHs – data organised in large number of separate files generating a single database very time consuming | Number of households surveyed in some districts very small            |
| DHS    | 2001         | 7591 women aged 15-49 years  | Limited to specific age range groups                                  |
|        | 2006         | 10793 women aged 15-49 years of age and 4397 men aged 15-59 years of age   | Limited to specific age range groups                                  |
|        | 2011         | Preliminary report recently published – data not available   | Limited to specific age range groups                                  |

## **9.6 Sampling**

The size of the sample has to be sufficient to be able to test the hypotheses posed. For example NLSS III sampled about 6000 households on a proportional to population size basis – so some more remote areas, e.g. mountains, were less well sampled. In some districts only 12 households were surveyed so it was impossible to undertake district level analyses. To study a district much larger samples are required – so for 24 districts in M&FW disaggregated by 7 social groups and by gender of household head require a minimum of 700 in each district.

## **9.7 Study Design**

It is likely that in future a number of surveys will be conducted at about the same time (e.g. NLSS, DHS surveys and Census) as well as by other international agencies in specific localities (e.g. UNICEF in the M&FW). Taking a larger sample with a more flexible design would cut down on duplication.

A more powerful study design is a mixed longitudinal/ cross-sectional one in which the same individuals/households are interviewed at each survey round (this reduces sampling error when comparing results of each round of survey). In addition a new cohort of individual/households is introduced at each round which provides a control for temporal changes. The periodicity of surveys also needs serious review since the change between NLSS II and III has been quite rapid; one possibility is for large surveys at 5 year intervals combined with annual panel and cross-sectional surveys.

An advantage of a longitudinal (panel) component to a study design is that it would be possible to differentiate between different types of poor households over time i.e. those who are chronically poor, churning poor or transiently poor as well as to ascertain their characteristics. The other benefit of a panel study is that the sample sizes required to show a significant change are much smaller compared with a cross-sectional design and so costs of conducting panel surveys are considerably lower than cross-sectional surveys.

## **9.8 Statistical Analyses**

Most reports present study findings in a very rudimentary way, for example the percentage of each variable by region or ecosystem – as though statistics is ‘a collection of numerical facts’ rather than ‘a method of analysing data’ which deals with the more complex inter-relationships between variables. So there is considerable under-utilisation and lack of rigorous statistical analyses of many surveys (including NLSS) which could be used to provide valuable information to GON and donor agencies in planning interventions. With regards to NLSS the rationale for the survey seems to be one of providing information on the level of poverty in the country rather than ‘what are the main drivers of poverty in Nepal and are they homogeneous across the country or geographically (and socially) distinct?’

## **9.9 Organisation of Databases**

The data for each of the NLSS surveys are stored in up to 78 separate files so it takes considerable time and effort to link files together to generate a single database. Also without the survey questionnaire and with help from CBS personnel it is very difficult to comprehend the data. Some variables have no coding e.g. land type. To examine trends over time a database combining all three NLSS cross-sectional surveys is needed.

### **9.10 Data Entry**

Data entry and checking is slow and the most recent census data have not all been digitised. Switching to smart phone technology or similar would allow information to be digitised directly in the field with less coding errors and shorter turnaround between survey and generation of reports. These kinds of investments in new technology would make increasing sense if the survey regimen was streamlined.

### **9.11 Data Archive**

There is a need to set up and maintain a national data archive in which raw data are saved in standard formats with complete definitions for each variable (variable names and labels). Comparisons between survey reports are often made very difficult/impossible as, for example, social groups are classified in different ways by separate researchers.

### **9.12 Capacity Building**

It would appear that the more detailed analyses e.g. trends in poverty, are undertaken by the World Bank and there is little or no capacity building within CBS.

### **9.13 Initial conclusions/ideas**

1. Greater coordination between GON and donors is needed to prevent duplication of information collected over the same time period and would be considerably less expensive.
2. One possibility is to design a survey which combined DHS and NLSS into a single larger survey and which provides reliable information down to district level. The periodicity of surveys also requires a rethink and they should be carried out at least every 5 years.
3. Give NPC/CBS a greater role in coordinating survey activities
4. There is a need to study trends over time – combining panel and cross-sectional in the same study design (mixed design) seems an obvious solution.
5. Combine poverty lines, poverty gap indices and chronic poverty and vulnerability indicators in a single study but include a wider selection of indicators so as to reflect the full multidimensionality.
6. The sample size should be sufficient to allow for analyses of inter-household variation between social groups at a district level.
7. Switch to smart phone technology for data collection.
8. Create a well-managed and resourced data archive under the aegis of CBS and promote public availability.
9. Increase the capacity of CBS to undertake rigorous statistical analyses as well as the ability to disseminate results in simple as well as technical reports.