Poverty and inequality in Nepal: an analysis of deprivation index 2003-04

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POVERTY AND INEQUALITY IN NEPAL: AN ANALYSIS OF DEPRIVATION INDEX 2003-04

A thesis submitted in partial fulfillment of the requirements for the award of the degree

Master by Research

from

University of Wollongong 

School of Economics
Faculty of Commerce
New South Wales, Australia

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August 2009

Certification

I, Chirangivi Bista, declare that this thesis, submitted in partial fulfilment of the requirements for the award of Master by Research, in the School of Economics of the Faculty of Commerce, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Chirangivi Bista
27 August 2009

Abbreviation

ADB	-	Asian Development Bank
ADO	-	Asian Development Outlook
BNI	-	Basic Need Income
BOP	-	Balance of Payment
CBN	-	Cost of Basic Need
CBS	-	Central Bureau of Statistics
CPI	-	Consumer Price Index
CPI	-	Corruption Perception Index
FAO	-	Food and Agriculture Organization
FDI	-	Foreign Direct Investment
FEI	-	Food Energy-Intake
FWDI	-	Factor Weighted Deprivation Index
GDP	-	Gross Domestic Product
GNP	-	Gross National Product
HBS	-	Household Budget Survey
HDI	-	Human Development Index
HHs	-	Households
HPI	-	Human Poverty Index
IMF	-	International Monetary Fund
kcl	-	Calorie
LDC	-	Least Developed Country
MCPW	-	Micro Credit Project for Women
MDGs	-	Millennium Development Goals
MPHBS	-	Multipurpose Household Budget Survey
MIQ	-	Minimum Income Question
MTEF	-	Medium Term Expenditure Framework
MNI	-	Majority Necessity Index
NLSS	-	Nepal Living Standard Survey
NPC	-	National Planning Commission
NRB	-	Nepal Rastra Bank (Central Bank)
ODA	-	Official Development Assistance
PDI	-	Proportional Development Index
PPP	-	Purchasing Power Parity
PRSP	-	Poverty Reduction Strategy Paper
RMDC	-	Rural Micro-Credit Development Centre
SAM	-	Social Accounting Matrix
SOE	-	State Owned Enterprises
TI	-	Transparency International
UOW	-	University of Wollongong
WDI	-	World Development Indicators

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Acknowledgement

I would like to extend my sincere gratitude to my supervisors Dr. Kankesu Jayanthakumaran and Dr. Martin O'Brien for their commendable guidance through out my research study. Their creative comments and invaluable suggestions always inspire me to learn more and strive for high quality work. I would also like to express my sincere thanks to Dr Abbas Valadkhani for giving valuable inputs to the methodology of my research.

I wish to extend my sincere thanks to my wife Jaysahree Khadka for her love, care and support during the final semester of this study. This work has been possible mainly because of her patience and hard work. I am very grateful to my mother and brother for their blessings and financial support for my study and all my family members for encouraging me to pursue higher education.

Special thanks are due to Central Bureau of Statistics, Nepal for providing me with the raw living standard survey data for the study and to my brother Puranjan Bista who from his very busy schedule facilitate everything for me.

Sincere thanks are also due to my colleagues at the Faculty of Commerce, Adeem Khan (Pakistan) and Khalid Alkhamis (Saudi Arabia). I have greatly benefitted from the regular interaction within them throughout this period. I am also grateful to Clayton William for providing professional editorial support for my thesis.

I also wish to thank my cousin Bimbika Sijapati for her professional support in reviewing my thesis within a limited time frame. Finally, I highly value the moral and intellectual support entrusted by Binod Sijapati, Sugum Bajaracharaya, Mahesh Parajuli, Bimal Shrestha and Santosh Bista during the course of my study.

Abstract

Poverty in Nepal is widespread, complex and multi-dimensional phenomenon. Both the incidence of poverty (31%) and income inequality (0.37%) is high. This is the result of rapid urbanization process coupled with extended internal conflict and political instability. And, this has serious consequences especially in urban areas where the gaps between 'haves' and 'haves not' is highly elevated. On the contrary, rural inequality is declining gradually. The key macro economic indicators for the country show generally poor economic conditions. A huge amount of resources is being injected in the form of nation wide poverty alleviation programmes. However, the achievement level has been very limited.

The main objective of the thesis is to study poverty and income inequality in Nepal during post reform period. This is undertaken by exploring the factors explaining the deprivation index from a recent household survey. For this purpose, the study employs factor analysis technique to formulate the deprivation index and run regression to analyse key determinants of deprivation.

The result shows that the age and gender of households head, place of residence, educational levels basically primary and secondary schooling, occupational status mainly in the service sectors, status of financial burden in a household and access to basic services are important indicators of deprivation and poverty in the context of Nepal.

Poverty levels are highly concentrated in rural areas. A rural resident is more likely to be vulnerable to deprivation than her/his urban counterpart. Deprivation is negatively associated with livestock and positively associated with the degree of indebtedness. The educational attainment of the household head is the most important factor determining the likelihood of a person being in poverty or suffering deprivation. Similarly, households which spends more time to access basic facilities i.e. schools, hospital, markets and road networks etc. are mostly deprived. Empirical evidences suggest that these key findings are also conventional to a developing country. Overall the study finds that the poverty level is still comparatively higher with its absolute and chronic in nature. On the whole deprivation in Nepal in general is high and profound (48%).

Chapter- I

Introduction

1.1 Overview

Economic growth is a steady process by which the productive capacity of an economy is increased over time to bring about rising levels of national output and income. More comprehensively, it is the factors governing the expansion of income, aggregate, and per capita income in particular. But this is only a component of the whole process of development, hence income, or per capita income, is only a partial indicator of development. A broad indicator of development takes into account the degrees of security, literacy, liberty, political participation, economic equity, national morality, international awareness, environmental awareness, and universal mission ensuring quality of life. At the latter stage, the level of deprivation of a country also signifies its level of growth.

Economic growth and poverty are interrelated (ADB, 2000). Rapid economic growth rates disperse automatically across society (ADB, 2000). This economic growth rate is a significant determinant by which poverty declines over time, but its effectiveness as a vehicle for reducing poverty differs according to time and space. Moreover, poverty reduction is the outcome of the variations in mean income and income inequality.

Poverty has been described as “a matter of deprivation” (Sen, 1981, p.22). “Deprivation is predicted on social norms and is very much a function of time and space. Poverty in developing countries can indicate absolute deprivation, infringing on the basic sustenance of life; whereas poverty in developed countries can indicate relative deprivation, a lack of ability to afford a standard of living enjoyed by a reference group with higher incomes” (Quibria, 1991, p.93).

Economic theory is related to the functional distribution of income rather than with the household or size distribution. Income distribution is so deeply entrenched in the structure of

an economy and society that it can only be affected by a major and violent upheaval (Adelman and Robinson, 1978). In any event the human costs are likely to be incredibly large, so such an approach should be regarded as a solution of last resort. It is therefore most important to explore how much can be done to reduce inequality, beginning with an existing social, political ,and economic framework, and working gradually within an acceptable time period (Adelman and Robinson, 1978).

Poverty is defined and interpreted in several ways. Since academic debates on the subject are usually occupied with controversies about how to distinguish the 'poor' from the 'non-poor,' and ensure diverse levels and causes of poverty among the former (Shanmugaratnam, 2003), there is a pertinent need to define poverty and its magnitude. However, there are conceptual issues involved in such a definition because despite significant progress in alleviating poverty in recent years, the magnitude of the problem is overwhelming. Any effort to measure poverty often leads to an effort to identify the poor (Quibria, 1991).There has been an upsurge of interest in defining and measurement issues and accordingly, a vast array of literature has emerged. At the end of the nineteenth century Booth (1901) and Rowntree (1918) provided perhaps the first systematic attempt to measure the extent of poverty and hence poverty has been pivotal to the study of human welfare.

While defining poverty into their logical terminology - absolute and relative, absolute poverty is conceived as an inability to attain a minimal standard of living (Bourguignon, 2004). This perception of a minimum standard varies. Relative poverty, on the other hand is an inability to attain a given existing standard of living. Relative poverty is more a measure of income distribution and inequality than a measure of absolute deprivation, and is defined in different ways. It may be possible to eradicate absolute poverty but it is impossible to eradicate relative poverty (Quibria, 1991). And, the fact that millions of people in the world today live in awful conditions of material deprivation while others enjoy unprecedented affluence suggests that concepts such as poverty and inequality remain highly relevant (Kakwani and Son, 2006).

Because poverty reduction is pivotal for development it has been generally assumed that it can be primarily achieved by economic growth and/or the redistribution of income (Kakwani

and Son, 2004). Recently and increasingly however, the extent to which growth alone can address poverty reduction is being questioned (Bourguignon, 2004). To ensure a brisk reduction in poverty, policies of redistribution of income and assets, providing equal access to opportunities for work and employment, and social services and benefits, need to be equally accentuated. A policy agenda that addresses both distributional concerns and poverty reduction could lead to the enhancement of both economic growth and equity because the relationship between growth and poverty/inequality is complex (Kakwani and Son, 2006).

Nepal suffers from poor development due to slow economic growth, huge unemployment, agriculture oriented, undeveloped technology with a mass unskilled labour, low capital formation, under mobilised natural resources, and substantially low GDP. The pattern of income distribution is also highly skewed and asymmetric (ADB, 2000).

All these evidences suggest that much remains to be done for Nepal to achieve an accelerated growth rate with equity. First, economic growth over the past decade has resulted in growing income inequality which may act as a constraint to higher growth. Second, while various socio-economic impediments may not have constrained growth in the past, their persistence may become binding in the future.

Recently, there is a growing consensus in the measurement of poverty. Although the monetary approach has traditionally dominated the sector, the concept and methodologies of 'deprivation' is an emerging tool. A deprivation measure has broadened the scope of the concept of poverty in terms of understanding the level of understanding and assessing the individuals' and households' living standard. In a way, it has now already been an established fact that the deprivation index is a viable measure to study poverty and the general standard of living.

1.2 Statement of the problem

In spite of decades of effort at development, Nepal remains one of the poorest countries in the world. According to the World Bank, "By any reasonable international standard everyone

in Nepal is poor, except for a few professionals and businessmen, and perhaps some large farmers. The average income in the second deciles (i.e. the second richest 10% of households) for instance is only about Rs. 500 per capita per month (US$20 per month) – in most countries these families would be among the very poorest" (World Bank, 1979, p.8).

It is quite ironic that the country is undergoing an extremely inadequate performance despite a relatively promising economic environment. This has several implications. First is the depleting living condition of the majority of the population. Second, deteriorating natural resource imbalances and the adverse effects of the demographic dynamics compound these complexities. And the third, a prolonged economic and social stagnation, are having their effect on the future of this society as a nation-state (NESAC, 2000).

When the development record does not transform itself into a process of cumulative achievement, any discreet success often evaporates or becomes irrelevant from the stand point of the collective and sustained public welfare. Thus, poverty and income inequality are development jargons in the country and have become issues of clear, critical, and analytical scrutiny.

The incidences of poverty in Nepal are high, and theoretically, a high level of poverty signifies a high level of deprivation. In this context we can assume that the level of deprivation is also higher. It is difficult to assess the prevailing level of deprivation in the country because a comprehensive study on deprivation has not been done.

1.3 Objective

The general objective of this research is to undertake a statistical measurement of poverty/inequality and analysis of the distribution of income in Nepal.

The specific objectives are:

i. To study poverty and income inequality in Nepal during the post-reform period[1];

ii. To study the factors explaining deprivation by the second national living standard survey[2];

iii. To recommend policy measures as appropriate.

1.4 Significance of the study

Poverty and income inequality are synonymous terminology among developing nations. Various researches have shown a divergence between these two components. Inequality means generating a social/economic divide through various dimensions. One pertinent example is the dual living standards (rural and urban, rich and poor) that portrays a serious state of socio-economic welfare amongst the general population.

The literature available on income-poverty in Nepal does not seem to have dealt with its causes and consequences. Most has tried to quantify the incidence of poverty by focusing on the characteristics of poor rather than on poverty or institutions which links up the poor and the non-poor. The estimation of poverty rates are entirely based on income/consumption data by drawing a subsistence line. Besides, the absence of comprehensive data sets on recent poverty profiles is a major drawback in the sector. So far, no other studies have derived deprivation index and run regression analysis to study poverty using recent households' survey data. So, this study presents entirely a new technique of deprivation analysis to study poverty for the country.

Similarly, a growing interest in inequality has generated an outpouring of scholarly research but surprisingly, most of these studies and discussions rely on a narrow set of indicators to measure inequality. Most of the time a single summary of the measure of inequality is considered, i.e. the Gini coefficient.

[1] The post-reform period represents the year starting 1990s and beyond.
[2] Nepal Living Standard Survey phase two (NLSS-II) conducted during the year 2003-04 is the basis of data for deprivation analysis.

Due to a multitude of problems both in terms of quantifying and analysing it, assessing poverty by reviewing the level of deprivation can be a viable technique to further enhance the scope and importance of the subject matter, and understand its consequences and dynamics.

1.5 Structure of the thesis

This thesis is divided into six chapters. Chapter 1 is the introduction, Chapter 2 is a comprehensive literature review on poverty with a key focus on deprivation. Chapter 3 gives a general overview of the country, including the socio-economic and political conditions, with a special emphasis on poverty and inequality. Chapter 4 gives a specific contribution to the thesis in relation to the measurement of poverty and inequality, their causes and consequences, and key determinants with past and present policies adopted by the country as a whole to alleviate rising problems with poverty. Chapter 5 is an analysis on poverty via a unique measure of poverty in the context of the country. An index of deprivation based on a recent survey was constructed and then analysed in a multi-variate framework. Chapter 6 recapitulates the key issues and findings of the thesis and provides recommendations for addressing poverty and inequality in the country.

Chapter-II

Theoretical and Empirical Studies on Poverty and Inequality

This section reviews the concept of poverty and inequality from a theoretical and empirical perspective. It provides a synthesis of relevant literature on the theory and methodology behind poverty measurements with a view to identify the key determinants /correlates of poverty in developing countries. From these different theoretical and methodological approaches the focus here is on the deprivation index because of its growing importance and application to studying poverty.

This chapter is divided into four sections. Section 2.1 deals with the theoretical concept of poverty, section 2.2 reviews the empirical literatures that explain the causes of poverty, methodology, and results. Section 2.3 highlights the importance and methodological concept of the deprivation index, while section 2.4 gives the concluding remarks on the theoretical and empirical aspects of the deprivation/poverty measure.

2.1 Theory of Measurement of Poverty and Inequality

Theoretically there is no concise measurement of poverty, probably because over the years the concept of poverty has been defined varyingly. The definition has evolved from basic needs fulfillment to living standards and approaches to welfare, to measuring human capabilities, and more recently, into the realm of relative deprivation.

There are two main approaches in the literature to measuring poverty, uni-dimensional and multi-dimensional (Fusco, 2003). The uni-dimensional approach refers only to one variable such as income or consumption whereas the multi-dimensional approach extends the number of dimensions along which poverty is measured. However, the complex reality of poverty

makes it difficult to capture via a single uni- or multi-dimensional definition or measure. Similarly, there are two distinct problems when measuring poverty (Sen, 1976). The first problem is to identify the poor and the second is to formulate a (poverty) index. The former requires the construction of a monetary poverty line whereas the latter demands an aggregate measure that captures all available information on the poor. The second problem arises in defining poverty as an absolute or relative concept (Desai and Shah, 1988).

The discussion of poverty measure has therefore, commenced with the simple living standard measure, poverty line determination, and array of measures involved in absolute and relative poverty measures. The measure of poverty enables us to show its decomposability by population, and capture the issue of social capital and how the poor themselves measure poverty. In this process the poverty line is the starting point for analysis because it serves as an objective standard by which the so-called "poor" are distinguished from the "non-poor". In many instances the poverty line is specified as the cost of satisfying the daily basic per capita food and non-food items. In the long history of poverty measurement, several issues have been raised and have been the subject of long standing debates.

Poverty lines help to construct poverty profiles (Ravallion and Lokshin, 2006). The poverty line is set through various methods and such choices should have a practical significance. So there are conceptual issues in defining poverty, i.e. there are several definitions of a poverty line. This demonstrates that poverty is not a usual condition which is objectively identifiable (Van Pragg, 1980). Methods suggested for constructing a poverty line range from the Calorie-Expenditure Approach to the Balanced Diet Approach, the Engel Approach to the Paul Regression model and Consensual (Subjective/Exclusion) approaches. All these methods for setting a distinct poverty threshold are equally arbitrary.

Once the poverty line is determined then a summary measure is needed to express the extent of poverty. Literatures on the measurement of poverty are comprehensive. A good survey can be found in Foster et. al (1984), Atkinson (1987) and Chakravarty (1990). It is widely recognised that an efficient measure of poverty must satisfy the following two axioms (Sen, 1976. p.219).

Axiom 1 Monotonicity

Other things remaining the same, a reduction in income of any poor household will increase the poverty measure. Assume an income distribution denoted by $\dot{x} = (x_1, x_2, x_3, ...x_q)$. For any decrease of income of the ith -person by δ, the new income distribution vector will become $\dot{x}^* = (x_1, x_2, x_3, x_{i-d} .....x_q)$. Axiom 1 requires that $\dot{p}(x) < \dot{p}(x^*)$.

Axiom 2 Transfer

Other things remaining the same, a transfer of income between two poor households, from a poorer to a richer one, will increase the poverty measure. In other words, any increase in inequality among the poor due to one or a series of regressive transfers, must be reflected in a higher level of poverty.

Poverty can be measured in different ways, the most common being:

The Head- Count Ratio

This is the most commonly used (income) measure of poverty. This measure is highly sensitive to the concept of the "minimum consumption bundle" which provides balanced nutrition to the age, sex, and occupational composition of the population. It is also insensitive to changes in the absolute level of deprivation and changes in income distribution among the poor.

If q is the number of poor in a population of size n, then the headcount ratio is given by:

$$H = \frac{q}{n}$$

While it is useful as a summary measure of poverty, it reveals nothing about the depth or severity of poverty.

The Income Gap Ratio

A class of poverty measures which can address the issue "how poor are the poor?" is the poverty–gap measure. These measures provide a good indication of the depth of poverty. The poverty gap of an individual *I* is given by $g_i = \sum (z\text{-}x_i)$ and the aggregate poverty gap is given as under:

$$I = \frac{\sum_{i=1}^{n} g_i}{qz} = \frac{\sum_{i=1}^{n} (z - x_i)}{qz} = \frac{z - \mu^*}{z}$$

The aggregate poverty gap is often normalised by the number of poor to obtain the average poverty gap (g/q).

H and **I** are, in a sense, complementary. **H** captures the number of people in poverty but not its depth, while **I** measures the depth of poverty but is insensitive to the number involved. Neither measure is sensitive to the redistribution of income within poor units. That is, if a dollar of income is taken way from the poorest unit and is given to a richer unit, but is still below the poverty line, then **I** will remain unchanged. In other words, **I** does not reflect the severity of poverty.

The Sen Measure of Poverty

Sen (1976) has noted the desirable properties of a poverty measure, which include the sensitivity of the measure to the number of poor and to the depth of poverty, as well as to the distribution of income among the poor. Sen has proposed a distributionally sensitive index which combines the properties of H and G in an ingenious way. This index is given by:

$$S = H [I + (1\text{-}I) G^*]$$

Where G* is the Gini coefficient of income distribution among the poor, Sen provides the following interpretation of his index. He states that I represents poverty as measured by the proportionate gap between the mean income of the poor and the poverty line. In addition to the poverty gap I, there is another gap arising out of an unequal distribution of the mean

income. This is reflected in the Gini coefficient G*, multiplied by the mean income ratio (1-I). The resulting measure of the composite income gap takes note of the inequality among the poor but not the number of inequality among the poor, and it does not take note of the number of people below the poverty line. Thus, multiplying [I + (1-I) G*] by the headcount ratio H produces the composite index S which satisfies both the monotonocity and transfer axioms.

$$S \equiv P_{gap} = HI = \frac{\sum_{i=1}^{n}(z - x_i)}{nz} \qquad \text{for G* = 0}$$

Sen's measurement has one limitation. It is not additively decomposable and thus does not allow us to investigate the contribution made by a sub-group population to overall poverty in the country.

Sen's work paved the way to a large body of literature dealing with the aggregation aspects of poverty measurement. As Chakravarty (1990) points out, the alternatives and variants of the Sen index can be attained in many ways, e.g., by varying the weights on growth, by changing the normalisation rule, or by replacing the Gini index of inequality with some other index of inequality, and so on.

The Sen Index is an interesting measure of poverty and has been extensively used in empirical research. A good survey of the literature on the extension of Sen's work can be found in Sen (1979, 1982), Chakravarty (1990), Kanbur (1987), Donaldson and Weymark (1986), Atkinson (1987), and Foster (1988). In the following sub-sections I will briefly discuss the most important poverty indices that have proceeded the Sen index.

The Blackobry-Donald Index

Blackorby and Donaldson (1980) presented an alternative generalisation of the Sen index.

Central to his approach is a term he calls the "representative income" of poor, $\overset{g}{x}$. This is the level of income which, if given to each poor, would be ethically equivalent to the existing

income profile of the poor according to a social evaluation function (SEF) that satisfies certain axioms.

Blackorby and Donaldson (1980) defined the following inequality index among the poor.

$$Ip = \frac{\mu^* - \dot{x}}{\mu^*} \; Ip = \frac{\mu^* - \dot{x}}{\mu^*}$$

Where μ^* is the mean income of the poor and $\overset{g}{x}$ is the representative income of the poor.

Rearranging the Sen index in (iii) one can write

$$S = H + \left[\frac{z - \mu^*}{z} + \frac{\mu^*}{z} G^* \right]$$

Replacing G* in (vi) and Ip in (v) gives Blackorby and Donaldson poverty index.

$$BD = H \left[1 - \frac{\dot{x}}{z} \right]$$

One must note that $\overset{g}{x}$ is similar to Atkinson's equally distributed equivalent income.

The Kakawani Index

Kakawani (1980, 1980a), suggested a generalisation of the Sen index which is given by:

$$K = \frac{q}{\sum_{i=1}^{n} i^{\theta}} \sum_{i=1}^{q} (z - x)(q + 1 - i)^{\theta} \qquad \theta \geq 1$$

With $\theta = 0$, the Kakawani index reduces to the product of I and H. With $\theta = 1$, it turns to the Sen index "making it equally sensitive to the transfer of income at every income position". For $\theta > 1$, the index becomes more sensitive to income (among the poor) at the lower end of distribution.

The Takayama Index

Takayama (1979) argues that the Sen index is insensitive to the relative deprivation of the poor with respect to non-poor incomes. It limits the deprivation of the poor to the poverty line while ignoring the existence of people above the poverty line. According to Takayama (1979) "we cannot neglect the existence of the people above the poverty line" because " someone in poverty compares his income with that of others in the community as a whole, not only with that of individuals below the poverty line".

In order to provide a poverty index which is sensitive to the relative deprivation of the poor with respect to non-poor incomes, Takayama defined the censored income profiles $\overset{g}{x}$ corresponding to income profiles of x as $x^*(z) = (x^*_1, x^*_2, ..., x^*q, x^*_{q+1}\text{K}\ , x^*_n)$

where

$x^*_1 = x_i$, if $\quad x_i < z$

$x_i^* = z$, if $\quad x_i \geq z$

and

x_i is the i-th person's in the vector of population incomes.

That is, all income above the poverty line is replaced by the poverty line itself. The Takayama poverty index T, for the income profile of x is then defined as the Gini index of the x^* profile:

$$T = 1 + \frac{1}{n} - \frac{2}{n^2 \mu^g} \sum_{i=1}^{n} (n + 1 - i) x_i^*$$

Where $\mu^* > 0$ is the mean of the censored income profile x^*.

The Foster, Greer and, Thorbecke (FGT) Measure

A class of additively separable measures, which has been quite widely used in recent years, is the one proposed by Foster et. al (1984). This class of measures is additively separable in the

sense that poverty measures by population sub-groups can be aggregated to yield a single measure of poverty for the population as a whole. The FGT class of measures is given by:

$$FGT(\alpha) = \frac{1}{n} \sum_{i=1}^{q} \left(\frac{z - x_i}{z} \right)^{\alpha} = \frac{1}{n} \left(\frac{g_i}{z} \right)^{\alpha} \alpha > 0$$

The FGT class of measures views poverty essentially as a function of the poverty gap ratio, which is raised to the power of alfa, a parameter which reflects concern for this shortfall. The FGT call of measures subsumes a number of commonly used poverty measures as a special case. Note that when α=0, then $FGT(0) = H$, the measures become the Headcount ratio. When α=1, reflecting uniform concern for the depth of poverty, then $FGT(1) = Pgap = HI$ i.e., the index reduces to the income gap ratio normalised by the number of households in poverty. When α=2, reflecting heightened sensitivity for the depth of poverty, then

α

$$FGT(\alpha) = \sum_{i=1}^{G} w_g FGT_g(\alpha)$$

$$\overline{FGT}_g(\alpha) = \frac{w_g FGT_g(\alpha)}{w\ FGT\ (\alpha)}$$

$$\sum_{g=1}^{G} \overline{FGT}_g(\alpha) = 1$$

There is a vast amount of literature on the summary measures of inequality.

The **Lorenz curve** is a graphical representation of the cumulative distribution function of a probability distribution. It is used to represent income distribution, where it shows what percentage y% of the total income the bottom x% of households have. The percentage of households is plotted on the x-axis and the percentage of income on the y-axis. It can also be

used to show the distribution of assets. This is also considered as a measure of social inequality.

The **Gini coefficient** is a measure of statistical dispersion that is used to measure the inequality of income distribution. It is defined as a ratio with values between 0 and 1: A low Gini coefficient indicates more equal income or wealth distribution, while a high Gini coefficient indicates more unequal distribution. 0 corresponds to perfect equality and 1 corresponds to perfect inequality.

$$G = \frac{\sum_{i=1}^{N} \sum_{j=1}^{N} [yi - yj]}{2N(N-1)\overline{Y}} \qquad 0 \leq G \leq 1$$

where N is population and y_i is the income of person i. It is interpreted as the average deprivation level within the population from not having other members' incomes. By using Lorenz curve G is equal to the ratio of the area enclosed between the Lorenz curve and the line of equal income distribution (the diagonal) to half the size of the square.

Coefficient of Variation is another measure of inequality which satisfies both properties of a good measure.

$$S = \sum_{i=1}^{N} \left[\frac{n_i}{N_0} (x_i - \mu)^2 \right]^{\frac{1}{2}}$$

Two other statistical measures of variability are also used as measures of inequality: - Variance and Log variation. Variance is defined as:

$$V = \frac{1}{N_0} \sum_{i=1}^{N} n_i (x_i - \mu)^2$$

Log variance is defined as:

$$LV = \frac{1}{N_0} \sum_{i=1}^{N} n_i (\log x_i - \log \mu_g)^2$$

$$where \mu_g = \prod_{i=1}^{N}$$

The **Theil Index** (T) measures the level of income inequality.

$$T = \sum_{n=1}^{N} Yn \ln\left(\frac{Y_n}{Pn}\right)$$

where the population is divided into N groups (e.g., by ethnicity, race, schooling, occupation, or location, etc.) and Y and P denote the group's income and share of population, respectively. Fishlow (1970) first decomposed the Theil Index to study the sources of income inequality in Brazil.

2.2 Empirical Literatures explaining Poverty: Causes, Methodology and Results

Poverty and inequality-related studies have a short history in Nepal, and most that exist conceptualise poverty in absolute rather than relative terms. Relative poverty or inequality has been gaining prominence since the late 1980s as economists and policy makers increasingly realize that the benefits of growth do not always filter down to the masses. As Bajracharya, Suman and Osmani (1999) point out, poverty in Nepal is multi-faceted and contingent on factors such as geography, access to infrastructure, caste, and gender. Poverty levels tend to increase with subsequent increases in altitude i.e. those living in higher altitude are more likely to be poorer than those living on the plains. People closer to roads are less poor than those further away from a road head. Households and individuals living in rural area are more likely to be poorer than those in urban areas. Those belonging to the lower castes, tribal communities and female headed households tend to be the poorest.

Acharaya (2004) assessed the Nepalese poverty situation from 1977 to1997 by using a comparative static approach. The study was based on a hybrid model of human poverty[3] as devised by the UNDP. The longitudinal estimates of Human Poverty Index (HPI) Nepal along with the head-count income poverty index for the country showed that over the last three years, income poverty has increased whereas human poverty has declined. A comparison of income and human poverty indices showed that income poverty is more volatile than human poverty. Exploring the causes and consequences of Nepalese poverty, the study pinpointed it towards having both socio-economic and cultural origins. The study emphasised the restructuring of the labour market as an effective strategy for promoting overall employment, addressing widespread poverty, and mitigating the problem of a higher proportion of working age population coupled with a higher rate of unemployment.

[3] HPI is a composite index of poverty that focuses on deprivations in human lives, aimed at measuring poverty as a failure in capabilities in multiple dimensions, in contrast to the conventional headcount measure focused on low incomes.

Devkota (2005) has carried out a structural analysis of socio-economics development in Nepal over the last five decades where poverty was the central theme. This structural analysis explored some of the macro-economic relationships and found some serious contradictions between the stated goals of the plan and the feasibility of achieving them. The Social Accounting Matrix (SAM) was based on 26x26 sectors for the year 1999. The results showed that agriculture had the lowest income multiplier effects (1.769), and the construction sector had the highest (1.908). Interestingly, banking and real estate had the lowest output impact (2.201) compared to every other production sector. Both the manufacturing and construction industries had the highest output multipliers. Agriculture's aggregate income and output multipliers were smaller than those found in India and Sri Lanka. Overall, the output multiplier for Nepal was relatively homogeneous. As the SAM coefficients justify, investment in the household sector had multiplier effect values so it was imperative to intervene at household levels to enhance human and social capital.

On the assumption that the country's persistent poverty indicates frail central level planning, the structural analysis explored some of the macro-economic relationships and found some serious contradictions between the stated goals of the plan and the feasibility of achieving them. The study concluded that the past decades of development in Nepal had been futile due to regional biases and an underproductive and sluggish economy, which only forced up the increment of mass poverty level. One reason for adopting a comparative static approach was the lack of time series data on poverty and related variables for the Nepalese economy.

Wagle (2006) studied the economic inequality in urban Nepal using wealth, income, and consumption as the key indicators. Many of the factors contributing to inequality in wealth, income, and consumption were uniform and consistent; the effects of educational attainment, age, household size, children under six, adults employed in unregistered business, and a lack of house title. The effect of many variables differed in significance among the three dimension of inequality, indicating that households with high incomes were not necessarily those with high wealth and consumption.

The findings of the study further suggest that spatial segregation would rank consistently high as the strongest determinant of economic inequality in Kathmandu. This analysis did not find discrimination as a potential source of economic inequality but there were strong suggestions that economic inequality has a detrimental effect on the multiple dimensions of human lives.

Bhatta and Sharma (2006) studied the determinants and consequences of chronic and transient poverty in Nepal. The determinants focused on monetary poverty computed using household per capita expenditure (or consumption) as the relevant welfare measure. Poverty was determined on the basis of three factors - ethnicity, human capital, and wealth. The multi-nomial logit regression results indicated that while household wealth and human capital have a significant association with both chronic and transient poverty, they were more strongly related to chronic poverty. Another important factor related to poverty was the intensity of violent conflict in the household's district.

The study also highlighted a significant relationship between the literacy rate and both transient and chronic poverty. Poverty declined with an increase in literacy levels. Among the indicators of wealth, the value of livestock has a particularly strong and significant association with both forms of poverty. Like human capital, agricultural land holding had a stronger relationship with chronic poverty than with transient poverty. The effects of transient and chronic poverty on the accumulation of human capital reveal that, on average, the chronically poor have a lower level of human capital[4]. Finally, it should be emphasized that most of the factors associated with chronic poverty also had a significant association with transient poverty.

Wagle (2007) further studied the different dimensions of inequalities in Nepal. This paper investigates the scale, sources, and potential causes of economic inequality during the democratic era in Nepal. Using micro level survey data to derive Gini coefficients for consumption expenditures, incomes, and wealth, this paper found large and slightly increasing economic inequality between 1996 and 2004. Income from house rental,

[4] Human capital here refers to level of education and technical skills of population.

employment, businesses and remittances, as well as the stock of wealth in real estate, housing, and businesses, were the leading sources of inequality. Horizontal and vertical inequalities have increased along caste/ethnic and spatial lines, providing a strong impetus to the ongoing political instability in the country. These dimensions of inequality have important social, political, and policy implications.

The inequality of business ownership however, appears to be a leading source of wealth inequality, especially when looking at the rampant increase in the associated Gini index. Horizontal inequality constitutes an inter-group dimension of inequality, with groups formed along some socio-economic or demographic lines like gender, age, education, occupation, and class. These are some popular characteristics used to form socio-economically meaningful groups. Caste and ethnicity is a major socio demographic factor that provides a significant impetus to one's access to economic resources. The spatial face of inequality was also evident with increasing disparities in access to resources along the lines of urban/rural distinction, regional, and the ecological belt. Several studies have tried to show potential linkages between macro economics and poverty in Nepal. Obviously, macro-economic policy measures are primarily aimed at achieving macro-economic stability.

Based on empirical evidence and country specific macro economic characteristics, an attempt was made to review the key macro-policies and assess their poverty implications for Nepal. Nepal is a case of low growth and high poverty where the role of the public sector has been limited by different circumstances (Pusha and Palanird, 2004). The dynamic role of the public sector to boost investment in infrastructure and agriculture and reduce poverty has not been undertaken to the extent desired. Major macro economic policies related to the pursuit of economic stability and expansion in trade and financial liberalisation have not been very influential in reducing poverty. An argument is given for expansionary fiscal and monetary policies that boosts public spending in expansion of access to credits in those sectors (agriculture) where the poor are, in areas where they live (mostly rural), in factors of production they own (unskilled labour), and in the outputs (food related) they consume. A programme of ambitious fiscal decentralisation helps overcome the limitations of poor implementation.

Nepal's fiscal policy has been very passive, on account of strong dependence on foreign aid and the underlying conditionality (Roy and Walks, 2004). Because of the low levels of public investments, private sector performance has also been limited. Any increase in social spending has always been pro- poor but as the previous growth of investments in the economic sectors have not been sustained, growth has remained very low. Public investment, although pro- poor in principle, has not helped the poor because of its weak implementation.

Nepal's rising inequality is the result of the highly unequal access to land and other services like education (Balisacan et.al, 2005). These levels of inequality play an important role in the influence that economic growth has on poverty. In the case of Nepal, for every one percent increase in real GDP per capita, the incidence of poverty decreases by only 0.46 percent under the prevailing levels of inequality. If inequality was lower, the same economic growth rate would have had a larger reduction in the incidence of poverty. While the poor do not differ from the rich in the share of non-agricultural incomes, they differ significantly in the productivity of the land. The poor have poor quality land, they have a lower share of the land and irrigated land, and also use low levels of modern inputs. Improving the productivity of the land of the poor is therefore considered very important for reducing poverty. Lack of infrastructure and institutional weakness and gaps needs to be addressed through increasing public investment.

The macro-economics of poverty reduction in Nepal (UNDP, 2004) made similar findings to the studies referred to earlier. That is, in the absence of growth, the potential for redistribution are very limited. The present conditions severely limit the fiscal space for manoeuvre in the domestic economy. The introduction and implementation of Value Added Tax has not been able to sustain the growth in revenue that was apparent in the taxes it has replaced. Monetary policies have been tight. It has a favourable balance of payments because of remittances and aid. Inflation has weak links with money supply and is more sensitive to conditions in India than government policy. The scope for using monetary policy to promote pro-poor activities has been limited so far. The fixed exchange rate regime with India, who is Nepal's largest trading partner, does not provide much room for using this as an option for

promoting pro- poor growth. Privatisation so far has not been encouraging and benefits to the poor are not apparent.

Openness in the form of trade liberalisation has been the major contributing factor in expediting GDP growth and hence lowering poverty rates at the national level. This is evidenced by a recent study that adopted the Computable General Equilibrium model (CGE) to segregate the impact of trade liberalisation on household poverty (Sapkota and Cockburn, 2008). The model is based on SAM application.

The standard CGE model is disaggregated by factors, households, and commodities, into three geographical regions (urban, terai/plains and hills/mountain). For poverty analysis, the study used household survey data (CBS, 1996) with the assumption that the income of each household in a given category increased by the same amount as the corresponding representative household in the CGE model. The poverty line was endogenised using consumer price variations from the model. The FGT measures revealed that poverty decreased, particularly for households with incomes somewhat above the poverty line. Alternatively, the reduction in the percentage of population with very low incomes was quite small. The poverty gap and poverty severity curves showed that poverty fell progressively more as the poverty line was increased, which might emphasize the fact that trade liberalisation appears to benefit the richer households more than the poorest ones.

At the regional levels, Hasan, et.al (2008) analysed poverty and inequality in India based on unit-level data from three large sample rounds of National Sample Survey of consumer expenditure that comprised 16 major states of rural and urban sectors. The state-wide poverty lines were adjusted to current household expenditure through implicit price index. Both poverty and inequality were calculated on a per capita basis.

The decomposition technique of poverty reduction into growth and distribution components was based on Datt and Ravillion (1992). The growth components of poverty reduction was computed as the reduction of poverty that would result if the actual growth experienced had taken place in the context of unchanged distribution. The main drive for poverty reduction in

both the periods (1983-1993 and 1993-2004) has been the growth components. This raised an important question, why did the rate of poverty reduction not increase significantly? Inequality increased between 1993 and 2004, especially in urban areas which suggests that richer individuals experienced faster growth in terms of their consumption expenditures than poorer individuals.

In the periods (1983-1993 and 1993-2004), average per capita expenditure grew faster in urban areas in the later period. Household belonging to scheduled caste and tribe groups experienced slow growth in per capita expenditure than others. The results from regression based inequality decompositions (Fields, 2002) show that the household characteristics in urban and rural areas accounted for inequality to a greater degree in 2004 than in 1993. In rural areas, two factors – the state in which a household resides and the educational attainment of the head of the household, accounted for a higher level of inequality (10%), whereas education was the most important factor in driving urban inequality (23%). Between 1993 and 2004, educational attainment (47%) had the most dramatic impact on inequality changes, followed by state (37%), and occupational (23%) characteristics.

Given the importance of the head of the household in accounting for an increase in inequality between the two survey periods, the study further analysed the role of education in increasing inequality. In the rural sector, increasing inequality in the years of education among heads of households was a key factor putting upwards pressure on inequality. Between 1993 and 2004, there had been an increase in inequality in the rural and urban sectors, although the increase in rural inequality was fairly marginal. In contrast, inequality in urban areas increased in larger part because the returns to education increased. Inequality in the years of schooling actually declined.

Kotikula, et. al (2007) through the analysis of Household Income and Expenditure Surveys from two periods (2000 and 2005) explained poverty reduction for Bangladesh. The multivariate analysis of poverty profiles envisaged a descriptive study of the correlation between consumption poverty, household characteristics, and geographical location.

Household consumption correlates with household demographics, occupation, and the education level of the head of the household, and land ownership. The regressions also helped clarify the links between the gender of the head of the household and poverty, and between the presence of non-farm enterprises in the household and poverty. Religion and the age of the head of the household was consistently positively correlated with the level of consumption, even after controlling for household and location attributes. A higher level of education was significantly associated with a higher level of wellbeing. Agricultural land ownership was positively and significantly correlated with household consumption in rural areas. Every category of land ownership raised the level of consumption (compared to the reference group of landless households), and the coefficients increased with the size of the land.

In rural areas, relative to the reference group of households headed by self-employed farmers, households headed by daily wage workers were worse off while there was no statistically significant difference when the head was employed in other types of occupation. In urban areas, only non-agricultural self-employment by the head of the household had a positive and significant effect on household consumption compared to the reference group. The regression results revealed that remittance-receiving households tended to be better off in both urban and rural areas. The results suggested that there were more benefits to a household located in a rural community that is better connected to urban areas. The effect was greater for rural households than urban households. A reduction in poverty has been associated with shifts in household characteristics, and the relationships of these characteristics with household welfare.

The poor are more likely to belong to households with larger numbers of dependents, lower education, and with the household head engaged in daily wage labor. There were significant differences between urban and rural areas. Poverty also had a strong location aspect. Access to the sub-district headquarter and capital, proxied by rough estimates of travel time, turned out to be particularly important determinants of household consumption.

The changes in some household characteristics – in terms of smaller numbers of dependents in households and improvements in the education of household members – contributed to poverty reduction in both urban and rural areas from 2000 to 2005. The direction of changes in returns to household characteristics also revealed a trend towards improved returns for certain attributes that place households at a disadvantage – such as larger numbers of dependents, lower education, or whether the head of the household was engaged in daily wage labor.

De Silva (2008) constructed a poverty profile for Sri Lanka to study the micro-level determinants and correlates of poverty. The unconditional poverty profile was constructed using the FGT (Foster Greer and Throwbacks) index while the conditional povery profile was constructed on the basis of a multi-variate analysis of poverty correlates. Partial correlates of poverty were computed using two comparable methodologies- logistic regression and quantile regression. This study was based on nationally representative Integrated Survey 2002, which included 7,500 households (34,330 individual populations) and collected data on demographic characteristics, household income and expenditure, literacy and education, household amenities and employment.

The estimation results showed that poverty remained more acute in rural areas than urban areas, and the degree of inequality was much higher in urban areas. Poverty measurement was done by utilising four poverty lines estimated at the national, urban, rural, and estate levels.

Albert and Collado (2004) developed the profiles and determinants of poverty for the Philippines based on the Family Income and Expenditure Survey 2000. Here, the results of the regression models was indicative of broad patterns and trends, rather than for the exact numbers resulting from the regression. Although the poverty profile and regression model generated gave some idea of key directions for a strategy of poverty reduction, the role of equitable economic growth must also be considered.

Data did not allow intra-household analysis so if a household was poor, then all its members were considered poor, and if a household was non-poor, then all its members were non-poor.

The food poverty thresholds were also called "subsistence thresholds" since they could also be viewed as another form of poverty line that separates the "food-poor" households, i.e. those that earn less than what was required for subsistence on food alone, from the non-food-poor. With every addition of a household member in the employment line, per capita income (as a ratio of the poverty line) was found to increase by 32% in the capital region as against 26% in areas outside the capital, suggesting higher economic opportunities in highly urbanised areas.

Poverty status was very much related to housing characteristics and amenities. As far as the household head characteristics, the marginal effect of a male-headed household was negative at -9 percent, and statistically significant throughout the country and across all the areas with a slightly more negative marginal effects. Households headed by younger individuals, holding other variables constant, would tend to be poorer than those headed by older persons. Also, households headed by non-single persons ceteris paribus tended to be poorer than those headed by single individuals. As expected, the coefficients of the variable for the highest grade completed by the head of the household were consistently positive and significant in all areas: Attainment of higher levels of education for the head of the household would provide higher levels of household welfare.

On the basis of micro-level panel data from rural Ethiopia, Dercon (2003) analysed the determinants of growth and changes in poverty during the initial phases of economic reform from 1981 to 1995, making use of a standard decomposition of income and changes in poverty. Even though this study observed that the reforms did not deliver similar benefits to all the people, overall, consumption grew and poverty fell substantially during this period.

The main factors driving changes in income were relative price changes, resulting in changes in the returns in land, labour, human capital and location. Empirical results also indicated that on average the poor benefited more from the reforms than non-poor households. The study also underlined the higher costs linked to not implementing reforms. The study argued that if there had been no reforms, the returns to assets and equivalent would have declined further

and poverty increased. Some of the poor would have suffered more if the reform had not taken place because they faced the largest negative shocks in that period.

A recent study by Geda, et. al (2005), explored the determinants of poverty in Kenya using the binominal and polychotomous logit models based on Welfare monitoring survey data 1994. They found that poverty was generally concentrated in rural areas and in agricultural sector in particular. Being employed in the agricultural sector accounts for a good part of the probability of being poor. The educational attainment of the head of the household and the importance of female education in reducing poverty was highly emphasized.

A recent study (Bokosi, 2006) identified the sources of expenditure and poverty dynamics among Malawian households between 1998 and 2002 and modelled poverty transitions in the country using a bi-variate probit model with an endogenous selection to address the "initial conditions' problem.

The data used here comes from two sources of Panel data generated in 1998 and 2002 which are related to the demographic characteristics of households, education, health status, own production, income and expenditure, and employment. The exogeneity of the initial state was strongly rejected and could result in considerable overstatement of the effects of the explanatory factors.

The education of the head of the household, per capita acreage cultivated, and changes in household size were related to the probability of being poor in 2002, irrespective of the poverty status in 1998. Household size, primary school attendance of the head of the household, the value of livestock owned by the household, and average time to access services were significant for the probability of being poor in 2002 for households that were poor in 1998, but not for households that were not poor in 1998. Household size and average time to access services increased the probability of a household being poor in 2002 by 5 and 9 percentage points respectively. The value of livestock owned was also negatively related to the probability of being poor in 2002; a unit increase in the value of per capita value of livestock owned reduced the probability of being poor in 2002 by about 3 percent.

The IFPRI (2000) presented an analysis of the structural determinants of living standards and poverty in Mozambique (1996-1997), which was based on nationally-representative data from the first National Household Survey on Living Conditions. The Cost of Basic Needs approach identified the poverty line in terms of absolute poverty.

The incidence of poverty was higher in rural areas than urban areas, and so too the depth and severity of poverty. The determinants of poverty were modelled in a two-stage procedure on the basis of household consumption. The poverty estimates indicated that even though the country was recovering from a civil war and becoming more self-reliant for its basic needs, there was still a great deal of structural poverty in the country. Areas that stand out in particular were low levels of human capital, including low educational levels and the poor health of most of the population; low productivity in the agricultural sector, where most Mozambicans were employed; a weak physical infrastructure and poor access to basic services, including potable water, health facilities, transportation, communications, and markets; and high rates of fertility and correspondingly high dependency ratios.

2.3 Conceptualising the Deprivation Index: Importance and Methods

The last three decades have seen a significant achievement in the measurement and analysis of the multi-dimensional approach to poverty (Thorbecke, 2004). Poverty studies based on deprivation[5] index is already a familiar concept in the developed world but it is still in the initial stage for developing countries. There are very few literatures available here that deals with poverty issues in a composite and multi-dimensional framework of deprivations. And in this case, Nepal is no exception.

The measurement of deprivation to study poverty has taken a significant leap forward. From the relative deprivation approach (Townsend, 1979), followed by the consensual approach of the Majority Necessity Index (Mack and Lanseley, 1985, Halleröd, 1994) the Proportional

[5] Deprivation here refers to material deprivation unless otherwise specified.

Deprivation Index (PDI) (Halleröd, 1994) was developed. All these approaches and measures of deprivation have broadened the scope of the concept of poverty in terms of understanding the level of deprivation and assessing individuals'/ households' standards of living.

Deprivation is generally recognised as a composite concept with no single variable to measure it, so a number of variables must be combined in some way. Deprivation indicators have been used in academic literature since the late 1970s, even where different methodologies and terminology were applied successively (Calandrion, 2003). These approaches mainly differ according to the choice of indicators, to the weights (or lack of weights) applied to each indicator, and to the cut-off / threshold point chosen. We can identify the following main strands of this research.

The study of deprivation indicators and indicators of living standards has been growing. It was associated with the early work of Townsend (1979), who developed the indicators of objective deprivation to measure when individuals lacked an item, or did not participate in an activity that the majority of the population possessed or participated in. The deprivation indicators identified a point in income distribution at which poverty was indicated. This is the relative deprivation approach.

Mack and Lansley (1985) developed an alternative approach using 'socially prescribed necessities' as deprivation indicators that are based on items that most people in the sample regarded as a necessity. This is also called consensual approach or in the broader terms, the majority necessity index. Here, the poverty line is determined in reference to public opinion.

In most research nowadays, respondents are asked to clarify whether they do not have or consume an item because a) they do not 'need' it, or b) they 'cannot afford' it. It is therefore possible to distinguish between 'unenforced' and 'enforced' hardship. There has been considerable debate around this issue. The enforced lack approach helps to discriminate between those not choosing to have necessities and those forced to do without necessities because of a lack of economic resources (Halleröd, 1995). As mentioned earlier, Mack and Lansley (1985), following on from Townsend (1979), defined poverty as an enforced lack of

socially perceived necessities in order to introduce the role that choice plays in the ownership of items. Further advances were made on their research by Halleröd (1994) and Nolan and Whelan (1996).

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Deprivation indicators is a better measure of persistent income (Calandrino, 2003), and can address some of these limitations. Firstly, the aim is to measure living standards directly by looking at the 'enforced lack' of a set of material goods or social activities. In this way deprivation is closely associated to what is commonly perceived as poverty, often in a more intuitive way than simple income measures. By 'enforced lack' we mean lack of items that the household would like to have but cannot afford. In this way, at least partially, we take into account the role of preferences in the expenditure and ownership patterns of the households analysed.

There is considerable discussion in the literature regarding the concept of income and deprivation. For instance, Muffels (1993) described income and deprivation as separate concepts in poverty measurement and concluded that they should complement each other rather than act as substitutes for each other. Ringen (1988) promoted the dual criteria approach because this means that you exclude those with a low standard of consumption for reasons other than low income in your poverty definition. The combined approach also compensates for the inability of any one poverty measure to be truly perfect. There were several reasons why it could not be assumed that low income and low consumption would overlap.

There is not a perfect relationship between income and living standards and it is widely recorded that measured incomes do not always reflect living standards. So the starting point for analysis is to identify a set of 'basic' or 'primary' deprivation items which constitute 'generalised deprivation' to be included in their measure. Aggregating items into a single index may lead to the loss of valuable information because different items can represent different aspects of deprivation (Callan et al., 1996).

A key finding in poverty research is that there is a significant mismatch between poverty measured indirectly using the income approach and direct measure focusing on life style deprivation (Perry, 2000). Defining poverty as a multi-dimensional concept raises the question of how to measure overall poverty and how to weigh the different dimensions. Several solutions to the aggregation problem have been proposed, but all have been unsatisfactory on one or more counts. Poverty is thus seen as exclusion arising from lack of resources. Despite its widespread acceptance, empirical studies have failed to adequately reflect these two elements in their methods of measuring poverty (Callan et al, 1991).

Poverty measures via deprivation have been analysed from two broad categories. They are the indirect and direct measures (Ringen, 1988; Halleröd, 1995). An indirect measure would use income, typically with an income threshold or poverty line used to identify the poor (Sen, 1979). Income cut-offs used to identify the poor are often viewed as arbitrary. In contrast, a direct measure would use questions that try to measure the actual outcomes '…the living standard people actually enjoy, and poverty is measured in relation to the outcome when different kinds of resources have been transformed into living standards.' (Halleröd, 1995, p. 114).

Direct measures of deprivation have gained wide support, with the belief that they can tackle some of the issues associated with indirect measures. For example, it is difficult to get an accurate calculation of a household's income because the respondents often misreport their income. It has long been stated that poverty is not just about money and thus focusing solely on income may miss important aspects of what it means to be poor (Nolan and Whelan,

2005). This reinforces the view that poverty is multi-dimensional, and that its measurement should encompass a variety of dimensions besides income (Perry, 2000).

Indirect measures also assume that there is a direct and clear relationship between people's economic resources (income) and their standard of living, whereas research has shown that people with the same level of income do not necessarily share the same standard of living. However, as Halleröd (1995) points out, direct measures too have shortcomings, and a common objection is that such measures may merely reflect preferences in spending behaviour rather than an inability to buy particular items.

Direct measures of poverty and living standards in particular, may be used in isolation or in combination with income. One measure of living standards or well-being much favoured in the social policy world is material deprivation. Most deprivation measures generally ask respondents about the ownership of items regarded as 'necessities' by a majority of the population. People are then classified as 'deprived' if they do not possess some of these items. Poverty measures based on this type of information are also known as consensual poverty measures. Essentially, the absence of items is taken to reflect deprivation and the greater the number of items absent, the greater the degree of deprivation (Townsend, 1979; Desai and Shah, 1988; Mack and Lansley, 1985; Nolan and Whelan, 1996; Goodman and Myck, 2005).

Halleröd (1995) combined a direct and indirect measure of poverty to identify the 'truly poor'. In this way you do not incorrectly define as poor those who are deprived and not on a low income or those who are on a low income but are not deprived. Halleröd (1995) argued that direct and indirect poverty measures should be combined to produce a more robust measure. By combining the two methods you only drop those identified as poor by one method, in this way all the poor have both low incomes and low living standards. This should also minimise the role that choice plays, as discussed in the previous section, in that those who have not chosen to obtain necessities and are thereby defined as deprived will only be classed as poor when they are also on a low income.

Different social groups are likely to respond differently, with a greater or lesser likelihood of responding that an item is only lacked through choice. Deprivation indices have become the principal means to identify those areas that can be shown to be objectively poorer and where we know that people living in these locations have a higher propensity to be poor or socially excluded. Deprivation indices thus have an important role to play in consensus-building that allows governments to target particular areas and provide additional support to the people living in those areas.

In order to get a multi-dimensional index, the aggregation can be done both at the macro and individual levels. There are several processes for constructing summary measures of deprivation. The easiest way to combine a range of variables into a single measure is to add them up. This is called simple additive indices. A complex process follows the weighing process. After weighing individual deprivation indicators, which results in an aggregate deprivation index for each unit, a threshold for this aggregate must be defined to identify the poor units. There is a variety of methods purporting to measure deprivation but there is no agreed definition of what deprivation is or how it should be measured.

In this aspect, Klasen (2000) compared a standard expenditure-based poverty measure with a specifically created composite measure of deprivation for South Africa. The study, based on a household survey in 1993 comprising 9000 sample households, examined the multi-faceted dimensions of poverty and deprivation

While there was a strong overall correlation between expenditure and levels of deprivation, the correlation was much weaker among the worst-off South Africans. In addition, the two measures differ considerably in the impact of race, headship, location (urban, rural), and household size on expenditure poverty versus deprivation.

In general, the deprivation measure found more Africans, rural dwellers, members of de facto female-headed households, and members of smaller households, deprived rather than expenditure poor. Only the differences in the effect of household size on poverty were sensitive to assumptions about equivalence scales. As a result, the two measures diverged

greatly in identifying the poorest and most deprived sections of the population, which may have considerable consequences for targeting.

Similarly, Abe (2006) attempted to measure poverty in contemporary Japan using the relative deprivation concept developed by Townsend (1979)., The study constructed a Japanese version of a relative deprivation index based on two phases of surveys on living conditions in 2003. This was done by developing a composite deprivation score/index and utilising multivariate analysis of multiple deprivations. Then it examined the current status and identified the risk groups for relative deprivation. On the basis of a composite index score, the survey utilised the deprivation rate and the diffusion rate. Income data used for this analysis was household income. The frequency and depth of deprivation was indicated by the deprivation score of each household. The higher the deprivation score, the more items the household was deprived.

The logistic regression shows that young people are at a high risk of being deprived compared to older people. The results confirmed that there is a significant increase in the probability of being deprived for those who are in a lower income strata.

Shahateet (2007) studied the determinants of deprivation in Jordan based on raw data from the national Household Income and Expenditure survey 2002/03. The study constructed a deprivation index which combined monetary and non-monetary indicators and tested the model that determines the factors which affect deprivation. An econometric analysis was carried out to examine the relationship between some key socio-economic variables and the level of deprivation in the country.

Here, the dependent variable[6] was a specifically created composite measure of deprivation whereas all independent variables were also indicators, expressed in percentage, which were composed of a number of indicators. The model tested the effects of each independent

[6] The study applied seven domains and 26 indicators. Each domain was a weighted average of certain sample rates. These rates represent the proportion of deprived household members to total household members.

variable on the overall deprivation index by applying the ordinary least squares[7]. Based on this analysis, the study found that deprivation in Jordan was caused by low income, unemployment, low educational attainment, poor housing conditions, and barriers to essential services, poor health, and pollution. However, the effect of these factors varied considerably.

Having estimated the model, simulations were run to predict the changes in deprivation that would result from postulated changes in the main socio-economic variables. The step wise regression result predicted that if income deprivation, unemployment and education deprivation were reduced by 1% the overall deprivation index would decrease by 0.7%, holding other variables constant.

2.4 Conclusions

The Nepalese poverty issues are diverse. Being land locked and infrastructure-poor, the magnitude of the poverty is not only limited to the geo-physical structures of the country. Poverty and deprivation has much more to do with the socio-economic state of the locals. People residing in rural areas are poor. Agriculture as the chief occupation of the majority of those populations is pervasive to chronic poverty. This sector has the lowest income multiplier effects. Female headed households, people representing the lower castes, and tribal communities are generally poor and deprived. Their income poverty is relatively higher compared to human poverty. The major determinants of poverty are also conventional to a developing country.

Income inequality is Nepal is recognised as the effects of educational attainment, age, household size; children under six, adults employed in unregistered business, and a lack of house title were consistent. The rising income inequality is the result of highly unequal access to land and level of education. Gini coefficients showed that the distribution of income from employment, house rental, business, and remittances were the major sources of inequality.

[7] All the coefficients of the seven domains have the expected positive signs and are significant at 5% level, except for accommodation deprivation and pollution.

The overall macro economic policies in relation to economic stability and expansion of trade and finance as a means of empirical poverty reduction have not been as influential as expected in Nepal. The fiscal and monetary sectors are unable to perform as planned in order to contribute to growing poverty issues in the country. The agriculture sector, the back bone of the country, is still in a primitive form. There is a pertinent need to commercialise this sector. On the other hand, economic reform is unable to boost the economy fully and help reduce poverty.

At the policy and programme levels, the macroeconomic relationship in terms of major poverty reduction programmes has some serious contradictions between the stated goals and the feasibility of achieving them. Poverty problems are linked with the role and responsibility of local level institutions. The urge for decentralisation seemed very high as the policy and planning needed to be compatible with local socio-economic structures. The country had a comparative advantage in unskilled labour intensive, traditional skill intensive, high value or low volume, or weight goods. All these major poverty and inequality problems confronting Nepal are fully substantiated by the findings from the sector at the regional and international levels.

Theoretically and empirically, there is a growing consensus in the measurement of poverty. Although the monetary approach has traditionally dominated, the concept and methodologies of ‘deprivation’ is an emerging tool. Although there has been growing concerns regarding mismatch and overlapping between these two distinct entities, empirical literatures have established the fact that the deprivation index is a viable measure to study poverty and the general standard of living.

Most deprivation measures generally ask respondents about the ownership of items regarded as ‘necessities’ by a majority of the population. People are then classified as ‘deprived’ if they are living without some of these items. Poverty measures based on this type of information are also known as consensual poverty measures. Essentially, the absence of items is taken to reflect deprivation and the greater the number of items absent, the greater the degree of deprivation.

One of the most important aspects of the deprivation method is to create a scientifically valid index. For this, it is necessary to demonstrate that each of its components is a valid measure of deprivation. While this can be a complex process, the fact that the majority of the population consider all of these items to be necessities for life provides a priori evidence for 'face validity'. The 'criterion validity' of the deprivation index can be demonstrated by ensuring that every individual component of the index exhibits statistically significant relative risk ratios, with independent indicators known to correlate highly with poverty.

Defining poverty as a multi-dimensional concept raises the question of how to measure overall poverty and how to weigh the different dimensions. Several solutions to the aggregation problem have been proposed, but all have been unsatisfactory on one or more counts.

Deprivation indicators are useful in addressing some of the limitations of income measures. Firstly, they aim to measure living standards directly by looking at the enforced lack of a set of material goods or social activities. In this way, deprivation is closely associated to what is commonly perceived as poverty, often in a more intuitive way than simple income measures: for example, a pensioner household may receive a relatively low income but live in a comfortable self-owned house with all the standard amenities.

Secondly, deprivation indicators are better placed to measure persistence than contemporary income. This is because the lack of items such as consumer durables or adequate housing conditions are more likely to be associated with lack of resources over a prolonged period of time.

In Nepal, the study of deprivation has not entered the limelight to study the growing and multi-faceted problem of poverty. This has inhibited the study of poverty from the multi-dimensional framework of analysis. This present study has tried to address this issue by conducting a poverty study based on the concept of deprivation. And this can be a stepping stone to revealing the present deprivation level of the country, even at the micro level.

Chapter-III

Nepal: The Country Context

This chapter serves as a general overview of Nepal, the case study of this research project. This chapter presents the geo-physical, socio-political and economic structure of Nepal with the view of assessing the state of poverty, inequality, and income distribution pattern of the country.

The chapter is divided into the following. Section 3.1 discusses the geo-physical situation, section 3.2 the socio-political situation, section 3.3 is about the economic situation, and section 3.4 the economic reforms of the country. Section 3.5 summarises the key issues identified in the Nepalese economy.

3.1 Geo-physical Situation

Nepal is a land locked country bordering India in the east, west, and south, and China from the north. The total area of land within the national boundary is 147,181 square kilometers. The population, according to the Census 2001, is 23.15 million. This is estimated to have reached 25 million by 2007[8].

The country is spread across three geographical regions, five development regions, 14 zones, 75 districts, 36 municipalities, and 3995 village development committees, the political and administrative divisions of the state.

3.2 Socio-Political Situation

Nepalese society is culturally, linguistically, and religiously diverse. There are about 100 caste and ethnic groups (CBS, 2002) with some having a million or more people and others less than ten thousand (Gurung, 2003). Nepali is the national language but more than 90

[8] The data is based on CBS (2007) population projection for that year.

other languages are spoken in Nepal in everyday practice. However, only a few languages have written traditions and their own script.

The rigidities of the caste system have remained prevalent despite a series of constitutional and legal reforms that make discrimination on the basis of caste illegal. Owing to social discrimination based on the caste system, the gap in living standards between higher and lower castes is enormous. Dalits, which accounts for 16% of the total population in the country, is the lowest caste and is considered as "untouchable". Dalits are divided into many groups based on their occupation. They are also called an occupational caste group. In this largely patrimonial society, discrimination against women and children is widespread, both in the family and the workplace (ILO, 2006).

The political history of the country is very unstable and complex. After the historical unification of the country in 1825 AD, Nepal has experienced a series of political upheavals and internal (and external) conflicts at different times. As politics and development are intertwined, it becomes necessary to take stock of the political events and trends.

Nepal had no democratic pretensions until the beginning of 1951. For several years the country remained a feudal society where change in the form of government could not alter the distribution of political power, let alone economic relations. Democracy, constitutional monarchy, and a one-party anarchy system has dominated the political structure at different periods of time. The first national referendum was held during the 1980s, enabling rays of hope and aspirations of building a new democratic environment. Unfortunately, this situation could not materialise due to internal political upheavals and ideological incompatibilities among different political parties.

In 1990, thirty years of underground struggle against the autocratic rule of an absolute monarch erupted and a mass movement restored Nepal's multi-party parliamentary system. During 2001, the situation escalated into widespread civil unrest and the state spent a huge amount of resources for internal security purposes. This becomes evident by the data on how national security expenditure subsequently rises, during those periods (Annex Table: 6),

curbing development budgets. Economic activities, particularly at the local level, and the decentralisation process were the hardest hit. The government even diverted local level funding to security channels and as they remained idle, any development activities rarely took place for more than a decade in the majority of insurgency areas.

Since 1996, Nepal witnessed the Maoist insurgency—People's War—that aimed to transform the society completely. In part, the Maoist insurgency is the reflection of rising disenchantment with inefficiency and corruption in the public services, persistently high inequalities along gender and ethnic lines, and poor delivery of public services (IDA/IMF, 2003).

Nevertheless, the ten year long armed conflict has left the economy and society in an all-encompassing crisis. The cost of the conflict is very high (ADB, 2005). Economic growth slowed to an average of 1.9 per cent over the period 2002–04 and the forecast is that if this trend continues in future years (2005–09) then the country will lose about 57 per cent of economic growth due to a decline in development expenditure. Local production of goods and services were far below the potential level.

The World Bank in its Global Economic Prospects 2007 (p. 176) report cites Nepal's economic growth rate for 2006 was 1.9 per cent. This is less than the population growth rate and indicates a return to the situation of the seventies. Further, direct and indirect consequences of the insurgency, such as the cost of displaced people, damage to infrastructure, forgone opportunities, and the loss of thousands of lives are yet to be accounted for. In fact, a valid figure of people who lost (15,000 is an average estimation) their lives in 10 years of insurgency, including Maoists, is still to be accounted for. A high intensity of conflict seems to be correlated with the degree of inequality across the country (Murshed and Gates, 2005).

The modern socio-economic development of Nepal only started after 1950 from very low level socio-economic endowments. Prior to 1950, Nepal lacked any system of civil service

record of public welfare and accounting, basic social, economic and demographic indicators (USAID, 1973).

Until the 1950s, Nepal was a closed economy. Since it opened its doors to the international communities, Nepal has become more integrated into the global economy. During the last five decades (1950/51 – 2000/01) the country has witnessed motley politico-economic decision making systems (Devkota, 2005). The initial years after emancipation in the 1950s from a very autocratic regime of more than 100 years, was political disarray. The second half of the 1950s was a process of streamlining but another unfortunate political incident in 1960 pushed the country in a different direction.

Socio-economic development from 1961 to 1990 was very sluggish, regionally biased, and unproductive, which forced the increment of mass poverty level in Nepal. Socio-economic progress after 1990 seemed to be encouraging but the real achievements have been overshadowed by the weakness of politico-economical characters of ruling leaders. In the last 50 years Nepal followed the modernisation path and experienced lots of developmental patch-ups, which did not sustain or enhance productivity at the local level. Rather, the country witnessed persistent poverty in spite of huge national and international expense.

Emergency, insurgency, instability and lack of a credible government have aggravated the Nepalese politico-economic crisis. An unstable political environment continues to affect the country, retarding normal growth and development processes. This is also the post conflict political transition phase where the peace process is a critical moment in the country's democratic process, and for building a stable and prosperous future for the Nepali people. While recent political changes have resulted in a cease fire, the country is still on a highly uncertain political course. The historic political gains the country has achieved has not been sustainable.

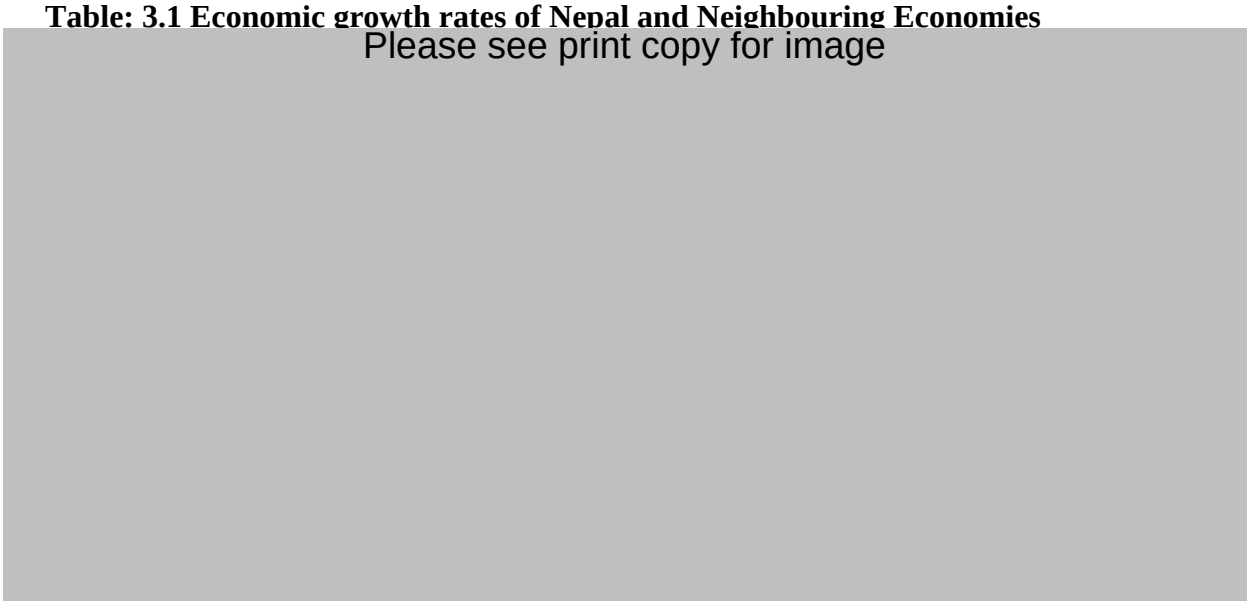
3.3 Economic Situation

Nepal is classified as a least developed country because of its low per capita income, low contribution of manufacturing sector in GDP, and low indices in the social indicators of

development. The HDI for Nepal is 0.534 which gives the country a ranking of 142nd out of 177 countries (UNDP, 2007). The annual GDP per capita (PPP) is estimated at US $ 1550 which is the lowest, even among several South Asian countries.

The recent World Development Indicators (World Bank, 2007) also places Nepal in the least developing category, both globally and regionally (Table: 3.1). Almost all the neighbouring countries show accelerating growth trends whereas in Nepal it is quite the opposite. From the 1990s onwards, growth rates for the country show decelerating trends.

Table: 3.1 Economic growth rates of Nepal and Neighbouring Economies



Source: IMF, World Economic Outlook, Washington DC, April 2008
NA – Not Available

The per capita national income of the country at the (South Asia) regional level is also very low. Even if we are compared with the three lower income group economies (Bangladesh, Bhutan and Nepal) having more or less similar socio-economic structures/characteristics, Nepal lags (far) behind them in per capita national income (Annex Table: 1).

The sequential Gross Domestic Product (GDP) growth rate of Nepal is low (Annex Table: 2). During the period from 1976-1996, the average economic growth rate was 4%, the per capita growth rate per annum was merely 1.6%. During the 1980s and 1990s the country managed to average approximately 5% annual growth in GDP whereas this growth rate was only 0.8%

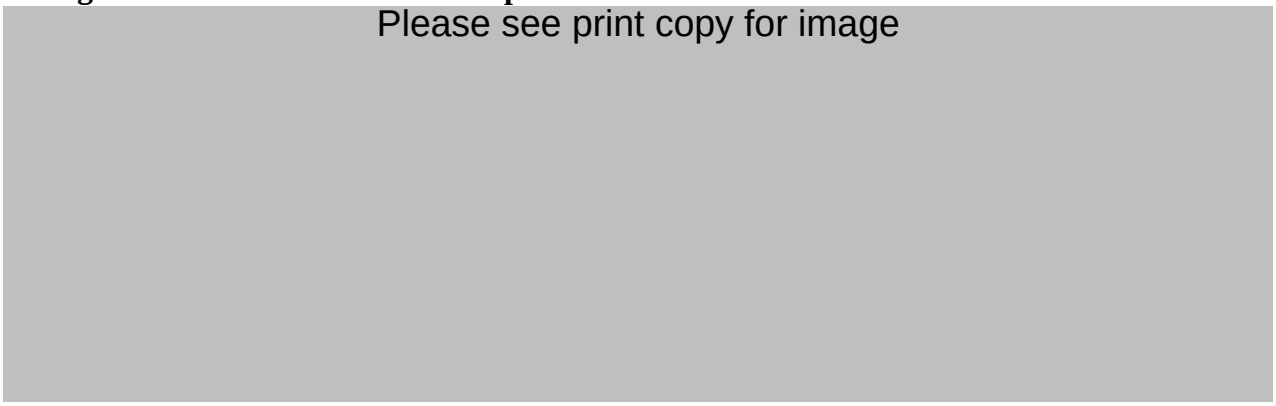
in 2001. This decline is partly attributable to the ensuing political unrest and its corresponding effect on the overall economy.

Nepal is a predominantly agricultural-based economy. In the late 1980s, the agricultural sector was the livelihood for more than 90% of the population although only approximately 20% of the total land area was cultivable and accounted for, on average, about 60 percent of the GDP and approximately 75% of exports. From 1991-2001, the agricultural growth (2.66% per year) was marginally higher than the population growth rate. An agricultural growth rate of less than 2.5% has been disappointing. It has also been volatile due to dependence on the monsoon. In the 1990s, growth was negative in 3 out of 8 years, was more volatile and less than the population growth rate.

The agricultural sector has always received the highest priority because economic growth was dependent on increasing the productivity of existing crops and diversifying the agricultural base for use as industrial inputs (ADB, 2005). At present, though the share of agriculture to GDP is declining successively, the dependency rate in this sector is increasing significantly (80%).

There are variations in GDP growth over time and it is not consistent with the population growth rate. If we observe time series data (Diagram: 1) for both indicators, they reveal dissimilar patterns for several consecutive years. The GDP growth rate fluctuates over time whereas population growth has become increasingly stable and steady. In other words, economic growth is unable to keep apace with an increasing population growth in the country. Although this is the result of various contributing factors, it is a compelling situation for the country in the long term.

Diagram: 1 Trends in GDP and Population Growth Rates



Source: UNDP (2006)

According to the industrial classification of Nepalese GDP, the composition of GDP in agriculture encompasses the largest share, followed by the trade, transportation, and communication sectors. It is quite pertinent that there is no systematic pattern to establish the fact that the larger the share of the sector, the higher the growth rate of GDP.

Table: 3.2 Composition and Growth rate of GDP

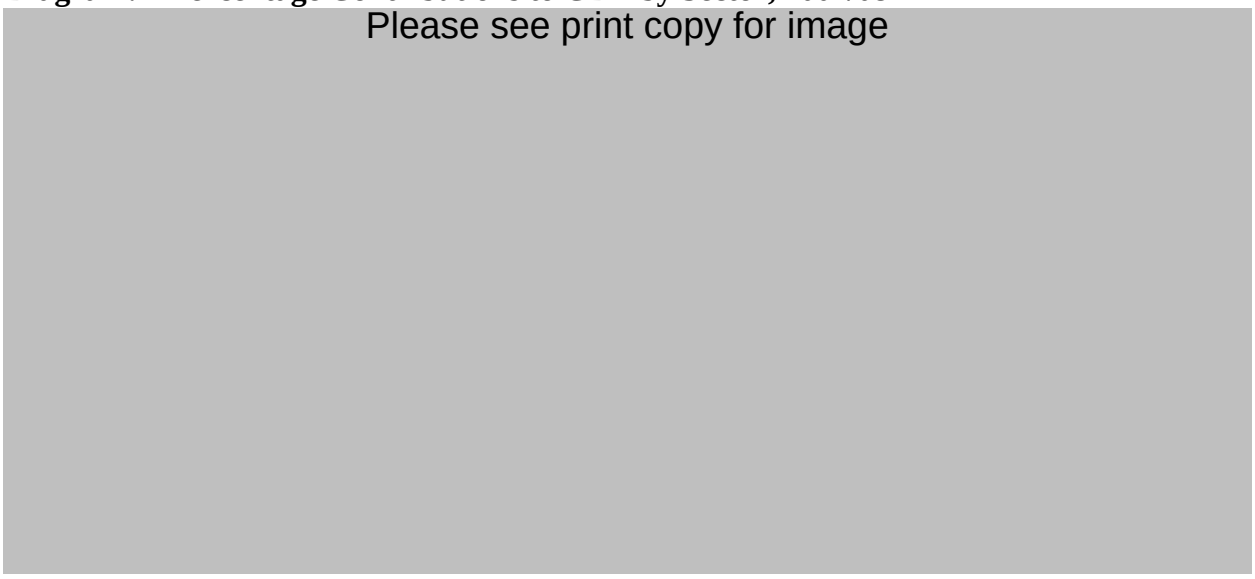
Sector/Year	Share				Growth Rates			
	1984-85	1995-96	2000-01	2005-06	1984-85	1995-96	2000-01	2005-06
Agriculture and Forestry	48.4	38.1	36.2	33.4	2.5	2.6	1.4	2.6
Fishing	0.6	0.5	0.4	0.5	2.5	4.6	5.0	3.3
Mining and Quarrying	0.3	0.5	0.4	0.5	10.4	5.0	5.1	7.3
Manufacturing	5.8	9.4	9.0	7.7	10.4	1.5	0.1	6.0
Electricity, gas and water	0.4	1.5	1.8	2.1	14.4	9.2	5.8	12.8
Construction	5.1	6.5	6.0	6.6	7.7	4.0	4.2	5.6
Wholesale and Retail Trade	15.0	17.2	16.4	14.5	6.1	1.6	1.1	4.1
Hotels and Restaurants	1.8	2.1	2.0	1.5	6.1	0.1	-1.0	3.6
Transport and Communication	5.3	5.8	7.4	10.4	6.2	9.0	9.4	8.0
Financial Intermediation	2.3	2.5	2.7	3.3	5.7	5.8	6.9	5.8
Real State and Business Services	7.1	7.7	8.3	8.3	5.7	4.3	3.4	5.3
Public Administration and Defense	1.1	1.1	1.2	1.8	6.0	9.0	8.1	7.3
Education	3.5	3.7	4.1	5.6	6.0	8.6	8.9	7.0
Health and Social work	0.9	0.9	1.0	1.3	6.0	7.6	8.2	6.6
Other Community and Social Services	2.6	2.7	3.0	2.8	6.0	3.5	2.2	5.1
Gross Domestic Product	100	100	100	100	5.0	3.7	3.1	4.5

Source: CBS (2007)

One of the likely characteristics of developing countries is the dominance of the agricultural sector which the majority of the population ultimately depends on. In contrast, in the latter years both the share and growth rates of GDP from this sector has declined significantly (Table: 3.2). However, manufacturing and trade sectors emerge and seems to balance the composition and growth rate of GDP in the later years. This marked increase in the service sectors in GDP is mainly attributed to the expansion of manufacturing, trade, tourism, and hospitality sectors, which increased significantly in the later years.

Recent data on the sectoral composition of GDP for the country, (Diagram: 2), shows that agriculture contributed 33% of gross domestic product (GDP) and 66% of employment (75%, if agriculture related trade and manufacturing are covered). This particular sector which is termed as the key to decreasing poverty initiatives has neither flourished nor expanded in the latter years to meet the global trends of commercialisation, extension, and diversification.

Diagram: 2 Percentage Contributions to GDP by Sector, 2007/08



Source: NPC (2007)

In Nepal, labour force participation is rising; a very large proportion of workers are engaged in agriculture[9]. From 1981-2001, there have been radical changes in the economic and employment structure; the contribution of agriculture declined and the industrial and service sectors increased (Table: 3.3). The trend of average daily wage also shows poor performances for the manufacturing sector. Though the dualistic nature of the underdeveloped Nepalese economy is obvious due to the existence of mutually exclusive traditional rural agriculture and modern urban manufacturing sectors (Lewis, 1954), the latter is not absorbing the disguised unemployed agricultural labour to a significant extent because of their lower wage rates.

Table: 3.3 Production, Employment and Wage Trends during 1981-2001

Sectors	% share of total workforce			Average daily wage in Rs. (1981) price		
	1981	1991	2001	1981	1991	2001
Agriculture	91	81	66	11.87	18.40	26.47
Manufacturing	3	4	9	9.85	14.43	20.84
Service	7	15	26	23.09	39.14	50.51

Source: CBS Census (1982, 1992 and 2002)

The predominance of subsistence agriculture in the economy also affects the distribution of workers by employment status. Only 16 percent of all workers were paid employees, and only 8 percent of women workers work for pay. The average monthly earnings among paid employees was NRs2,143 ($32) including both cash and in-kind payments. Legislators and senior officials were the highest paid workers earning NRs8,037 ($118) per month on average, while workers in elementary occupations netted the least, earning NRs1,491 ($22) per month on average. Men grossed about 75 percent more than women on average but this gap between average earnings for men and women was not entirely due to gender discrimination in pay. The gender gap also incorporates differences in average education levels, labor market experience, and occupational distributions (ADB, 2003).

[9] At one time, it may be emphasized that this ratio (four-fifths) was the highest in the world.

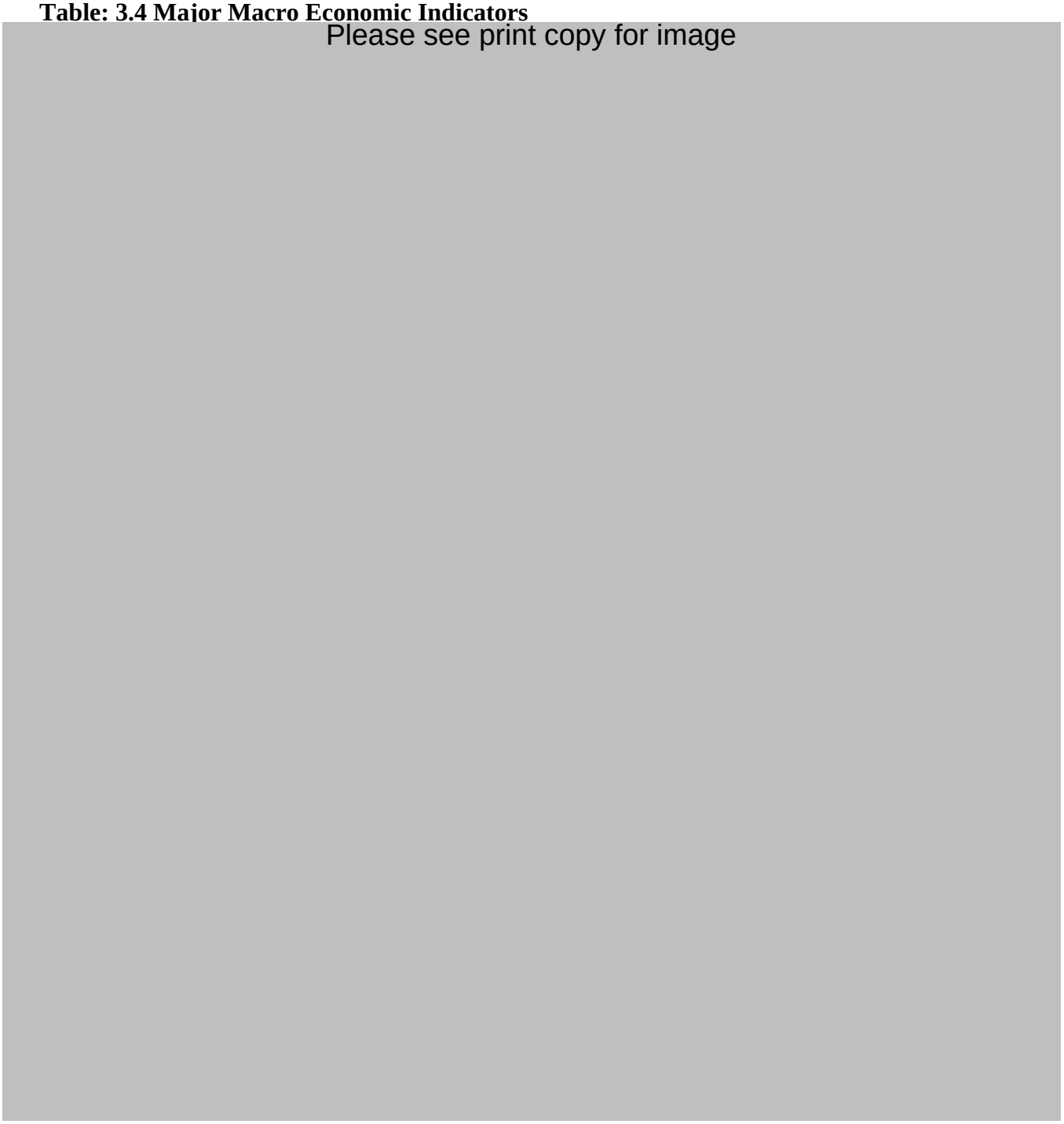
Economic growth is a pre condition for poverty reduction. As stated previously, the economic growth rate of Nepal has been marginal and inconsistent for a long time. This can be clearly seen by reviewing some of the key macro economic indicators for the country. These overall indicators give a mixed result (Table: 3.4)

Overall GDP grew slightly faster during the 1900s than the 1980s. Real GDP, which increased on average by 2.1% in the '70s, grew by 4.9% and 5.2% during the 1980s and 1990s. This growth rate is estimated at about 3% in '00s and beyond. Both agriculture and non-agriculture GDP shows inconsistent growth trends over the years. This situation still prevails due to rises in food prices, fuel prices, and the higher inflation in neighboring India, as well as globally. This has imposed a particular hardship on the poor (ADB, 2008).

The country's economy continues to remain inflationary. The average rate of inflation, as measured by the Consumer Price Index (CPI), stood at a two-digit level during the 1980s. Various adjustment measures ranging from devaluing the exchange rate to an upward revision of administered prices, along with excessive monetary expansion, resulted in a high rate of inflation during this period. The price situation did not improve during the 1990s and 2000s either. From 1991-96, inflation stood at more than 10%, and this situation still prevails due to internal instability and global inflationary pressure.

With the gradual opening of the economy in the 1980s, the total volume of trade grew substantially. Average exports increased (in rupees by 19.4% in the 1980s and 28.7% in the 1990s. After a setback in the mid- 1990s, exports have gradually picked up again but aggravating trends in exports in later years clearly indicate how the export sector is deteriorating over time. This sector could not pick up rapidly due to a lack of improvement in the investment climate, political disruptions, and power shortages, all of which have a direct bearing on the balance of payments. Alternatively, the growth rate of imports which stood at 18.4 percent, on average, during the 1980s, accelerated to 27.8% during the 1990s but is gradually declining in later years.

Table: 3.4 Major Macro Economic Indicators



** Initial estimates*

The overall balance of payment (BOP) situation is also not steady. It was mostly unfavorable until the 2000s but seems to be gradually recovering due to a steady growth of remittances

which helped offset poor export growth in recent years. However, these sluggish exports and remittances reduced the current account surpluses.

Public finance in the form of government expenditure (recurrent, capital and principal repayment) and revenue (tax and non-tax) show increasing trends over the years. Improved revenue mobilisation resulting from higher mobilisation of revenues from royalties and principal repayments, helped contain the budget deficit despite a surge in expenditure.

From 1999/2000-2004/05, most of the macro-economic indicators have been slowly decreasing with real per capita GDP growth rate remaining at about 1.0% from 2002/03 onwards. Some of the other indicators are even more discouraging. Public investment is reported to have increased by about 4% of GDP, increasing from 17% of GDP in 2001/02 to 21% in 2003/04. There was a slight increase in revenue collection. The budget deficit declined due to an increase in revenues as well as a decrease in development expenditure.

Government revenue grew by an average annual rate of 21.6% during 1991-95, but slowed down in the late 1990s. Revenue-GDP ratio remained in the range of 11.2-12.0 percent between 1995 and 2000. A reduction in public spending in the latter part of 1990s as a ratio of GDP, helped reduce the fiscal deficit but due to a low level of revenue surplus, development financing of the government continues to be highly dependent on foreign aid.

Development expenditure increased due to the government's efforts to deliver development results at the grassroots level. However, spending was constrained by the deteriorating security situation and absence of local government bodies. Development expenditure was 29% of budgetary expenditures in FY2007, compared to 27.8%, in FY2006.

Nepal's total public debt stock which was over 60% of GDP during the 2000s is estimated at 39.4% of GDP in FY2008, of which external debt is 26% of GDP. Recent debt service ratio (debt service as a percentage of exports of goods and services) increased from 9.3% in FY2006 to 10.7% in FY2007. While Nepal's debt dynamics are stable, an analysis indicated

that if economic growth remains low, exports fare poorly, and donor grants do not increase as envisaged, Nepal could become vulnerable to external shocks (ADB, 2007).

The comparatively higher performing industrial sector has recently been sluggish due to the deteriorating industrial environment[10]. Compared to the agricultural sector, growth in the non-agriculture sector was initially good, but it declined sharply later. Nepal's exports as well as manufacturing activity had grown strongly in the 1990s, but the global slowdown and deteriorating security situation at home have adversely affected virtually every sector and activities; exports, manufacturing, tourism, commerce, industry, services, construction etc. Investment levels in the agricultural and non-agricultural sectors also declined. Unplanned cuts in public investment/development spending also affected non-agricultural growth in later years.

The ADO 2009 states: "Economic growth rebounded in FY2008 from a slump in FY2007, aided by an improved security situation and emerging political stability following the end of the decade-long conflict, and by favorable weather. Sustaining this growth and the poverty reduction gains of the past decade will, though, remain challenging given the protracted and complex post-conflict political transition. Additionally, the downdraft from the deepening global downturn could damage the country's growth prospects to a greater extent."

3.4 Economic Reforms

During 1980s the process of integration with the global economy lead to economic reform amongst the poor and developing countries. As the major aim of this reform programme was to reduce poverty, accelerate economic growth and expand employment opportunities, Nepal also underwent a series of fiscal and financial transformations[11] during the late 1980s. In 1990, the country intensified the process of economic reform by changing the economic policy regime from inward looking and import substituting industrialisation to outward and

[10] Maoist's conflict is the causes for the deteriorating industrial environment starting from end of 90s to mid 20s.

[11] These includes International Monetary Fund (IMF) supported "Stabilization Program" since December 1985, and further initiated the "Structural Adjustment Program" with the support of Structural Adjustment Loans (SAL) I and II, and a Structural Adjustment Facility (SAF) in 1988.

export oriented reform. The policy regime focused on economic liberalisation and privatisation. The period beginning from FY 1991/92 was considered a post-liberalisation (reform) period. This process resembled a combination of socio-economic and political history of the country that contributed to globalisation processes (ILO, 2006).

The rate of economic growth in Nepal was robust during the pre-economic reform periods (Annex Table: 2). The country experienced severe macro economic issues during the early 1980s where the low performance of key macro indicators led to a crisis-like situation during that period. Based on poverty estimates at that time, poverty incidence exceeded 40 percent and income inequality reached an alarming height (60%). This pre-economic reform covers the period until the 1980s. The overall economy was in a deplorable situation. This entire situation, coupled with the universal instigation of globalisation, made the reform process inevitable for the country as well. As a result, the country embarked upon a new economic policy regime in the mid 1980s where the thrust for economic reform came from a structural adjustment program that was being launched globally.

As far as the impact of reforms and liberalisation is concerned, the evidence from the aggregate level points to a reasonable improvement in income and standard of living. Nevertheless, the overall impact particularly poverty, has been less than satisfactory. Although the poverty rate declined significantly during the post-reform period, there is little evidence to support that this was only due to the reforms.

The reforms led to impressive results during the initial phases by helping to transform the economy from a highly regulated to a more open, market-oriented economy. It helped create an energetic and expanding private sector and diversified the role of the private sector in manufacturing, industry, exports, education, health and finance which improved the country's macroeconomic fundamentals. The contribution of the private sectors in the entire process of reform was indispensable.

The reforms helped accelerate economic growth in the non- agricultural sector (trade, transport, tourism, manufacturing and services), to an annual rate of 7.5% in real terms, in the

first half of the nineties where the non-agricultural rose from 51%to 59% of overall GDP during that period. This in turn, helped to increase employment and income-earning opportunities in urban areas, and kept urban poverty at low levels.

However, these early reforms bypassed the agricultural sector in a significant way and consequently had little impact on rural poverty (Cockburn and Sapkota, 2008). Furthermore, the country has not being able to reap the actual benefits of the reform to develop the economy and integrate with the globalisation process in terms of a dynamic growth of trade and an inflow of FDI and technology (Karmacharaya, 2001).

Given the multiplicity of liberalisation-related reform measures and severe data constraints, it is difficult to assess their effectiveness on poverty. The few studies that have been carried out have come up with mutually conflicting conclusions. One study concluded there was a positive relationship between overall GDP growth and manufacturing sector growth on the one hand, and their relationship with poverty levels on the other (IIDS, 1996).

At the same time other studies have encountered serious conceptual and empirical difficulties in establishing a firm link between reform measures on the one hand and Nepal's growth rate on the other. Still, the study suggested that SAP has had a negative impact on poverty in Nepal (Khan, 2000). It has been argued for instance, that liberalisation initiatives hurt infant industries, which were not able to compete with imports, reduced the potential demand for (good quality) fertilizer because of a substantial reduction in fertilizer subsidies, and hurt agricultural producers due to an unrestricted entry of low-priced food-grains sourced from the strict public distribution system in India.

3.5 Conclusions

Nepal's economic growth is narrow-based and has low employment intensity, which in turn has contributed to an uneven distribution of income. Overall, a low rate of income growth, skewed income distribution, and particularly, deteriorating terms of trade of the agricultural sector vis-à-vis other sectors, have intensified poverty. GDP trends do not follow a

systematic pattern of growth over the year. The country experienced economic upheavals at different points of time. As a whole, the key macro-economic performance both during the pre-reform and post-reform periods has been highly unfavorable in lowering a high level of poverty and inequality in the country.

Most of Nepal's poor live in rural areas where agriculture is the principal source of livelihood. The agricultural growth rate during the post-reform period was appreciably lower than the pre-reform period. Much of this has been attributed to the stabilisation policies that led to the abolition of subsidies for fertilizer and irrigation. Investment growth in agriculture has been slow largely because of low public investment in agriculture. Trade liberalisation policies have also had an adverse effect on agricultural growth by reducing food prices.

The reforms affected the non- agricultural sector positively but not the agricultural sector. A higher dependence on agriculture and lower than expected growth in this sector during the post-reform period adversely affected the goal of poverty reduction in the country.

The 2001 Population Census revealed that the annual compound growth rate of population in 2001 increased to 2.3 percent, up from 2.1 percent in the 1991 Population Census. Given the high rate of population growth, the country faces a huge challenge to absorb about 300,000 people entering the labor force each year, on top of the large number of existing under employed, which is estimated at 47 percent of the total employed labor force. The first ever national labour force survey (CBS, 1999) which marked the first attempt using international comparable definitions of labour activity, show high labour force participation and low unemployment. This is consistent with an economy that consists predominately of subsistence agriculture.

The productive absorption of labor in agriculture was constrained by slow agricultural growth. Also the decline in industrial growth in the late 1990s, after an initial increase, prevented a rapid expansion of employment in that sector. Moreover, there is a substantial lack of changes in the productive and employment sectors.

In industries, an initial expansion of manufactured exports following upon trade liberalisation, later declined. The manufacturing growth rate in the second half of the 1990s was half of that in the first half. This had an adverse effect on employment and poverty reduction in the non-agricultural sector. The study attributes this to the absence of an industrial policy to help overcome low supply elasticity in manufacturing. This situation is also attributed to the lack of competitiveness of Nepalese industries to the appreciation of the real exchange rate vis-à-vis the Indian currency, despite the fact that the exchange rate is usually determined by market forces.

Public expenditure in Nepal has been constrained by the low revenue/GDP ratio and an overt emphasis of the reform process on stabilisation. This led to the allocation of too few resources for non-wage recurrent expenditure, which had a negative effect on the productivity of public investment and service delivery. Within the overall fiscal constraint, the change in the composition of public expenditure in the post-reform period, with an increase in allocation for education and health, has benefited the poor.

Policy changes have affected the non- agricultural sector positively, but the reforms didn't have any positive impact on the agricultural sector. A higher dependency on agriculture and lower than expected growth in this sector in the 1990s adversely affected the goal of poverty reduction in the country.

The country has seen a decade of considerable civil unrest: the ten year Maoist insurgency along with dissolutions of the government have repeatedly contributed to a deterioration of the infrastructure, including roads, communications, schools and hospitals. Nepal's status as one of the poorest countries in the world—with an average life expectancy of 62 years, low literacy rates, and limited access to safe drinking water, sanitation and immunisation is underpinned by centuries-old caste-based, gender, and ethnic discrimination. These factors helped fuel the insurgency and severely restricted the impact of international development assistance. The estimated cost of the conflict come in billions (Deraniyagala, 2005).Overall, the political instability and armed conflict adversely affected the development efforts and worsened the internal and external investment environment over the last decade.

The recent end to the complex socio-political situation, which intensified over the past few years, created considerable insecurity in many parts of the country, directly influencing the development activities in these areas. The situation also pre-empted a significant and rising share of the government's limited financial and administrative resources for maintaining peace and security. The costs so far in terms of human lives, destruction of property and infrastructure, increased security expenditure, and foregone development and economic activities, have been considerable.

Chapter-IV

Poverty and Income Inequality in Nepal

This chapter serves as an analytical overview of the poverty and inequality issues confronting Nepal. In particular, it focuses on the major surveys carried out in the areas of poverty and inequality in the country and simultaneously reviews them within a quantitative and qualitative framework. Furthermore, this chapter is the diagnosis of the major poverty goals and achievements, including their probable implications at national and regional levels.

The chapter is divided into the following sections. Section 4.1begins with the overall poverty and inequality situation in Nepal, section 4.2 follows with the causes of poverty in Nepal, section 4.3 deals with poverty alleviation programmes and section 4.4 deals their impact. Section 4.5 outlines the prevailing structure of inequality and income distribution and section 4.5 deals with the concept of deprivation and exclusion at the national level. Similarly, an analysis of poverty is conducted in section 4.7, along with the key determinants/correlates of poverty in section 4.8. Their consequences are then discussed in section 4.9 and the concluding remarks are given in section 4.10.

4.1 Overall Poverty and Inequality Scenario in Nepal

There is widespread poverty in Nepal. The National Planning Commission of Nepal estimates that 31% of the population are poor, and goes on to state that "Majority of population (86,72,000 approximately) are absolutely poor, barely eking out a subsistence living on fragile, vulnerable ecosystems and large areas of the country lack even the most basic infrastructure. There are wide variations based on rural-urban divide, geography, ethnic groups and occupational castes" (NPC, 2003. p. 23).

Studies on poverty in Nepal have focused on the measurement of the level and trends based on income and deficient nutrition. Most studies agree that poverty is rampant and that this

situation deteriorated alarmingly before the pre-reform period. However, an absence of historical time series data on poverty and inequality may have some significant statistical limitations when analysing poverty at the policy and programme levels. So far, poverty estimates are based on static measurements only and they constitute both income and human poverty.

The poverty line is a yardstick for defining who is poor and who is not. In Nepal, the poverty line is derived by using the "Cost of Basic Needs" method where nutrition of 2,124 kcal per day per capita is taken as the minimum caloric requirement for an "average" Nepali household. The non-food consumption value is determined using the "Upper Poverty Line Method" (NPC, 2005).

There is a growing debate in the literature on poverty regarding the use of single or multiple poverty lines based on interregional variations. However, using a common food bundle for the whole country could be considered inadequate because cultural consumption patterns of households may vary across areas or across time. Thus from the "relevance" aspect, the use of a fixed and common food bundle may not reflect the existing consumption pattern of some regions (Wodon, 1997). Following Kakwani (1980, p. 6), "It is obvious that the food basket must take into account the consumption pattern of the population living in different regions and areas".

Most of the economic and social indicators have improved since the collection of these indicators began four decades ago. However, as the country started with such low values the current situation is still characterised by low levels of economic and social indicators.

Levels of poverty in Nepal have a strong spatial and social dimension. The incidence of poverty among rural households is twice as much as urban households. Given that the majority of the population still resides in rural areas (85%), poverty is much more severe there than in urban areas. At the ecological level, poverty does not vary much between the Hill and Terai zones but is much higher in the Mountain zone. The incidence of poverty across the five development regions indicates that households in the eastern and central

regions are less poor than those in the other regions. Furthermore, those in the remote western part of the country are generally poorer than those from other rural areas.

The incidence of poverty is particularly high among Dalits and the ethnic minorities (Limbu, Sarki, Damai and Kami). The socio-economic indicators for those groups are generally far below the national average. Dalits have limited opportunities to improve their livelihood due to social constraints on occupational choice determined by the caste system, and the low educational attainment caused by limited access to education (JICA, 2003).

Because there is insufficient data it is rather difficult to investigate any variations in poverty, nevertheless these disparities are seen in social indicators across regions and socio-economic groups. For instance, people in rural areas are twice as likely to be illiterate than those in urban areas and illiteracy rates are higher among disadvantaged groups. The other social indicators such as access to health, education, and safe drinking water are lower in rural areas than in urban areas. Furthermore, these indicators are lowest in the remote areas (mostly western, mid-western and far western Hill and Mountain districts).

A further level of understanding the poverty trend can be observed by examining the available indicators of inequality obtained from different surveys. Rural inequality appears to be slightly lower than urban inequality, rural household inequality appears not to have changed much but rural per capita inequality has increased and urban per capita income inequality appears to have increased at a rate faster than rural per capita income inequality. However, looking at other aspects of poverty such as those reflected by social, demographic, health, education, and infrastructure indicators, etc, the country appears to have made some progress, notably in primary education and health (JICA, 2003).

Official poverty measures in Nepal are based on five nationally representative surveys conducted over the last three decades. The 1976/77 Survey of Employment, Income Distribution and Consumption Pattern in Nepal; the 1984/85 Multipurpose Household Budget Survey, and the 1995/96 and 2004/05 Nepal Living Standards Survey (NLSS I and II). The most recent in this line is the Small Area Estimation of Poverty, Caloric Intake and

Malnutrition for Nepal (CBS, WFP and WB, 2006). The details of these surveys are presented in Appendix 2.

At the empirical level, very few literatures are available in this sector and most of them consulted recent data and statistics. After the completion of two waves of national living standard surveys (NLSS I and NLSS II), there has been an outpouring of research on poverty. Refer to Chapter II for discussions on the poverty focused research in Nepal.

Poverty and inequality is tied to the structure of the economy, and the structure of employment and underlying changes (NESAC, 2002). While the share of agriculture in GDP has fallen from 60 percent to well below 40 percent within the last two decades, the structure of employment shows that approximately 4/5th of the labor force remains attached to agriculture as the primary source of livelihood. Approximately 45 percent of the labor force, most of it in agriculture, remains under employed. In addition, while the real GDP growth rate for 1992-2000 was 4.8 percent/year, agriculture only grew by 2.5 percent/year during the same period (NPC, 2002). Given a population growth rate of 2.3 percent/year during the period, in per capita terms the rate of growth of agriculture remained close to nil. Much of the growth filters to exports, transport, tourism, communications and finance.

Only a very small proportion of the income derived from these growth sectors, including those paid as wages, filters to rural areas. In addition, national agricultural production figures show that the production of major crops (except for wheat) has been stagnating and productivity increasing only marginally, if at all. Longer term figures for productivity (1961/63-1991/93) show a declining yield (NPC, 2002). Agricultural support services remain extremely weak. Marginal growth has been attributed to the expansion of roads which have increased access to markets. Year round irrigation is available in less than one-fifth of the agricultural land, despite the relatively large scale expenditure on irrigation. Small scale public food support initiatives, on the other hand, are gradually being withdrawn.

At the macro level, the moderate GDP growth rate is both an insufficient and inadequate instrument to reduce poverty. UNDP calculations, based on recent South Asian experience, have shown that under existing state policies, for every 1 percent growth in GDP per capita,

poverty is reduced by 0.3 percent (NPC, 2002). Assuming that this ratio holds for Nepal, and given the distinct urban bias in poverty alleviation, the prospects for a substantial reduction of poverty within the short run, particularly rural poverty, appears slim. It must be noted in this context that the growth rate of GDP between 2001-2002 has fallen dramatically to 0.8 percent. Similarly, during the year the magnitude of internal revenue raised by the government reduced to approximately one-third the previous year.

4.2 Causes of Poverty in Nepal

Poverty is a multi-dimensional problem that has numerous causes and contributing factors. It is not the result of personal failings, nor is it only a matter of income. Many factors have been cited to explain why poverty occurs but no single explanation has gained universal acceptance. Possible factors include: Economics, Governance, Demographic, Social, Political and Cultural, amongst other.

Poverty is directly related to health, education, housing, political opportunities, and other factors. Likewise, poverty worsens people's social status and diminishes involvement in their communities and in the larger sphere. These human development factors are critical to understanding poverty. They are also critical to solving the immense problem of poverty. Additionally, there are political and economic policies that can contribute to impoverishment but most explanations are as problematic as poverty itself.

There is strong evidence for persistent poverty in Nepal. Poverty is caused by low economic growth, inadequate social and economic infrastructure, relatively high population growth, limited access to land, limited access to non-agricultural income, and deep-rooted cultural and historical practices. In addition, an institutional weakness at both government (central and local) and non-government level and lack of good governance, is a major reason for the perpetuation of poverty. However, it is important to note that these factors are not all strictly causative because they can be viewed as the effects of poverty. But even if some do not cause poverty in the strict sense, they certainly result in its perpetuation.

4.3 Poverty Alleviation Programmes

Development planning began in Nepal from 1956 onwards. Although each plan had distinct developmental priorities, the allocation of resources did not always reflect them. This situation in the poverty and inequality sector was more equivocal.

While poverty has always been given a high place in development planning, only since the Sixth Five-Year Plan (FY 1981-85), has it been explicitly stated as a developmental objective. During the Seventh Plan period the government formulated its Program for the Fulfillment of Basic Needs, the first separate plan for reducing poverty. Incorporating the Seventh Five-Year Plan (FY 1986-90) as one of its integral components, this ambitious long-term program envisaged the elimination of poverty in Nepal over a 15-year period (NPC, 1992).

Poverty reduction was the main objective of the Eighth Five-Year Plan (FY1993–1997), the first national plan formulated after the restoration of democracy in 1991 (NPC, 1992). Poverty reduction was the sole objective of the Ninth Five-Year Plan (FY1998–2002) by developing rural infrastructure and social priority sectors, and through the implementation of various specific programs targeting the poor. The Plans further recognised accountable, democratic systems and market-oriented economic structures that confirmed social and ecological responsibility, as being necessary for sustained growth. In addition to the Ninth Plan, the Government's commitment to poverty reduction was further manifested by its preparation of an interim poverty reduction strategy in 2001 that drew on the findings of the relevant surveys/research as well as from public consultations and focus group discussions (ADB, 2004).

The main objective of the Tenth Five-Year Plan (FY 2002-2007), alternatively Nepal's Poverty Reduction Strategy Paper (PRSP) [12] was to bring about a remarkable and sustainable

[12] The government set two scenarios of growth targets (normal and lower cases) and policy/programmes formulated accordingly.

reduction in the poverty level within the plan period, in spite of the internal political upheavals and external economic challenges facing the country (NPC, 2006).

The definition of poverty used in the plan was no longer confined to income, but rather encompassed a holistic state of social, economic and political deprivation (NPC, 2002). As such, Nepal's recent poverty reduction strategy has identified, for the first time, social inclusion, equality, and governance as key aspects of development (NPC, 2003).

In implementing a poverty reduction strategy, the plan adopted distinct approaches and initiatives which represents a radical departure from past plans and strategies. The poverty reduction strategy itself was considered to be significantly different[13].

The poverty reduction strategy was based on four major areas of strategic intervention to address the prevailing conditions of poverty in Nepal. These were broad based and sustained economic growth, improvement in access and quality of infrastructure, social and economic services in rural areas, greater social and economic inclusion of poor men and women from all groups including Dalit[14] and disadvantaged Janajati[15] groups through mainstreaming, as well as targeted programs and good governance to improve such delivery, efficiency, transparency and accountability. (NPC, 2005). Learning from the past experience of poverty alleviation, the Plan has set up four policy pillars which are the latest governmental strategies to fight against poverty in the country.

Apart from the regular focus on key development sectors, the major emphasis in the PRSP/Tenth Five-Year Plan (2002-07) was the Social Inclusion and Targeted Programmes targetted specifically at two remote development regions, and the following disadvantaged groups, women, Dalits, Janajatis (or ethnic minorities).

[13] Government developed and disseminated policy documents like Medium Term Expenditure Framework (MTEF), Immediate Action Plan (IAP), Poverty Reduction Strategy Paper (PRSP) and organized National Development Forum (NDF) 2002 to wider circle in support of seeking technical and financial assistants for the poverty alleviation.

[14] Dalit are occupational caste groups who are highly deprived /marginalized from all aspects of life. They are considered as the excluded group.

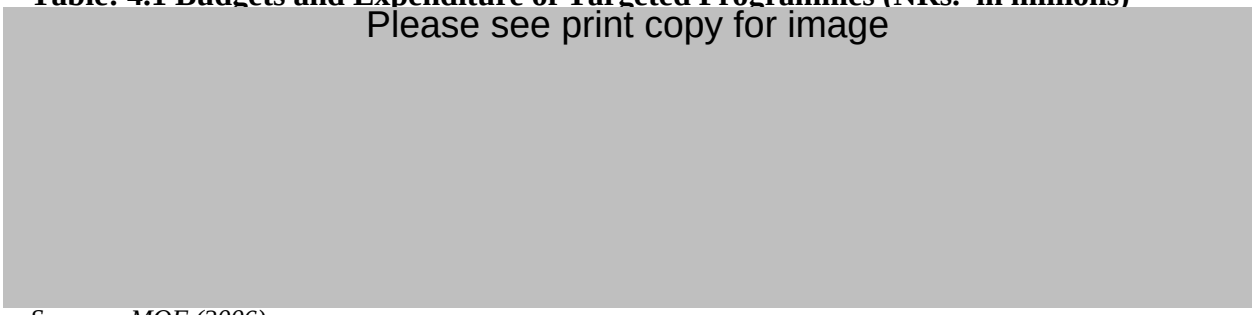
[15] Janajati groups are also minorities but their proportion varies to some extent in terms of socio-economic state.

The emphasis of the plan was to identify the barriers to access to development activities. Some of the challenges in reaching the poor and disadvantaged groups are overcoming existing bureaucratic hurdles, biases, and lack of accountability to poor people. The process of decentralisation under Local Self Governance Act 1999 was still riddled with many conflicting provisions and was unlikely to move forward without major changes in the present division of powers between the centre and the district government, and between local government and the community. Overall progress on caste and ethnic issues has been slow.

In implementing these four-pillar strategies of poverty alleviation, the plan stressed redefining the role of the state, limiting government intervention, encouraging the private sector to play a leading role in employment and income generation, non-governmental organisations and civil society working together to complement government efforts to deliver effective services to poor people. The plan also prioritised promoting community participation in the management of pro- poor activities at the local level. Finally, good governance was one of the fundamental pillars for improving the capacity of the state to deal with poverty alleviation as a whole.

A national budget was allocated for key projects (P1-First priority, P2-Second priority and P-3 Third priority) on the basis of priority projects and a major strategy adopted for poverty alleviation. Furthermore, a total of 31 and 35 targeted projects were run during FY 2004/05 and FY 2005/06 (NPC, 2007). These projects comprised social welfare, local development, social services, and agriculture and industry sectors in the order of their preferences. An assessment of the expenditure incurred according to these classifications is shown below (Table: 4.1). While analysing the tendency of the first four years of the Tenth Plan, the expenditure has increased slightly by an average of 76% per annum. There has been a decline in actual expenditure incurred by these programmes in later years. A descriptive sectoral budget and expenditure at the centre and regions is presented in Annex Table 5 and 6.

Table: 4.1 Budgets and Expenditure of Targeted Programmes (NRs. in millions)



Sources: MOF (2006)

From FY 2007-08, the government classified the budget according to a Pro-poor budget (30.3%) that directly helps reduce poverty. Major indicators are investment in the rural sector and income generating programmes in rural areas, capacity enhancement, social mobilisation, and a neutral budget (69.7%) budget that indirectly helped reduce poverty.

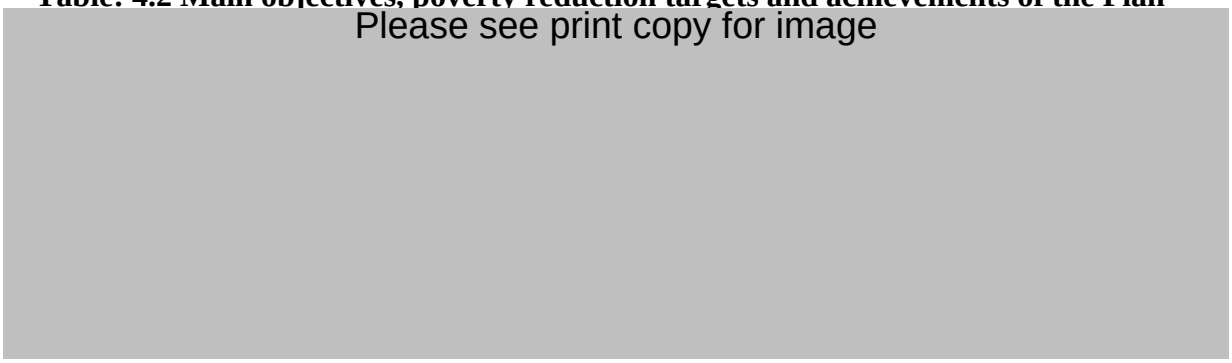
4.4 Impact of Poverty Alleviation

Although poverty alleviation was the leading agenda item during the past three periodic plans (Table: 4.2), the achievements of the pro-poor programs and activities has been virtually nil. The percentage of poor people has not been reduced as per the targets, and although the rate of poverty declined marginally, income inequality only increased at the spatial level. The planned approaches to poverty reduction also showed mixed results, and although was no target available for the overall eighth plan, by the end the incidence of poverty was estimated at 42%, which was well behind the target in the ninth plan (38%). The tenth plan has almost achieved its target but there are academic debates and contradictions about this particular finding[16].

The various state implemented, targeted poverty alleviation policies and programs since the mid- 1970s and their significance have been recognised both by the 9th and 10th development plans (NPC, 2004). These programs can be broadly divided into three categories: in terms of areas covered, target groups covered, and more broadly on the basis of credit-based programs (Bajracharya et al., 1999).

[16] Economists have raised questions on the data and analysis of poverty of NLSS- II due to very unsupportive political and socio-economic environment during that period. The performances of all key economic indicators were lower or even negative while in contrast poverty rate declines substantially.

Table: 4.2 Main objectives, poverty reduction targets and achievements of the Plan



NA – Not Available

The area-based poverty alleviation programs (areas which are undeveloped, remote, and with a lower density of social, economic and physical infrastructure), emphasised building infrastructure such as roads, micro-hydel projects, small irrigation and drinking water schemes (NESAC, 2002). These programs are usually implemented under a centre-driven model with no dedicated local level organisation specifically charged to implement them As a result, they are susceptible to political interference and a very low level of local participation. In addition, the linkage between programs designed to address regional disparities and broader development, or poverty alleviation policies at the national level remains tenuous. Further, these programs cover wide geographic areas, have access to limited financial and technical resources, and lack mechanisms to reach the very poor.

In turn the group targeted programs address the conditions of specific groups which have been identified as marginalised, poor, and vulnerable, such as Janjatis (ethnic minorities), Dalits, bonded labourers and landless in-migrants, marginalised farmers and landless peasants, and women and children. Some of these programs, in addition to being oriented to poverty reduction, also aim to redefine and reorganise the structure of society.

[17] Based on official estimates from NLSS-I survey

[18] The ninth (1997-2002) plan of the government, principally on the basis of the projected increase in per capital GDP growth, the sources of such growth and possible implications of such growth for poverty alleviation has argued that the proportion of the poor had come down to 38 percent by 2000.

[19] Based on official estimates from NLSS-II survey.

Credit based programs such as the Small Farmers Development Program (SFDP), the Production Credit for Rural Women (PCRW) and the Micro-Credit Project for Women (MCPW) were initiated with the objective of increasing the income of the poor through the provision of credit. Some of these programs also provide other services, e.g. girl-child and adult education, health, and sanitation training. Lately, the strategy of credit delivery through these programs has emphasised the utilisation of local non-governmental organisation (NGOs) and other organisations as intermediaries (NESAC, 2002). Under the government-sponsored programs, credit is also supplied by regional rural development banks (RRDBs) which are modelled on the Grameen Banks of Bangladesh. In an attempt to institutionalise micro credit delivery systems and boost the efficacy of credit based poverty alleviation programs, a semi-autonomous body, the Rural Micro-Credit Development Centre (RMDC) was established in 1998. RMDC provides wholesale credit to the poor through NGOs, savings and credit cooperatives, and RRDBs.

Early indications show that social mobilisation is paying positive returns. Credit based programs are increasingly providing support services such as technology, extension, access to markets, etc., and in addition, the credit regime is becoming, at least at the surface, more women friendly. On the other hand, most credit programmes miss their target, they lack longer term vision and transparency, and also suffer from high operational costs. Besides these qualitative assessments of poverty, the quantitative figures both in the forms of targets and achievements are virtually lacking, so there is no in- depth analysis of the subject matter.

4.5 Inequality and the Structure of Income Distribution

There was a growing disparity in income between 1977 and 2004, particularly between urban and rural income which increased widely. Income in an average urban household in 1984 was less than twice that of its rural counterpart, where as in 1996 it was more than double. Although income per household has increased, disparity in income between urban and rural areas has been steadily increasing from 1984 to 2004 (Table: 4.3).

Table: 4.3 Annual Household and Per capita Income (in Nepalese Rupees)

Year / Area	1984		1996		2004	
	Average household income	Average per capita income	Average household income	Average per capita income	Average household income	Average per capita income
Urban	21,420	3,902	86,797	16,118	157,550	32,573
Rural	14,307	2,323	40,400	7,075	65,107	12,124
Nepal	14,801	2,422	43,732	7,690	80,111	15,162

Source: NRB, 1988, CBS, 1996 and 2004.

On the basis of per capita income/expenditure, the first Nepal Living Standard Survey (CBS, 1996) derived a high level of rural (0.51), urban (0.55,) and national level (0.57) income inequality ratios. However, those ratios calculated on the basis of a households' level of income/expenditure was significantly lower (Table: 4.4).Similarly, the second National Living Standard Survey (CBS, 2004) estimated an income inequality of 0.35 Rural, 0.43 Urban, and 0.41 Nepal, on the basis of per capita income/expenditure only.

The most current data on income inequality is the Household Budget Survey (NRB, 2008) conducted by the Central Bank of Nepal during the 2006-07. Based on a micro-level (market) survey, the national level Gini was estimated at 0.37. At present this is a substantial decline in the state of income inequality at the national level.

All these varying and inconsistent estimates of income inequality clearly suggest that differences in the methodologies adopted may have influenced the findings of different

surveys conducted at the national level. It is quite evident that in most cases, Per Capita Income (PCI) presents a relatively lower level of income inequality compared to Households (HHs) income/expenditure. This also adds to the on going debate in the poverty literatures regarding the choice of precise ways of explaining poverty /inequality.

Table: 4.4 Size Distribution of Income by Rural and Urban Areas (Gini Coefficient)

Survey	Rural		Urban		Nepal	
	PCI	HHs	PCI	HHs	PCI	HHs
NPC 1977	-	0.60	-	0.50	-	-
MHBS 1985	0.23	0.55	0.26	0.85	0.24	0.57
NLSS I 1996-97	0.51	0.31	0.55	0.43	0.57	0.34
NLSS II 2003-04	0.35	-	0.43	-	0.41	-
HBS 2006-07	-	-	-	-	0.37	-

Source: CBS (2005), NRB (2008)
- Refers as data not available.

The distribution of total income provides a clear picture of the concentration of income in the country (Table: 4.5) Four sets (multiple sources) of income distribution data are reviewed to study the income distribution pattern of the country. There are inclining variations in the percentage share of income by the quintiles group where discrepancy in the level of inequality was higher in the latter years (post reform periods) of the survey compared to the former years (pre-reforms period). The percentage share of income amongst the first (lowest quantile) and last (top quantile) groups is virtually incomparable because there is a high level of income gaps between these two groups. This case is relevant to all the survey data on income distribution derived at different points in time.

Table: 4.5 Income Distribution pattern

Population share in Quantiles	% Share of income during				
	NPC 1976/77	MHBS 1984/85	NLSS I 1996/97	NLSS II 2003/04	HBS 2007/08
Lowest 20%	5.8	10.1	5.3	5.3	6.7
Next 20%	8.2	14.9	10.0	8.9	11.1
Next 20%	9.0	18.2	14.0	12.8	16.3
Next 20%	22.3	22.0	20.4	19.7	23.0
Top 20%	59.8	34.6	50.3	53.4	43.0

Sources: NPC (1978), NRB (1985, 2008) and CBS (1996, 2004)

4.6 Exclusion and Deprivation

Social exclusion is a complex and multi-dimensional process. It involves the lack or denial of resources, rights, goods and services, and the inability to participate in normal relationships and activities available to the majority of people in a society, whether in economic, social, cultural, or political arenas. It affects both the quality of life of individuals and the equity and cohesion of society as a whole (Levitas et.al, 2007).

Social exclusion is the process by which individuals and their communities become polarised, socially differentiated, and unequal (ESRC, 2004). Furthermore, it is a dynamic process of being shut out from any of the social, economic, political, and cultural systems which determine the social integration of a person in society. (Walker and Walker, 1997)

The deprivation concept has become a major focus of study for measuring poverty because it departs slightly from the money-metric approach which is item based and underpins deprivation analysis. More recent studies have renewed interest in direct measurement of poverty by presenting measures based on different sets of deprivation indicators.

Poverty, deprivation, and social exclusion are closely interrelated concepts which are often treated interchangeably. To understand poverty and social exclusion, it is necessary to consider deprivation simultaneously, from low income to the diverse non- monetary aspects of deprivation (Betti and Verma, 2007). Social exclusion has already entered the conceptual frameworks used to study deprivation and poverty in developing countries (Gore and Figueiredo, 1997). The notion of exclusion can be conceptualised in different ways to incorporate major theoretical and empirical questions of poverty. And the emerging role of deprivation in explaining the level of poverty has been a highly emphasised fact in the poverty literatures.

In the case of Nepal, inequality refers not only to unequal distribution of assets and wealth, it is also related to the state of exclusion in spite of the fact that exclusion and inequality are different concepts. However, one can cause the other, creating a vicious circle of poverty (CBS, 2006).

Exclusion is "a process and a state that prevents individuals from full participation in social, economic and political life and from asserting their rights" (World Bank, 2006). Dimensions of exclusion can be grouped into three broad categories, economic exclusion, excluded access, and social exclusion.

Economic exclusion exists when people lack equitable access to economic/financial, social, human, and natural resource assets. Excluded access to services exists when people do not have equal access to basic services (education, health, water, transport, power). Social exclusion restricts people from participating on fair terms in local and national social life. It is achieved by limiting or banning certain groups from decision making within political and social organisations that affects their lives. Social inclusion removes institutional barriers to equal opportunities whereas empowerment enhances assets and capabilities (CBS, 2006).

The multi-dimensional basis of exclusion in Nepal is deeply embedded in the country's historical, geographical, ethnic, and linguistic diversities (DFID, 2005). Within this periphery and based on four dimensions, caste and ethnicity, gender, location, and income poverty as per their relevancy in the country context, the state did the mapping of the excluded groups (Table: 4.6). Those excluded groups were identified according to their social and economic status, as well as their access to pertinent services.

There are many important dimensions to poverty in Nepal. It is now well articulated that a high incidence of poverty prevails amongst the caste/ethnic group (Dalit and Janjati), women and children, rural inhabitants, and person with lower levels of income/consumption. This is evidenced by poverty literatures available both at the country specific and regional levels. There are geographical and spatial aspects to the problems of many of these ethnic groups. Dalits, who constitute approximately 15% of the total population, have been treated as untouchables and excluded from the socio-cultural, economic and political mainstream.

Poverty rates in 2003-04 were highest among Dalits (46%) and Janjatis (44 %) (CBS, 2005). The statistics on ethnicity indicate that the most underprivileged ethnic group, the Dalits, were chronically poor compared with the non-poor. Their presence in the transient poor group is also relatively strong. A similar pattern can be observed for Janajatis as well (Bhatta and Sharma, 2006).

Table: 4.6 Dimensions and Basis of Exclusion in Nepal

[20] The Dalits, who constitute approximately 15% of the total population, remain particularly oppressed and exploited.

The concentration of poor in the rural areas is 35% compared to 10% percent in the urban areas (CBS, 2005). As a household's poverty status is potentially related to factors such as their location, rural households are more likely to be poorer than urban households (Bhatta and Sharma, 2006). The poverty factors are also positively correlated with female headed households, households with limited access to services, and those who have lower levels of income (CBS, 2005). All these persistent differences in poverty status based on caste-ethnicity, sex, location, and level of income are important determinants of poverty/deprivation for the country.

4.7 Poverty

The level of poverty and inequality is mainly determined by the distribution of household characteristics, the distribution of assets among households, and the prices of these assets. These are often referred to as the structural determinants of poverty and inequality. However, the macro-economic environment of economic growth and inflation also have considerable influence on the level of poverty and inequality (Barros, et. all, 2000).

On the basis of a survey undertaken at different periods, Table 4.7 reflects the trend in poverty incidence. So far, five national level surveys have been carried out in the area of poverty and income. All these surveys differed in methodological design except for the latter two (NLSS I and NLSS II). Here, on the basis of available data and information, two types of comparison were being made so as to have a precise understanding of different poverty measures. First, a general assessment of all the available data on poverty was made irrespective of variations in methodology adopted by the survey (Table: 4.7). Secondly, only two poverty measures were explicitly compared as per their same sources and methodology. Moreover, they can be compared directly (Table: 4.8).

Table: 4.7 Trends in Incidence of Poverty

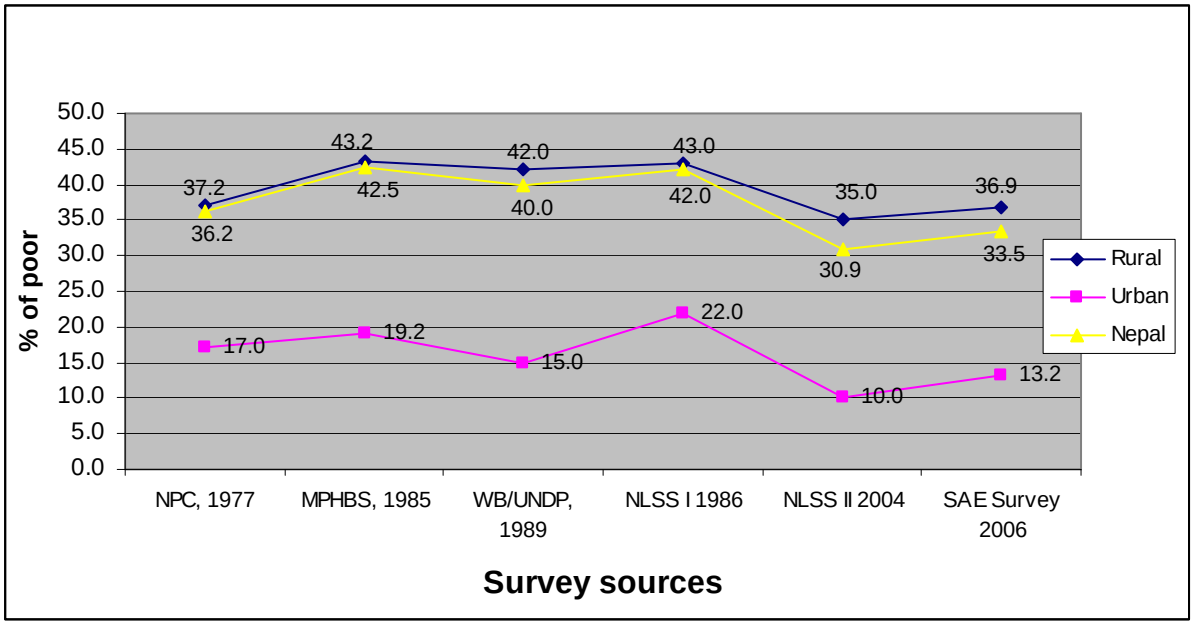
Sources	Year	Rural	Urban	Nepal	Poor Population (in '000)	Annual Change (%)
NPC	1977	37.2	17.0	36.2	4897	-
MPHBS	1985	43.2	19.2	42.5	6852	5.0
WB/UNDP	1989	42.0	15.0	40.0	7694	3.07
NLSS-I	1996	43.0 (1.15)	22.0 (2.87)	42.0 (1.09)	9507	3.36
NLSS-II	2004	35.0 (0.06)	10.0 (1.13)	30.9 (0.93)	7662	-
SAE Survey	2006	36.9 (0.009)	13.2 (0.009)	33.5 (0.009)	8672	-

Sources: NESAC (1998) ,CBS (2005), *WB (2006)*

Note: Figures in the parenthesis are standard errors.

The survey data clearly shows that the incidence of poverty is higher in Nepal and especially among the rural population (Table: 4.7). The first official estimates of poverty show 36 percent people below the poverty line. This rate was very high in rural area (37.2%) compared to urban areas (17%).

Diagram: 3 Nepal Poverty Incidences by Rural-Urban



Source: Author's compilation

After almost one decade (MPHBS survey) the incidence of poverty shows increasing trends at all levels. This trend seems to continue until the year 1996 (NLSS-I). Only in the later years (NLSS-II) does the incidence of poverty seem to decline at all levels. On the contrary, a recent (re)estimate of poverty by the Small Area Estimates (SAE) methodology shows a gradual incline in the proportion of poor at both national and regional levels, compared to this incidence in 2004/05.

Table: 4.8 gives the poverty measures for Nepal in a broader way. This comparison is valid here because both the survey methodologies are the same. In between two periods of survey, the Head-count, Poverty-gap, and the Squared-poverty gap rates declined significantly in the latter period. At present (NLSS 2003-04) 31% of the population is living below the poverty

line. In rural and urban areas 35% of rural and 10% of urban people are still living below the poverty line. This poverty estimate of 43% rural and 22% urban in 1995-1996 showed a significant decline in the proportion of people living below the poverty line over time. During that period, the poverty gap ratio declined from 0.12 to 0.75, which meant that on average, poor people have moved closer to the poverty line.

Table: 4.8 Poverty Measures: NLSS Survey I and II

Please see print copy for image

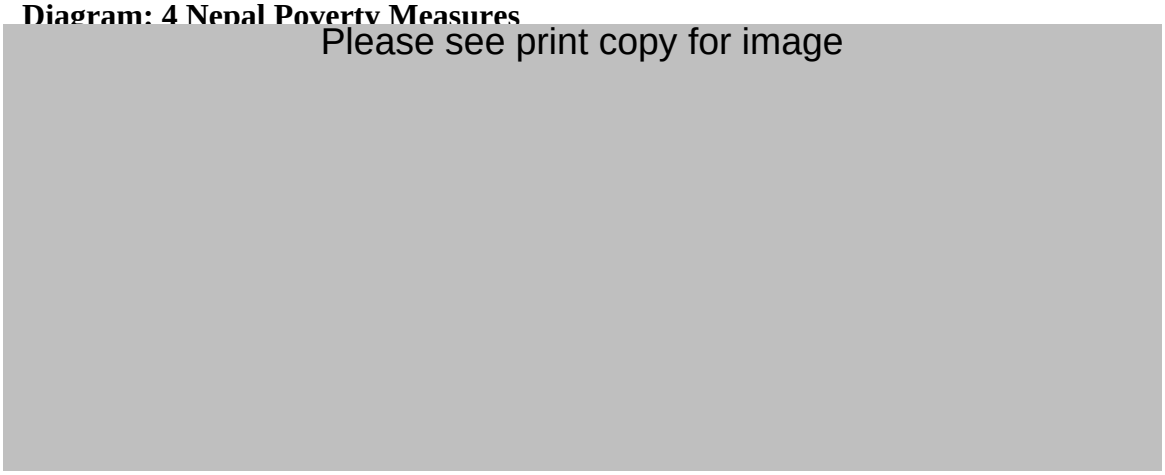
Diagram 4 shows the changes in different poverty measures during the two phases of the survey. These universal measurements of poverty show that poverty in the urban areas declined faster than in the rural areas, both in terms of its incidence, depth, and severity. This change was higher in urban area than rural areas, which confirmed that poverty in Nepal is severe and more of a rural phenomenon.

Analyses of changes in poverty are very difficult for a number of reasons. First, monitoring the disparities in income, consumption, and access by groups, gender, age, and ecological development sub-regions is irregular and infrequent. Second, the spatial unit selected for reporting is often very large, with a high degree of aggregation of information that dilutes different dimensions of poverty.

[21] Poverty gap ratio measures the mean distance below the poverty line expressed as a percentage and the mean is taken over the entire population, counting the non-poor as having zero poverty gap.

[22] The squared poverty gap, as a measure of severity of poverty, takes into account the inequality of the poor.

Diagram: 4 Nepal Poverty Measures



Source: CBS (2005)

A comparison of these (national) poverty rates with internationally defined poverty rates gives a more challenging state of poverty for Nepal with the rest of the world. By utilising NLSS II survey data, the World Bank derived two international poverty rates on the basis of two poverty lines. The poverty line of US$1 results in 24.1% of the population being below the poverty line whereas this ratio becomes significantly higher (68.5%) when using US $2 as poverty line per day (World Bank, 2007).

Recently there have been some commendable improvements in reporting on poverty, especially the human development, changes in living standards, and socio-economic indicators at the district level (SACEP, 2008). Information from NLSS I (1996/97) and NLSS II (2003/04) was used to highlight some of the key areas of changes in regional equity conditions in Nepal (Annex Table: 4). Poverty has reduced in every region and sub-region except in the rural Eastern mountain and hills where it increased from 36.1 percent to 42.9 percent during 1995/96-2003/04. However, if we look at this by development regions, poverty has decreased in every region, including the East. This implies that changes in Eastern Terai have been positive and are sufficiently large enough to influence overall outcomes for the Eastern Development Region. Similarly it was also reduced in all the ecological belts but less so in the hills than in the mountains and the Terai. Overall regional disparities are quite severe in Nepal (Chhetry, 2002).

In the course of measuring poverty, each of the sources constructs new poverty lines based on two methodologies, Basic Need Incomes (BNI) and Cost of Basic Needs (CBN), although these two concepts resemble more or less similar objectives. The National Planning Commission (NPC) survey addressed two criterions: an income level of Rs. 2 per capita per day (at 1976/77 prices) as minimum subsistence level of income and expenditure required to buy 605 gm of cereal, and 60 gm of pulses for fulfilling an average calorie requirements of 2256 kcl. This minimum caloric requirement was determined jointly by the government's Food Research Laboratory and Food and the United Nations'' Agriculture Organisation (FAO) as a minimum subsistence level of expenditure.

For the Multi- Purpose Household Budget Survey (MPHBS), the BNI was fixed (by NPC) during 1985/86. Based on the assumption that the targeted group of households spends 65 percent of their consumption expenditure on food and 35 percent on other necessities, the total BNI per person per day were estimated at Rs 5.94 for the hill/mountain region and Rs 4.71 for the terai region per capita per day at 1985/86 prices. The Central Bureau of Statistics (CBS) derived poverty line income through CBN methodology (CBS, 2005). In order to maintain the comparability of the 2003-04 results with the 1995-96 estimates of poverty in the country, poverty lines were derived to adjust for regional differences in cost-of-living and inter-temporal inflation.

A minimum nutrition level of per capita 2,124 kcal per day was determined based on the minimum caloric requirements for different age and gender groups and the composition of an "average" Nepali household. For this, 37 food items for which units and prices were available were selected and their quantities consumed by households in the second to fifth deciles of per-capita consumption distribution were determined. Expenditure on these 37 goods represented was on average 85 percent of all food expenditure of households. Therefore it was assumed that these foods provided 85 percent of all the requisite caloric requirements. And, the share of non-food consumption of the households was 15 percent for meeting the cost of basic needs of 2124 kcl (Table: 4.9).

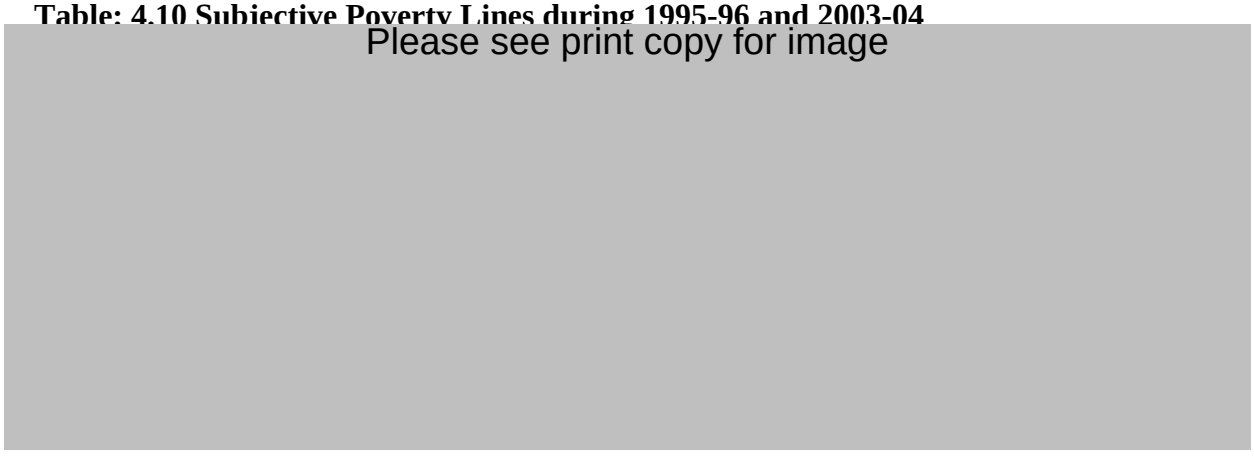
Table: 4.9 Minimum Per capita Daily Calorie adopted by Source

Source	Year	Nepal	Poverty Line (in NRs.)	Methodology/ Index
NPC	1977	2256 kcl	720.0	BNI
MPHBS	1985	2250 kcl	1741.0	BNI
CBS (NLSS-I)	1996	2124 kcl[23]	4404.0	CBN
CBS (NLSS-II)	2004	2144 kcl	7696.0	CBN
SAE	2006	2709 kcl	7696.0	CBN

Sources: Chhetry (2004), CBS (2005).
kcl – Caloric Requirement

The CBS estimated the subjective poverty lines on the basis of using a qualitative assessment of a perceived adequate consumption available from NLSS-I and II (Table: 4.10). This method assumed that each individual has his or her own reasonably well-defined consumption norms at the time of being surveyed. At the prevailing incomes and prices, there can be no presumption that these needs will be met at the consumer's utility maximising consumption vector.

Table: 4.10 Subjective Poverty Lines during 1995-96 and 2003-04



In a developing country setting, the qualitative idea of the adequacy of consumption is a more promising one compared to income (Ravillion, 1998). Poverty was estimated by

[23] These recommended per capita caloric consumptions is based on the research paper- "Nutritive Value of Indian Foods", National Institute of Nutrition of the Indian Council of Medical Research, Hyderabad.

analysing self-reported information about the adequacy of consumption on the basis of responses to NLSS I and II collected minimum income question (MIQ)[24].

As the Human Development Index[25] (HDI) measures the average progress of a country in human development, the Human Poverty Index for developing countries (HPI-1), focuses on the proportion of people below a threshold level in the same dimensions of human development as the human development index - living a long and healthy life, having access to education, and a decent standard of living. By looking beyond income deprivation, the HPI-1 represents a multi-dimensional alternative to the $1.25 a day (PPP US$) poverty measure. The HPI-1 value of 33.3 % for Nepal, ranks 99th among 135 developing countries for which the index has been calculated (UNDP, 2008).

The HPI-1 measures severe deprivation in health by the proportion of people who are not expected to survive age 40. Education is measured by the adult illiteracy rate. And a decent standard of living is measured by the unweighted average of people without access to an improved water source and the proportion of children under age 5 who are underweight for their age.

The human poverty index (HPI), a near-observer of the human development index, is based on measures of deprivation rather than capabilities. The HPI is a composite index capturing-life expectancy rate, adult literacy rates, access to health services, safe drinking water and child malnutrition rates. The HPI shows that the level of human poverty in Nepal is the highest in South Asia (UNDP, 2008).

A comparison of quantitative (Table: 4.8) and qualitative (Table: 4.10) measures of poverty clearly delineate the fact that poverty is a burning problem which is subsequently declining at the later stage.

[24] The subjective poverty line estimates for NLSS-I (1995-96) are from Ravillion and Pradhan 2000. CBS follows the same methodology to derive the subjective poverty line for NLSS-II (2004-05).

[25] Nepal has HDI value of 0.530, life expectancy at birth is 63.0 years, adult literacy rate is 52%, gross enrolment rate is 60.8% and GDP per capita is $ 999 during 2006.

4.8 Determinants/Correlates of Poverty

Poverty is determined on the basis of factors such as households, demographics, occupation, and living conditions, including social and cultural, amongst other.

Analysis of these factors using data from two different points in time will also help us understand the reasons behind the decline/incline- by assessing whether household and geographic characteristics, or a return to these characteristics, has changed significantly. And a comparison between NLSS I and NLSS II data (Table: 4.11) shows that the incidence of poverty among disadvantaged and deprived (ethnic) groups (Dalit and Janjati) is an increasing trend. Similarly, the incidence of poverty between the two survey periods has increased among households involved in casual (wage) labour, households with a tertiary level of education, and households aged above 50 years. Moreover the proportion of poor among households headed by females and households having no children has increased significantly.

Table: 4.11 Correlates of Poverty 1996 and 2004

Variables	Classification of Variables	Proportion in sample		Proportion of poor in sample	
		1996	2005	1996	2005
Social (ethnic) groups	Chhetri	17.7	1.9	19.5	0.74
	Brahmin	14.9	2.8	11.3	2.81
	Janajati	40.5	70.3	44.8	59.39
	Dalit	7.1	14.4	8.1	21.51
	Others	19.8	10.6	16.3	15.55
Major Occupations of Household head	Services (Public and Private)	9.6	3.8	4.6	2.40
	Professionals/experts/specialist/technicians	5.0	2.7	1.2	1.65
	Agriculture Labourer	55.3	50.7	61.2	47.97
	Casual Wage Labourer	29.2	28.7	32.0	34.00
	Others	1.2	1.0	1.0	0.50
Education of HH Head	Illiterate	63.3	67.1	75.9	73.28
	Literate	20.3	20.7	15.7	16.21
	Primary	7.2	6.7	6.9	6.78
	Secondary	3.9	4.3	2.5	2.65

	Tertiary	1.5	1.2	0.4	1.08
Age of HH head	less than 25 years	3.7	4.5	4.1	5.29
	25 -40 years	38.5	37.7	43.5	41.03
	41-50 years	24.3	22.9	22.3	20.76
	51-60 years	18.1	19.9	16.4	18.20
	61 years and above	15.4	15.0	13.7	14.72
Area of Residence (Rural/Urban)	Rural	93.1	72.1	97.2	74.9
	Urban	6.9	27.9	2.8	25.1
Area of Residence (Development Regions)	Eastern DR	22.5	23.1	22.1	21.09
	Central DR	34.6	35.9	26.2	39.87
	Western DR	20.3	19.7	20.6	18.61
	Mid-Western DR	12.9	11.6	17.1	12.24
	Far-Western DR	9.7	9.7	14.0	8.2
Size of the Households	less than three	2.8	9.3	1.4	7.94
	3-5 persons	31.3	46.7	25.0	43.34
	6-8 persons	41.6	33.4	47.4	35.15
	8 + persons	23.8	10.6	26.2	13.56
No. of Children	0	7.7	19.6	4.1	15.80
	1	13.7	16.6	8.2	13.73
	2	19.2	21.3	16.1	21.09
	3	21.7	17.5	22.6	17.78
	4 and more	38.1	24.9	49.0	31.60
Sex of Household Head	Female	8.6	19.3	8.1	21.67
	Male	91.4	80.7	91.9	78.33

Source: 1996 figures are CBS estimates and 2005 figures are author's estimates

As stated earlier, a multi-variate poverty profile[26] is a useful method for analysing poverty. Based on an NLSS II survey the coefficients estimated from regression to stimulate the effect of a change in characteristics of the probability of being poor (CBS, 2005) gives interesting results. Changes in the probability of being poor are higher among key demographics and educational and employment variables (Table: 4.12). For example, a newborn first child increases a household's risk of being in poverty by 60 percent in urban areas and by 70 percent in rural areas. These figures are the change in the probability of being poor.

[26] It should be noted that a poverty profile cannot be used to gauge the net association below a household characteristics and the probability of a given household being in poverty.

Table: 4.12 Change in the Probability of being in Poverty in Nepal 2004 (%)

4.9 Consequences of Poverty and Income Inequality

Poverty in Nepal is a widespread, complex, and multi-dimensional phenomenon. It is deeper and more intensive in rural areas than urban areas. There is also stark gender, ethnic, and regional disparities based on poverty outcomes. Other indicators of human poverty as measured through key social indicators closely correspond with, and confirm this rural, gender, ethnic, and regionally oriented pattern of poverty (CBS, 2004).

There is a clear nexus among the key variables/determinants of poverty. The level and intensity of poverty is closely linked to the pace and pattern of economic growth in urban and rural areas and income generating opportunities associated with such growth.

A high level of rural compared to urban poverty is due to the stagnation of the agricultural sector in per capita terms over the past few decades. Even within rural areas, the poorer segments of the population are those with less access to fertile land, irrigation, modern inputs, credit, and marketing and road infrastructure.

Despite a high level of poverty both in terms of incidence and severity, and as per their multiple sources of measurement, an in-depth analysis of the factors behind the decline in the level of poverty between the two survey periods shows factors such as increases in migration and remittances, diversification in agriculture - particularly the wave in commercial farming of agricultural products such as off-season vegetables, horticulture and dairy products, poultry and other animal products targeting the urban needs - to be the main reason for the improvement in the level of income in rural areas, where poverty is concentrated (NPC, 2006).

Similarly, a key determinant of the level and intensity of both income and human poverty is access (or the lack of it) to basic social and economic infrastructure. Rural areas lack access to basic services such as education, healthcare, drinking water, roads, and access to other infrastructure and markets. Overall, the past economic reforms have completely ignored the sector where the majority of the poor reside (Cockburn, 2001).

Rising (economic) inequality can pose a serious challenge to the social, economic, and political structure of a country. In Nepal this has further threatened the viability of democracy as indicated by the decade-long Maoist insurgency which does not appear to have ended despite its ascendance to mainstream politics, and is profoundly reshaping the nation's entire political landscape. As Nepal attempts to chart its democratic future, its success depends on the implementation of the broad-based and inclusionary democratic policies that do not aggravate, if not undo, the ever increasing inequality (Devkota, 2005).

Economic inequality increased considerably over the last three decades. The Gini index—the most widely used measure of inequality—of disposable income and consumption expenditures, for example, increased from 0.30 in 1984 to over 0.38 in 1996 and to 0.47 in 2004 (CBS, 2006). The share of the top quintile on the national income and consumption expenditure increased from 40 percent in 1984 to 47 percent in 1996 and 55 percent in 2004. The latest data derived for the Gini Index is 0.37 which shows a slight decline in income inequality at present (NRB, 2008).

Growth in Nepal has been strong, lifting a quarter of the poor out of poverty, but income inequality has grown. Increases in inequality are particularly undesirable in a multi-ethnic country like Nepal where it may reflect exclusion along caste and ethnic lines. The increase in income inequality observed in Nepal between 1995-96 and 2003-04 was driven primarily by the higher returns to higher education and professional and entrepreneurial skills (Wagley, 2007). Two caste/ethic groups - Brahman/Chhetris and Newars - stand out from the rest of the population in terms of possessing these skills. Improvements in living standards were more modest among people from disadvantaged castes who lack these and other productive assets. At the same time "discrimination" against minorities and disadvantaged castes - measured as lower returns to their human and physical assets, is a declining trend.

A recent assessment of the degree of the spatial form of horizontal inequality with variations across urban/rural, regional, and ecological belts suggested a large discrepancy in household expenditure, income, and wealth across different urban/rural, regional, and ecological areas, a condition that did not improve much during the eight years covered (Wagle, 2007).

This current wave of rising economic inequality coincided with the economic liberalisation policies pursued by the state during the 1990s, further intensifying the process of integration into regional and global markets. Starting with the average degree of inequality in the 1980s, the magnitude of inequality in Nepal today dwarfs those in all other countries in South Asia That inequality is significantly lower and declining in Sri Lanka and Pakistan, the countries

with a much longer history of economic liberalisation and political turmoil, invalidates the argument for a positive effect of liberalisation on inequality (Karmacharya, 2001).

By focusing only on income or expenditure inequality we ignore the sharp inequality in education and health that characterises the Nepali landscape (ADB, 2006). Arguably, these inequalities represent the most pernicious of inequalities, i.e., those driven by circumstances beyond the control of individuals and which gives rise to inequality of opportunities.

Neither does the notion of Kuznets' Inverted-U, hotly debated internationally, fully explain what is going on in this context as these more intensely liberalising economies do not sizably differ from Nepal in per capita and other measures of industrialisation. While these and other international political economic forces are important, as they have significant roles in the micro and macro-economic performance of a country, their effect on specific inequality outcomes would depend on the given political and social arrangements.

Economic inequality in Nepal has economic, political, and social dimensions culminating in an unequal treatment of the different groups along horizontal, vertical, and spatial lines. No doubt the changing political landscape due to government policies during the era of parliamentary democracy begun in 1990 has directly contributed to this rising inequality, yet it would be difficult to fully disentangle the effects of these different factors on inequality since they tend to gradually change over time. The fact that inequality has remained historically low in Nepal, and in South Asia in general, compared to other countries or regions in the world further complicates the issue.

Economic inequality can take many forms including inequality in the ability to consume, the ability to earn income, and the possession of property-wealth. While income can turn into consumption and while one can use a given stock of wealth to derive income and/or consumption, each manifests a specific type of access to economic resources. The magnitude of inequality too, may be different across these and their underlying sources, whereas the widely used consumption estimates show ever rising inequality in Nepal.

4.10 Conclusions

The different poverty measures analysed here - income poverty, subjective poverty line, and the human poverty index averaged around 30% poverty incidence. The country's highly stubborn incidence of high poverty registered its first significant decline during 2003/04. This is considered to be the resultant outcomes of major economic reforms undertaken during the 1990s and 2000s. This has been instrumental in enhancing growth where per capita GDP growth was significantly higher and poverty rates also declined noticeably. However, there is very little evidence to support the above statement.

Theoretically, growth and poverty have negative relationships. However, there may be a situation where a negative growth results in poverty reduction. This situation mostly occurs when the effect of inequality reduction on poverty supersedes the adverse impact of negative growth on poverty (Kakwani and Son, 2006). In the Nepalese contexts, the low level of GDP growth rate as well as the declining poverty levels during the latter phases of the post-reform period may be attributed to this empirical trend. However, the rate at which income inequality increases during that period does not fully comply with this growth principal.

The Poverty Alleviation program is less effective. Major development planning and policy instruments are either very ambitious and or under implemented. Macro-economic policies have either hindered growth or been unhelpful in promoting growth. The growing share of the service sector in GDP and concentration of these activities in urban areas implies that income is being redistributed in favour of the urban population. The centralised poverty alleviation programs virtually lack local level ownership, participation, and empowerment. The program was basically targeted towards the poor but this particular group seems to be way out of the mainstream of development. There is evidence of inefficient service delivery, mismanagement, and corruption owing to the less credible and inefficient program of poverty alleviation.

Internal conflict and political instability is responsible for transient poverty and inequality. In recent years the state of Nepali has not been able to implement development activities effectively due to intensified conflicts where the majority of the budget was spent on maintaining internal peace and stability. There was evidence that the state even diverted a huge amount of development resources to the defence sector in order to meet the increasing expenditures gap of the latter. This has also had a negative impact on the economy.

Serious concerns are being expressed that the continuing failure to develop and implement appropriate poverty reduction strategies and programs, the uncertainty surrounding stability, corruption, insecurity, and violence--arising in particular from armed conflict between the Maoists and the government, the scaling back of development programs and expenditure, and the large increase in the scale and proportion of public expenditure slated for the security forces may continue to push the GDP growth rate down.

The limited mobility of all major political forces within the center or periphery of this armed conflict has effectively negated the search for a consensual political solution, including an evolution to a new and more effective poverty alleviation program as well as the implementation of existing poverty alleviation programs.

Corruption is widely and increasingly perceived as a determinant both of poverty and relatively ineffective and inefficient poverty alleviation programs. Corruption not only reduces the scale of "on the ground" public investment for poverty alleviation--due to "layered corruption"--but also reduces the legitimacy of public laws and governmental organisations (NESAC, 2002). One investigation of a fairly large-scale food for work program, which is a significant poverty alleviation initiative, catalogued the 'heads" or sources of corruption, and showed that "between 40 and 50 percent of the total budget is believed to be appropriated for personal gain" (Meagher, et. al, 2000: p.1).

The annual reports of the Auditor-General have systematically highlighted cases of potential corruption. Newspaper reports have frequently reported cases of potential or actual corruption. There is a widespread consensus that both the scale and spread of corruption is

increasing. Recent Transparency International report (TI, 2008) on Corruption Perception Index (CPI) for Nepal is 2.6, presenting a highly vulnerable country to corruption amongst 177 countries. Bureaucratic inefficiency is another significant obstacle to alleviating poverty.

As a whole, the poverty alleviation initiatives for Nepal show that there have been some gains in reducing poverty but several large scale problems remain to be dealt with at every level.

Chapter-V

Analysis of the Deprivation Index and Poverty

This chapter analyses the process of formulating the deprivation index and identifying key determinants of deprivation/poverty through the multi-variate approach. It introduces the hypothesis, methods, and models used in the study. On the basis of a subjective conception of deprivation, the deprivation index is constructed with the aid of Factor Analysis at the household level. Second, by performing a multi-variate analysis the major determinant of poverty is discerned in the Nepalese context. This is done by applying regression analysis of the deprivation index and income. Details of the analysis are given below. Here section 5.1 describes the sources of data and methodology adopted for the study whereas in the succeeding sections, 5.2 deals with the research question and hypothesis, section 5.3 is about the estimation and empirical results, section 5.4 is an interpretation of the results according to the specified models, and section 5.5 is the concluding remarks of the chapter.

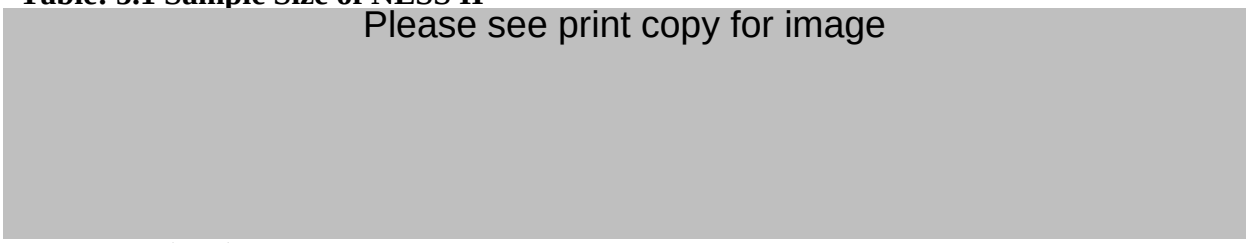
5.1 Data and Methodology

The Nepal Living Standard Surveys phase two (NLSS II) is the main (raw) data source for developing a Deprivation Index for Nepal. This is a household level survey conducted by the Central Bureau of Statistics (CBS) Nepal during 2003-04 which follows the Living Standard Measurement Survey (LSMS) techniques of the World Bank. This survey is gaining substantial recognition in developing countries because it encourages the gathering of the data and information from multi-dimensional aspects of household welfare such as consumption, income, housing, labour market, education, and health.

The survey utilises a two-stage stratified sampling procedure to collect data. The data is cross-sectional in nature and the first phase (NLSS I) of a similar survey were carried out in 1995-96. The design of NLSS II is a nationally representative random cross-sectional sample of 4008 households from six-explicit strata (36067 wards and sub-wards, 3 ecological zones,

5 development regions, 75 districts, 58 Municipalities and 3914 Village Developments Committees[27] (VDCs**)** of the country (Table: 5.1). The 2001 Population Census of Nepal provides a basis for the sample frame of this survey. The total size of the sample (4008 HHs) was selected in two stages: 12 HHs in each of 334 Primary Support Units[28] (PSUs) was selected from six strata within three geographical regions (Mountain, Hills, Terai) using Probability Proportionate to Size (PPS) sampling with the number of households as a measure of size (CBS, 2005).

Table: 5.1 Sample Size of NLSS II



Source: CBS (2005)
Figures in the Parenthesis are number of PSUs.

Up until this point, measuring poverty in Nepal was primarily based on income data or consumption/expenditures (nominal) figures. Both indicators have specific limitations in the context of developing country settings because income or consumption can be defined in many ways, some more preferable to others.

Critics have questioned the extent to which income/expenditure can be a key determinant of the standard of living. On the basis of both the utility and capability based concepts, theoretically, the term income/consumption can be defined broadly which allows for an exact monetary measure of welfare/poverty (Ravallion, 1996). Similarly, even the best income and non-income measures found in practice are incomplete on their own. An extensive research has gone into the problem of identifying money metric utility from demand behaviour,

[27] VDCs is the lowest administrative unit of the state that constitutes of nine Wards having a specific population size.
[28] PSU is the common term used in NLSS survey to represent the smallest administrative unit (ward).
[29] CBS noted that due to intensified conflict during the survey period, it was virtually impossible to cover all the selected area especially in hills and remote districts. So, enumerated HHs number is slightly lower than what was sampled.
[30] CBS did the sensitivity and robustness check of poverty estimates for 8 PSUs that were selected for the cross-sectional sample but could not be enumerated, and observed no effect on the estimates of poverty.

including setting equivalence scales which give the difference in income needed to compensate families with different demographic compositions (Ravallion, 1996).

Furthermore, a simple way of defining a multi-dimensional aspect of poverty consists of assuming households/individuals various characteristics that can be aggregated into a single indicator of welfare. Poverty can then be defined with respect to this indicator. The simple premise for this is that households/individuals welfare depends not only on monetary income but also on their physical mobility i.e. access to certain services and facilities (Kotikula, et.al, 2007).

Therefore, a sound conceptual and practical reason emerges for examining approaches to measuring poverty which do not rely on income/expenditure. On these premises the deprivation index has emerged as a major method in the literatures for measuring poverty (Saunders, et.al, 2007).

A multi-variate analysis of the determinants of poverty for household survey data is the most common feature characterising different correlates of poverty. Similarly, regression and factor analysis makes fuller use of information than do the tabulations of poverty profile (Chaudhary, 2003). The regression estimates show how closely each independent variable is related to the dependent variable, holding all other influences constant, the role of Factor Analysis is enormous in identifying representative variables among the set of numerous variables. There is a scope for a wide variety of regressions but the study here is only concerned with the determinants of poverty.

5.2 Research Question and Hypothesis

As mentioned previously, the main objective is to study the prevailing state of poverty and inequality in Nepal. On the basis of the sample based statistical model, the study formulates the deprivation index from subjective perception to analyse poverty.

Similarly, the key demographics and socio-economic variables which are considered to be the major determinants of poverty, are analysed here in the light of the deprivation index.

5.3 Estimation and Empirical Results

This study is an attempt to understand and observe trends on the correlates of poverty, including the household specific attributes and geographic or location characteristics at the national level. All these characteristics are represented as key variables pertaining to households demographic and socio-economic dimensions. Here, the deprivation index, the key and emerging concept that is developed and analysed at the empirical level, is an entirely a new concept undertaken in the case of Nepal.

In Nepal, poverty literature on the determinants and correlates of poverty in a multivariate framework are scanty at best. Most of the available studies are descriptive and focus mainly on measurement issues. Poverty reduction strategies and policies are largely informed by periodic cross-section household survey data that provides estimates of static poverty rates (Bhatta and Sharma, 2006). A rigorous analysis of the determinants/correlates of chronic and transient poverty is virtually lacking. However, even at this challenging state, past researches indicate that most of the factors contributing to static poverty are similar to those in other developing countries. As elsewhere, a household's poverty status is potentially related to probable factors such as location, composition, human capital, and wealth (CBS, 2005).

5.3.1 The Deprivation Index

Deprivation is defined as a lack of necessities that are commonly perceived as integral in any given society (Saunders, et.al, 2007). This concept has already been established as a major theme in the poverty literatures. A deprivation index was first developed by British sociologist Peter Townsend (1979) and subsequently by others such as Mack and Lansley (1985), Gordon, et.al (2000), and Gordon and Levitas (2006). The term deprivation is mainly used to identify who is in poverty and to help set a poverty line measured in terms of income.

Townsend (1979) defined poverty as relative deprivation and argued that: "Individuals, families and groups in the population can be said to be in poverty when they lack the resources to obtain the types of diet, participate in the activities, and have living conditions and amenities which are customary, or at least widely encouraged or approved, in the societies to which they belong. Their resources are so seriously below those commanded by the average individual or family that they are, in effect, excluded from ordinary living patterns and activities." (Townsend, 1979, p.32)

The deprivation index is a direct measure of living standards. The index identifies poor as those households lacking basic human needs (Rio Group, 2006). In contrast to monetary poverty lines in which income or expenditure acts as an indicator of wellbeing, this approach is considered to be multi-dimensional because it uses several indicators to represent a particular dimension of welfare. The initial step in analysis is to identify a set of items or activities conceived as necessities, which can be satisfactorily used as an indicator of deprivation (Callan, et.al, 1991).

Several steps constitute the development of a scientifically valid deprivation index. First choose a set of indicators and then evaluate the household situation for each indicator. Then a weighting structure is defined for aggregating the indicators and finally, a threshold is determined that divides the deprived population from the non-deprived (Mayo, 2005).

In order to create a deprivation index, a number of measures have been devised which attempt to combine a range of variables into a single dimension of deprivation. These extend from the simple additive measures through to those based on more sophisticated statistical techniques (Willitts, 2006). Factor and cluster analysis are some of the common applications amongst others (Abeyasekera, 2003). Such methods are primarily concerned with selecting items to include in a single summary index that captures primary deprivation. However, all these attempts to simplify a number of variables into a single, summary measure have limitations. Similarly, there is no agreed definition of what deprivation is or how it should be measured (Rio Group, 2006).

The deprivation index uses multiple indicators to measure deprivation, ranging from income and employment domains to health, education, housing, physical facilities, and living environment deprivation domains. However, in the process of devising the index, a certain level of abstraction is inevitable (Rio Group, 2006).

Empirical literatures on the measure of deprivation show that there are basically two ways to measure poverty. One is to explore an individual(s) opinion about what constitutes an adequate income level (Van Praag et, al., 1982; Saunders et al., 1994), and the other refers to an individual(s) perception of necessities (Mack and Lanseley, 1985, Halleröd, 1994).

The key features of the definition of deprivation that links it to the notion of poverty is its emphasis on a lack of resources as being the underlying causes of deprivation. This implies that if deprivation can be defined, it can help to identify who is in poverty and also how much income is needed to overcome it (Saunders, 2008). This interpretation of the role of derivation places fewer requirements on the robustness of the deprivation indicators than if they are assumed to actually measure poverty directly (Bardasw and Finch, 2003). Thus, a substantial number of literatures confirm the fact the deprivation is a better measure to define poverty. For the purposes of this research project, a deprivation index is constructed on the basis of Factor Analysis, which is further explored with the help of regression analysis. Details of the process and techniques of these analyses are given below.

5.3.1.1 Factor Analysis

Factor analysis is a statistical technique used to identify a relatively small number of factors that can be used to represent relationships among sets of many interrelated variables. The model for the i^{th} standard variable is expressed as:

$$F_j = \sum_{i=1}^{p} Wi_j X_i \qquad \text{(i)}$$

Where,

F is the common factor

Wi is the factor score coefficients

X is the variables

p is the number of variables

This study is an attempt to develop a deprivation index on the basis of the qualitative responses provided at the household level. These responses deal with the perceptions of households' standard of living, access and utilisation of public services and basic facilities. They can be broadly categorised into three major domains (Table: 5.2). The first domain is related to basic needs fulfillment, the second is on the status of service delivery by the state, and third domain is related to access to infrastructures and prominent facilities among the local population. All these data are organised in the form of likert scales[31] interval and Cronbach's alpha is used for testing the reliability of the scale.

Table: 5.2 Components of Subjective Measure of Deprivation

	Score (1 signifying most deprived, 3 least)		
Component (Frequency)	**1**	**2**	**3**
Basic needs fulfillment			
Food consumption	1120	2713	79
Housing	1477	2405	30
Clothing	1256	2625	31
Family Health care	1030	2846	36
Children's Schooling	803	2269	840
Income	2523	1345	44
Service delivery status			
Health services	817	2436	659
Education services	419	1981	1512
Access to Infrastructure			
Drinking water	715	1547	1650
Electricity	285	1106	2521
Road	1520	1639	753
Post office	463	2240	1209
Telephone	760	1741	1411
Total Responses	3912		

Source: Derived from NLSS-II Survey, 2004.

[31] Each indicator is scored on a scale of 1 to 3 to roughly ensure that a score of three represents a best possible condition or standard; two gives the moderate level whereas the score of one gives low level of standard or deprivation.

Data are assigned individual weights according to their respective scale. Two procedures are used to derive a weighting of the various components of the index. One derives the weights from the data itself based on principal component analysis and the other by calculating the total deprivation index as the average score of all individual components.

All the variables referred to here as components in more technical terms are relevant as per their usage while developing an index of deprivation. All of them a have fundamental and intrinsic significance (Klasen, 2000) and besides, they are the most important aspects representing well-being in a developing setting from the point of view of an enforced lack approach[32].

The deprivation index should be scientifically valid. While constructing an appropriate deprivation index, it is indispensable to demonstrate that each of the components is a suitable measure of deprivation. While this can be a complex process the fact that the majority of the population consider all of these items to be necessities of life provides a priori evidence for 'face validity'. The 'criterion validity' of the deprivation index can be demonstrated by ensuring that every individual component of the index exhibits statistically significant relative risk ratios, with independent indicators known to correlate highly with poverty (Rio Group, 2006, p. 127).

In the process of construing the index, much more depends on the choices, the scoring, and the implicit weighting assigned to the indicators. However, for this study, it should be clearly noted that this is not an attempt to propose a definitive measure of well-being, but simply to contribute to larger debates about possible ways to capture well-being more directly than relying on several other imperfect proxies i.e. income /expenditures (Klasen, 2000). The

[32] The enforced lack approach means that an item is counted as lacking if it cannot be afforded. Such indictors are used to directly identify the poor. In this way those who cannot afford items that the majority in society say are necessary were defined as poor.

sensitivity test is conducted by constructing a core deprivation index which contains a total of thirteen components.

The present study is based on the subjective dimension of formulating the Deprivation Index (Eroglu, 2006), which is the extended from the work of Townsend (1979), Mack and Lanseley, (1985), Halleröd, (1994), and develops an index of deprivation integrating both objective and subjective dimensions. This method of constructing the index is termed as Factor Weighted Deprivation Index (FWDI). Here, the objective component is isolated. The index draws on data from NLSS II survey from 3912 households conducted during 2003-04.

The index combines three dimensions of deprivation in relation to general living standards, public services, and basic facilities, and weighs them according to subjective perceptions regarding which items are more critical to deprivation. All these variables are basic components that are commonly included as an indicator while constructing the index. A particular application of factor analysis in determining deprivation measures and their corresponding weights leads to a more sophisticated and theoretically robust index than those used previously (Eroglu, 2006).

Two questions are central to debates concerning the measurement of poverty from a deprivation perspective: What are those standards of living whose absence indicates deprivation, and how can one decide upon the relative value of each standard of living (Sen, 1987)? The first is to determine both the deprivation measures and their respective weights according to the subjective perceptions of respondents. The second set includes the statistics obtained from factor analysis, which is a technique of identifying underlying dimensions of variation on which the observed variables are loading by means of various extraction and rotation methods (Tabachnick and Fidell, 2001).

The decision regarding the number of factors depends more on the nature of the survey data. Nevertheless, Eigenvalues representing variance or the screen test of Eigenvalues plotted against factors can aid this decision. The latter was used in this study to determine the number of factors trialed. After several trials, a three factor solution obtained through

combining principal components analysis with a varimax rotation technique (orthogonal) was extracted. In fact, this particular solution did not prove significantly different from those produced by other combinations.

The ultimate aim in conducting factor analysis is to explore how variables are correlated with each other, and how they can be summarised to avoid any risk of repetition. The principal components extraction technique is deemed more suitable for this purpose than testing a hypothesis about underlying processes (Tabachnick and Fidell, 2001). Additionally, the varimax rotation technique, which maximises variance of factor loadings, was preferred to increase the sensitivity of the weights to the perceptions of the minority.

The decisions relating to the selection of variables to be interpreted by each factor, or to be retained within the index, were based on the factor loading scores of the individual variables on it. Factor loading scores indicate the weights used in determining the unique contribution of each factor to the variance in a variable. In solutions using orthogonal rotation they also refer to the correlations between variables and factors (Tabachnick and Fidell, 2001). As a principle (a rule of thumb), the cut-off point is set at 0.30, as a result of which some items relating to living standard and facilities are eliminated.

Thus, by eliminating them, the risk of biasing the results through repetitive measurement is reduced. Factor loading scores are also used to determine the weights corresponding to each selected measure, in other words, the relative importance that respondents attach to each perceived item of necessity. The extracted factors and variables contributing to each factor are presented below (Table: 5.3) in association with the size of loading scores.

The respondents seem more inclined to conceive deprivation in terms of a lack of living standard pertaining to a fulfillment of basic needs. The significance of each factor was established by looking at the percentage of variation explained by it. As shown in Table: 5.3, three factors proved almost equally significant in terms of the amount of variance they explained. However, the distribution of their total means seemed to indicate a slight order to the way in which each dimension was valued; the general living standard came first, basic

facilities second, and public services last. This may suggest that respondents are rather rational in their judgments as to how these dimensions/ necessities should be prioritised.

These results are reliable on two grounds. Firstly, the factor solutions obtained from numerous trials proved rather stable across different extraction and rotation methods[33]. Secondly, the variables meaningfully loaded on to each extracted factor.

Table: 5.3 Order (by size of loadings) in which variables contribute to factors

Factor	**I. General Living Standards**	**II. Public Services**	**III. Basic Facilities**
Variables Retained	Clothing (0.784) Housing (0.744) Food consumption (0.730) Family health care (0.718)	Health (0.004) Education (0.200)	Post Office (0.82) Telephone (0.110)
Variables Eliminated	Children's' schooling (0.274) Income (0.309)		Drinking water (0.150) Electricity (0.128) Road (0.420)
Variance	2.11	1.00	1.29
Means	6.80	4.24	4.36

Extraction Method: Principal Component Analysis

Rotation Method: Varimax

Figure in the parenthesis are the respective weights.

[33] Measures of appropriateness of Factor Analysis; KMO measure of sampling adequacy is 0.725.

In the process of factor analysis, one useful comparison is to examine the correlation between the deprivation index and its various components (Table: 5.4). The table below shows that all components are positively (significantly) correlated with the deprivation score and most components are closely and positively correlated with each other. At the same time the strengths of the correlation differs considerably.

Table: 5.4 Correlation Coefficient between Deprivation Index and its components

	DI	FC	Housing	Clothing	FHC	Health	Education	Post office	Tele phone
DI	1								
FC	0.550**	1.000							
Housing	0.604**	0.412**	1.000						
Clothing	0.600**	0.471**	0.477**	1.000					
FHC	0.568**	0.347**	0.424**	0.442**	1.000				
Health	0.511**	0.044**	0.093**	0.080**	0.104**	1.000			
Education	0.512**	0.026	0.062**	0.054**	0.035*	0.269**	1.000		
Post office	0.417**	0.064**	0.100**	0.074**	0.092**	0.179**	0.216**	1.000	
Telephone	0.347**	0.002	0.034*	0.008	0.046**	0.111**	0.152**	0.414**	1.000

** Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

Similarly, to validate the results of this analysis, a split-half validation was conducted to ensure the stability and generalisation of the model. While the communalities differ for two models, in all cases they are above 0.50, indicating that the factor model is explaining more than half variance in all of the original variables.

5.3.1.2 Regression Models

Analysis of the determinant of poverty can be done with regression based on the multi-topic household survey data. For the multi-variates analysis of the determinant of poverty, two distinct and alternative approaches of econometric tools were used in the study. These are the deprivation index and income regression model. Detailed methodology for the study follows the empirical studies of Ravillion (1996) and Deaton (1997).

The regression analysis was conducted to study the level of deprivation with a host of explanatory variables at the household level. A subsequent income regression was performed to enable a comparative study on the determinants of poverty between the level of deprivation and income. First, an attempt to analyse the Deprivation Index (DI) was based on significant numbers of quantitative and qualitative variables. Henceforth, the focus was entrusted mainly to household level deprivation represented by the first model here.

The regression models assessing the determinants of deprivation and poverty simultaneously provide inferences to be made as to the direction and strength of casualty between the dependent and explanatory variables. This was achieved by controlling the effect of the dependent variable of the other relevant explanatory variables in the equation. That is, one holds the value of the other explanatory variables constant whilst isolating the effect of one explanatory variable on the dependent variable. Thus the explanatory variables in this model are termed determinants because the dependent variable is a function of the explanatory variables and is therefore determined by them.

Deprivation Index

$$DI = \beta X_i + D_i + \eta_i \qquad \text{(ii)}$$

Income Regression

$$\ln W_i = \beta X_i + D_i + \eta_i \qquad \text{(iii)}$$

Where as,

DI is Deprivation Index

lnWi is natural log of nominal per capita income divided by the national poverty line

β is parameter of the exogenous variables.

Xi is the set of exogenous household characteristics or determinants of poverty

Di is dummy variables

η is random error term

The Deprivation Index (DI) in its core form is a normalised indicator derived at the household level whereas the income regression model, the logarithm of nominal income (*ln Wi*), are basically used as dependent variables. A unitary value for *Wi* signifies that the household has its level of income exactly at the level of poverty line. The given probabilistic relationship has the log-linear functional form. Marginal change and elasticity are not constant at various levels of the independent variable. Coefficients from the regression analysis describe the most significant determinants of household level deprivation or income, or the incidence of poverty. Since the dependent variable is in a natural log form the estimated regression coefficients measure the percentage change in income (in relation to the poverty line) within the household, from a unit change in the independent variable.

The given table (Table: 5.5) identifies the dependent variables along with the explanatory variable used in the present study. It consists of some continuous and some dummy variables from the household characteristics explanatory variables. Here, the study used a comprehensive list of explanatory variables.

By and large, household demographics, occupation, the education level of the head of the household, and land ownership, are important correlates of household level deprivation and

poverty even in a multi-variate framework, especially in a developing country setting. Empirical literatures have already established this unique relationship in several Asian and African countries. The regressions also help clarify the links between the gender of the head of the household and poverty. As expected, the regressions are particularly useful in measuring the effect of the location of the household on the level of deprivation, and that of location-specific factors related to basic services, infrastructure, and market access.

The sign and magnitude of the coefficients signifies the level and degree of determinants of deprivation and poverty. As per different characteristics of the poor, deprivation and poverty levels are not only limited to economic issues. The economic definition of deprivation and poverty has to be linked with the broader spectrum of socio-economic parameters. This analysis however does not explicitly consider the casual relationships between deprivation and income with the socio-economic and demographic variables. Here, a description of the variables is worth noting.

In the first regression case, the dependent variable was identified as the Deprivation Index based on the composition of the subjective index of deprivation at the household level. The second dependent variable in this line was the Income Regression Model based on normalised indicators derived as the natural log of per capita income divided by the national poverty line. However, the explanatory variables for both models were the same. Here, the objective was to analyse the deprivation index amongst different explanatory variables identified at the household levels and seek for its correlation with a host of explanatory variables.

The choices of the explanatory variable (Table: 5.5) for analysing key determinants of poverty was based on the empirical application of the variables and the findings of relevant developing country studies, (Lanjouw and Ravallion, 1995; Deaton and Paxton, 1998; Geda, et. al, 2005; De Silva, 2008). These variables ranged from household demographics to different other socio-economic and physical characteristics because they were considered to be important determinants of deprivation and or poverty. Similarly, the selection of explanatory variables for the model was also influenced by the National Living Standards

specific survey studies that was recently conducted in developing countries like Sri Lanka (De Silva, 2008), Bangladesh (Kotikula, et. al 2007), Mozambique (IFPRI, 2000) and South Africa (Klasen, 2000) etc.

In the present study, some important quantitative variables along with the qualitative or dichotomous variables were included as explanatory variables. From the stand point of econometric purity, the set of independent variables used in this study were fairly generous. However, the argument for exogenity was stronger, especially in a short time horizon model as such (De Silva, 2008). All the results and estimations of regression analysis were obtained by using the E-Views 5 statistical software.

From the level of household demography the expectation was for a positive relationship between the age of the households' head, household size, number of children, and the level of deprivation and poverty. On the contrary, the sex of the households head was assumed to have a negative relationship.

The occupational status (agri-labour, services and professionals categories) and the educational status (primary, secondary and tertiary) were based on the unique assumption that human capital contributes negatively to the probability of being in deprivation/poverty. However, households involved in agri-labour are supposed to be positively related to the level of deprivation/poverty as against the negative signs for other occupational related variables/coefficients (services, professional).

Similarly, amongst the key explanatory variables depicting successive housing characteristics and amenities, access to drinking water and the status of toilet and sanitation facilities contributed negatively to the level of deprivation, whereas status of loan acquisition was assumed to have a positive correlation.

Table: 5.5 List of Variables for Regression Analysis

Variables	Definitions	Symbol	Mean	S.E.	Type
Dependent Variables					
Deprivation Index	Subjective Deprivation Index	DI	0.0	3.341	
Income Poverty	Normalized poverty line income	lnWi	9.08	2.237	
Explanatory Variables					
Household size		HSIZE	5.504	2.639	C
Household size square		HSQR	2271.48	1390.85	C
Age of Household head (years)		AGEH	45.488	14.226	C
Age Square		ASQR	37.256	43.689	C
Age Dependency Ratio	% of family member below 15 and above 65 years in the household	ADR	0.467	0.313	C
Access to Facilities (in hours)	Average time spend to reach basic facilities and infrastructures.	ATF	3.098	11.790	C
Education of Household head (Primary)	= 1 If household head has primary level of education =0 otherwise	PRIMARY	0.067	0.251	D1
Education of Household head (Secondary)	= 1 If household head has secondary level of education =0 otherwise	SECONDARY	0.043	0.204	R
Education of Household head (Tertiary)	= 1 If household head has tertiary level of education =0 otherwise	TERTIARY	0.012	0.108	D2
Sex of Household head	= 1 If household head is female =0 otherwise	SEXHH	0.192	0.394	D3
Area of Residence (Rural/Urban)	= 1 If the household is Rural =0 otherwise	GEOLOC	0.721	0.449	D4
Land holdings status	= 1 If household owns land =0 otherwise	LAND	0.726	0.446	D5
State of Financial Burden	= 1 If household is in debt =0 other wise	LOAN	0.649	0.477	D6
Sources of Drinking Water	= 1 If household has access to potable drinking water =0 other wise	DW	0.498	0.500	D7
Livestock ownership status	= 1 If household owns livestock =0 other wise	LIVESTOC	0.730	0.444	D8
Toilet facilities	= 1 If household has own toilet facility =0 other wise	TOILET	0.460	0.498	D9
Occupation specific(1)	= 1 If household main occupation is service =0 Otherwise	SERVICE	0.038	0.190	R
Occupation specific(2)	= 1 If household is in professionals and experts jobs =0 Otherwise	PROFESSIONAL	0.027	0.163	D10
Occupation specific(3)	= 1 If household is involved in agriculture/labour =0 Otherwise	AGRILABOUR	0.794	0.405	D11
Ethnicity	= 1 If household is of deprived/disadvantage groups =0 other wise	ETHN	0.847	0.360	D12

Note: C is Continuous variables, D is Dummy variables and R is reference group.

One of the explanatory variables introduced in the present model is related to access to facilities. That is, this variable measures the average time taken by households to reach basic facilities and services like market places, schools, health posts, post office, and communication centres, etc. The poverty literatures have already identified geographical disadvantage as a leading characteristic amongst the poor in developing countries (CBS, 2005 and Kotikula, et. all, 2007). Here, an attempt was made to assess the level of deprivation/poverty as explained by this contributing variable.

The dummies omitted define a reference household, which is characterised as the head of the household having secondary education, a male head of household, a household situated in an urban location, a household who are landless, without any financial burdens, which lacked access to potable drinking water, have no livestock, no toilet facilities, including those household heads involved in services and those representing none deprived/disadvantage groups.

5.4 Interpretation of Results

By analysing the results of the model, the test statistics which are based on the expected signs and appropriate coefficients of each individual variable depict that the majority of variables are important determinants of deprivation (as well as poverty) for the country. Most of the indicators/variables possess both the expected signs and the appropriate coefficients while explaining the level of deprivation for Nepal. Naturally enough, the size of the coefficients associated with these regressors varies accordingly.

The key explanatory variables for the deprivation index are the age of the households, sex of the households, access to drinking water, access to toilet, access to (basic) facilities, household location characteristics (rural/urban), educational level, and occupation of head of households, status of livestock ownership and financial burdens of the household. The results of the regression show that these are the most common factors strongly associated with

deprivation/poverty. This is further evidenced by the empirical findings of the ongoing literatures on deprivation and poverty. The regressors constitute of both the quantitative and qualitative variables. The quantitative variable is also known as the covariate. An independent explanation of the differential intercept coefficients of these significant variables as depicted by the test statistics is worth mentioning.

Beginning with some of the universal determinants of deprivation and/or poverty, a household headed by aged (either younger or older) person and female heads is highly deprived and poor (Geda, et. al, 2005) (De Silva, 2008). The result of those households headed by a female member and their level of deprivation (0.77%) after holding other variables constant, which is seemingly higher, is relevant in the context of the country.

Poverty also has a strong location aspect. A household situated in a rural area is commonly deprived. Being located in remote places (districts and regions) is generally found to be disadvantageous for a household, even after controlling for the level of household attributes. The results of the regression show that other factors being constant across the country, we can approximate the differential between geographical areas (rural/urban), and the rate of deprivation is very high (0.74%) in rural areas.

Access to basic services and facilities like potable drinking water and toilets (latrine)[34] are also some conventional indicators of living standard (Klasen, 2000). Access to clean water is likely to be valued in its own right. There is some evidence that households (especially women) spend hours fetching potable water. This apparent loss of time and energy indicates a high level of deprivation. On the other hand, lack of access to potable dinking water has several health consequences. Water borne diseases are highly prevalent in developing countries and affect the general health and labouring capacity of the population, keeping them at a disadvantage. In this aspect, other factors remaining constant, the households who have access to potable drinking water facilities are likely to be deprived as low as by 0.43%.

[34] In a typical term Toilet is often refers to as latrine.

Similarly, sanitation as an indicator of deprivation/poverty has its own significance and elementary values with its impact on health and maintaining a general living standard. Households with sanitation facilities, i.e. toilets, are completely non-deprived.

Education is the most important aspect of well-being. The educational attainment of the head of household is an important indicator of deprivation/poverty. The level of education is an important factor associated with deprivation/poverty. The majority of multiple deprivation indices constitute the education domain as one of the important indicators of deprivation (Shahateet, 2007). In the present model, all three common levels of education amongst households (primary, secondary and tertiary) are important indicators from the deprivation/poverty trends point of view. Both the primary and secondary levels of education are extremely important, as depicted by its appropriate coefficients and highly significant variable. Households who do not have up to primary (0.24%) and secondary levels of education (0.79%) are likely to be highly deprived. Here, by holding other variables constant, the role of secondary education is deemed vital in explaining the increasing level of deprivation at the households level.

The rate of deprivation and/or poverty level is positively associated with the status of the financial burden of the household. The empirical literatures have already established a positive association between the level and degree of financial burden a household is in, and poverty. A poor household is usually in debt because it is assumed there will always be a financial scarcity so they rely on several formal and informal financial sources for debt. Other factors remaining constant, among those households who do not have any types of financial burden, their level of deprivation decreases significantly (0.82%).

Amongst different characteristics of poverty in a household, the number of livestock own by them is also related to their state of well-being. This is very common in the rural context (Chaudhary, 2003). The livestock ownership status by a household is an important determinant of deprivation/poverty (IFPRI, 2009). The larger the number of livestock a household possesses, the lower the likelihood of being in poverty. The test statistic for this

particular indicator shows that holding all other variables constant, households with livestock holdings envisage that the deprivation index decreases by as low as 0.51%.

Recently, in the poverty literature, there were growing concerns regarding access to different facilities from its geographical proximate that was conceived as being a significant determinate of deprivation/ poverty. This is also a pertinent case for a developing country like Nepal. In the country context there is real evidence that some people travel for hours and even days to reach a certain destination for a service where as others can reach it within minutes (CBS, 2006). This signifies the existence of a higher degree of deprivation from while explaining spatial differences in economic growth and poverty (World Bank, 2007). This coefficient in terms of hours for accessing the basic facilities is quite nominal.

In a developing country where unemployment rate is very high, and the ability to be employed counts as important indicators of well-being, the level of deprivation is closely associated with the specific category of occupation of the household. Similarly, a household engaged in agricultural activity is commonly perceived as deprived/poor (Dercon, 2003, IFRP, 2000). On the contrary, all these coefficients show relevant signs even though the indicator as a whole is insignificant, as observed by both the deprivation and income models. Other key variables that lie in this category are size of household, ethnicity of head of household, the age dependency ratio, and status of land ownerships.

The large size of coefficients associated with these regressors provides strong evidence while explaining the prevailing levels of deprivation for a country. On the other hand, key demographic variables like the age and sex of the head of households and household size, despite being appropriate and statistically significant; their lower level of coefficients result in a least variability in explaining the deprivation index.

A comparison of the coefficients associated with the deprivation index and income regression models (Table: 5.6) gives a more vivid picture of the determinants of poverty from two different viable aspect. Both regression models depict relevant and expected signs except for a couple of mutually inclusive variables. Some of the signs of the coefficients are

contradictory. This is more pervasive in the case of the latter model. In the case of the income regression model, the coefficients related to the status of rearing livestock, access to facilities, and deprived ethnic group, etc. were beyond expectation. This case for a deprivation index is quite the opposite. Most of the variables possess expected signs in explaining the deprivation rate at the household level irrespective of their level of significance.

In the regression analysis the dependent variable is frequently influenced by the qualitative variables as well. Here, the major influential nominal scale variables are sex, geographical regions, housing characteristics, occupation and education. In both the models, the assessment of overall sign and magnitude of the coefficients depict that the deprivation index model is much better at explaining the key determinates of poverty and/or deprivation than the income regression model. Although the majority of coefficients are significant in the income regression model, their power and degree of explaining the variability by their respective coefficients are much low than the deprivation index.

The results of the regression models should be used as indicative of broad patterns and trends, rather than for the exact numbers resulting from the regression. Future analyses could involve refinements to include more supplementary information. Although the poverty profile and the regression model generated here give some idea of key directions for a poverty reduction strategy, and given the high level of income inequalities in the country, the role of equitable economic growth in poverty reduction must also be considered.

Table: 5.6 Test Statistics of Deprivation Index and Income Regression

Variable	Coefficients	
	Deprivation Index	**Income Regression**
C	-0.787144 (0.521910)	-0.237632 (0.190350)
AGEHHH	0.071718** (0.021028)	0.038371*** (0.007669)
ASQR	-0.000693** (0.000215)	-0.000388*** (7.830000)
HHSIZE	-0.058720 (0.048772)	-0.162312*** (0.017788)
HSQR	0.004401 (0.002859)	0.005495 (0.001042)
AGRILABOUR	-0.180403 (0.135016)	-0.145261 (0.049253)
DW	0.427252*** (0.107345)	0.229474*** (0.039155)
GEOLOC	-0.742068*** (0.146210)	-0.202679*** (0.053350)
LAND	0.320151 (0.137433)	0.182346** (0.050136)
LIVESTOCK	-0.508025*** (0.149971)	0.303390*** (0.054708)
LOAN	-0.821769*** (0.110066)	-0.167992*** (0.040144)
PROFESSIONALS	0.173448 (0.323057)	0.158273 (0.117842)
PRIMARY	0.543626** (0.198546)	0.044120 (0.072401)
TERTIARY	0.761990 (0.468472)	0.254137 (0.172611)
SEXHHH	-0.021881*** (0.129560)	-0.262533*** (0.047269)
TOILET	1.034323*** (0.117778)	0.555598*** (0.042955)
ETHN	-0.014014 (0.141243)	0.084706 (0.051544)
ADR	0.034647 (0.165598)	-0.249427*** (0.060404)
ATF	-0.042217*** (0.004312)	0.007383*** (0.001572)
R-squared	0.146787	0.159223
Adjusted R-squared	0.142842	0.155331
S.E. of regression	3.093536	1.128032
Sum squared resid	37255.87	4948.581
Log likelihood	-9959.244	-6006.503
F-statistic	37.20854	40.91562
Prob(F-statistic)	0.000000	0.000000
Mean dependent var	-1.82E-05	0.229460
S.D. dependent var	3.341372	1.227377
Akaike info criterion	5.101352	3.083676
Schwarz criterion	5.131813	3.114163
Hannan-Quinn criter.	5.112162	3.094496
Durbin-Watson stat	1.669038	1.860097
N	3912	3908

Notes: Figures in the parenthesis are standard errors.
(, **, ***) indicates that coefficients are significant at 10%, 5% and 1% level respectively.*

Here, the regression analysis was based on a considerable number of dummy variables although theoretically, there are limitations in econometric analysis on the use and choice of them. There are also equal chances of falling into the dummy variable trap. Intuitively, the dummy variables simply point out any existing differences but they do not suggest the reasons for them (Gujarati, 2003).

Both regression analyses depicted a low level of R^2 i.e. the coefficient of determination explains only about 15% variations in the deprivation index. In the regression analysis, literatures show that such a low R^2 value (0.14678) is typically observed in cross-sectional data with a large number of observations (Gujarati, 2003). Apparently, a low R^2 value can also be statistically significant (i.e. different from zero). In the given model also, the R^2 value is statistically significant, since the computed F value of about 37.20 is highly significant, as its p value is almost zero i.e. the F statistics tests the hypothesis that all the slope coefficients are simultaneously zero; that is, all the explanatory variables jointly have no impact on the regressand.

One of the probable consequences of the use of cross sectional data is the presence of multi-collinearity. This is the state where data variables are highly correlated. However, the correlation coefficients among the explanatory variables (Annex Table: 12) show a low level of correlation among them, coupled with lower R^2 and a higher number of significant coefficients. This may be due to the data source which is employed here and that is not specifically designed for undertaking the deprivation analysis. However, in the given models, the test statistics signifies a lower chance of the presence of multi-collinearity among the explanatory variables. However, as a rule of thumb, the high Durbin-Watson d value in both the models which is approximately 2 implies the presence of possible autocorrelation of specification errors for the model. Similarly, the high level of Akaike and Schwarz statics depict that how they penalize for introducing more regressors in the model.

5.5 Conclusions

The specified model for deprivation study was developed and analysed in a series of ways. First, the Factor Weighted Deprivation Index was constructed based on the subjective dimensions of formulating a Deprivation Index. The index constitutes households' standard of living, access and utilisation of public services and basic facilities. The sensitivity test was performed by constructing a core deprivation index which contained a total of thirteen components that were attributed into three major domains.

As a prior, the choice of the number of factors mainly depends on the nature of the survey data. And the respondents seemed more inclined to conceive deprivation in terms of the lack of living standard which was entirely related to the fulfillments of basic needs. All these components were significantly correlated with the deprivation score and most of the components were closely and positively correlated with each other.

As per undertaking the multi-variate analysis of the determinant of poverty, the deprivation index and income regression models were run simultaneously. Both the analysis was based on the significant numbers of quantitative and qualitative variables, which were a combination of some continuous and some dummy variables from the household characteristics explanatory variables. These variables ranged from household demographics to other socio-economic and physical characteristics that were being utilised empirically. Both the models depended on the same explanatory variables.

By analysing the results of the model, the test statistics depicted that the majority of variables were important determinants of deprivation/poverty. Amongst the array of demographic and socio-economic variables, and as per the expectations, different signs of the coefficients resembled those specific characteristics mostly relevant to that of a developing country.

These explanatory variables revealed that the coefficients of demographic variables: age and sex of the household heads, household size, and socio-economic variables, occupation status (agri-labour) including basic services and amenities (access to facilities) were negative,

whereas the education level of households (primary and tertiary), occupational status (professionals) and other basic services and amenities (land holding status, drinking water and toilet facilities) were positive. Amongst the listing of coefficients, some unexpected signs were also observed for a few of the demographic and social variables (land holding status, age dependency ratio, drinking water and sanitation facility etc.) compared to their ensuing relation to household level deprivation or poverty.

The majority of the explanatory variables used here that explain the deprivation index, e.g. rural/urban, land ownership status, access to potable drinking water, livestock ownership status, state of financial burden, level of education (primary and secondary) were observed as not only important determinants explaining the level of deprivation/poverty, but also highly significant variables for the given model. All these variables possess appropriate coefficients enabling a higher degree of explanation for the deprivation index. On the contrary, despite revealing an expected sign by the coefficients, a few of these variables were insignificant. In other words, a few of the variables have correct signs but are statistically insignificant whereas some are statistically significant but do not resemble the appropriate signs expected.

The overall results showed positive and expected signs and magnitude of the coefficients signifying a high level and degree of determinants of deprivation and poverty. Amongst the series of variables, age, gender and place of residence including educational and professional status were important indicators of deprivation/poverty universally. The test statistics also supported these findings, thus enabling a valid analysis for the given model.

Chapter-VI

Findings and Discussion

This chapter is the outcome of a review of secondary data on poverty and inequality, a review of relevant literatures on poverty and the deprivation index, and undertaking a deprivation analysis of the survey data. The preliminary section 6.1 interprets and summarises the key findings, whereas the subsequent section 6.2 draws attention to the poverty and inequality issues regarding the income distribution structure of Nepal during the post-reform period, and on the basis of the second phase of survey of Nepalese living standards.

6.1 Key Findings

The time series analysis on the incidence of poverty in Nepal demonstrates that levels of poverty were lower in post-reform, vis-à-vis pre-reform periods. In the pre-reform period the poverty rate as measured by the head count ratio was 42% whereas this is now substantially lower at 31% at present. In terms of validating this poverty rate, even after applying a series of different poverty measures, it also results in the same rate of poverty incidence at the national level.

On the other hand, income inequality shows opposite trends. The measurement of Gini coefficients based on per capita income increased from 0.24 points during the pre-reform period to 0.37 at the present post-reform period. The level of differences in inequality in urban areas is significantly higher than rural areas.

Although there is a plethora of studies that suggest ‘deprivation’ as an important element of poverty, deprivation related analysis is lagging behind in Nepal. This research study therefore addresses the gap in literature on poverty in Nepal by drawing on deprivation studies carried out in other developing countries and relating them to the context of Nepal. The results of this study are discussed below.

Here, the deprivation index is envisioned in the form of a lack of living standards pertaining to the fulfillment of basic needs because the nature of poverty/deprivation for the country still revolves within this periphery. This implies that the poverty level is still comparatively higher with its absolute and chronic in nature.

The poverty profiles drawn here, supplemented by the multi-variate analysis of poverty determinants, identify the household and location/geographic attributes most closely associated with deprivation. The key proximate determinants of poverty are age and sex of the head of households, place of residence, lack of access to basic amenities and services, livestock ownership status, status of financial burden in the households, level of education, professions, and access to basic services and facilities. All of these variables comply with the empirical studies based on the poverty studies of the relevant developing countries.

Deprivation level is positively associated with age and gender of households head. The older this person is, and probably female, correlates highly with poverty, which signifies a higher level of deprivation.

Poverty levels are highly concentrated in rural areas. A rural residence is usually deprived in terms of his/her urban counterpart. The household who owns livestock is most likely not to be in poverty, in other words they are amongst the least deprived of the population. The level of deprivation is associated with the level of financial burden among the households. Households' who are indebted are likely to be highly deprived.

Poverty is also correlated with access to basic services and amenities in life. Households' without access to potable drinking water, and toilet and sanitation facilities, are much more prone to poverty. In this sense they are also highly deprived groups. Similarly, households living quite a long way from the prompt reach of basic services and facilities i.e. schools, hospitals, road networks and post office etc. are correlated with poverty and deprivation.

The educational attainment of the head of household, especially at the secondary level, is the most important factor that is associated with poverty and level of deprivation. Education being the most important aspect of well-being, a household with secondary level of schooling is less likely to be poor and deprived as compared to other educational levels. This trend is followed by the primary level of education of households.

Empirically, the size of the land holdings and poverty/deprivation level has negative correlationships. Here, however the findings that land ownership is not a viable determinant of poverty status suggests the importance of not only of improving the quality of land, but also of providing complementary inputs that might enhance productivity.

As an alternative to calculating the total deprivation index based on the average score of all individual components, a rough estimate gives a 48% deprivation level for the country as a whole. This is successively higher than the present incidence of poverty of 31%. This can be the initial evidence to prove that the level of deprivation in Nepal is generally high and very profound.

6.2 Discussion

Poverty profiles in Nepal are an outcome of surveys carried out at different points of time. These surveys do not show any linkage with past surveys except for the NLSS I and NLSS II. So far, only two waves of cross sectional data are available to measure poverty which places limits on an in-depth study so this deprivation study may provide further impetus to the ongoing poverty literature in the country.

Almost all the surveys derived poverty on the basis of income as well as consumption data. While some sources adopted the income approach as the official poverty rate, others relied on the consumption approach. Obviously, two approaches yield two different estimates of poverty which is likely to generate issues in choosing the representative one. Nonetheless, this will also influence policy implications in the relevant sector although it postulates a single index of living standards in the case of a deprivation study.

The poverty rates available from different periods are not directly comparable (Chhetry, 2004) because of changes in the level of minimum per capita daily nutritional requirements, the approach to estimating food and non-food poverty lines, and changes in the definition of poor over time. Despite these methodological changes, three poverty rates corresponding to three points of time still exist, which is surprising.

In the process of measuring poverty, every source estimated a fresh poverty line. The methodology adopted to estimate the poverty line varied from one source to another. For instance, even the basic component of the poverty line, namely the per capita daily calorie requirement for survival, varied from one source to another.

Similarly, studies on income distribution also revealed a large inter-survey variation. This was also due to the treatment of income in terms of household income in one survey and per capita income in another. As households with higher levels of income also tend to have smaller families, the distribution of income on a per capita basis tends to be more even than on a household basis.

People still perceived unmet basic needs as growing lapses in their general living standards. Poverty and/or deprivation is still dominated by the basic necessities of life. They still prioritise basic necessities, e.g. food, shelter and clothing as vital for maintaining their general living standards. Their perception and conceptualisation of poverty is very conventional. A large part of the population is still engulfed in a vicious circle of poverty, which clearly indicates this widespread poverty problem. Ultimately, the incidence poverty in Nepal is of an absolute and chronic nature.

At the policy and planning levels, deprivation indices have become the principal means by which to identify those areas that can be shown to be objectively poorer, and that people living in these locations have a higher propensity to be poor or excluded. Deprivation indices thus have an important role to play in the consensus-building that allows governments to target particular areas and provide additional support to the people living in these areas.

There are many different approaches to the measurement of deprivation. As per their purpose, the deprivation indices combine several observations from a variety of domains into a single variable. Therefore, the deprivation index and comprehensive social and economic indicators should not be seen as alternatives, but as two complementary elements in developing more effective policies to target poverty and exclusion at local levels.

This study has some limitations, however. First, the concept and measurement of poverty, inequality, and income vary widely according to the methodology adopted by the survey, making data inconsistent. This is clearly shown by empirical studies of poverty.

In the deprivation literatures, while measuring deprivation, the first issue is concerned with the selection of indicators. However, in the present model the choice of indicator was based entirely on the factor analysis (score).

The deprivation indicator was assumed to be summary statistics of overall living standards, not as key indicators in their own right of specific dimensions of poverty. However, what is important in the factor analytical approach is the degree to which indicators correlate to each other and to the unobservable underlying characteristics that we wish to measure, which is generalised deprivation. Deprivation indicators do not stand alone in their own right as measures of specific aspects of poverty, but represent a 'proxy' for overall deprivation.

There are growing arguments that Factor Analysis is not the ultimate solution to the problem because it is not a fully transparent method to group deprivation indicators into a few factors. These shortcomings are indicated as a statistical test that can be used to simply measure the degree of correlation between the set of variables, not as an appropriate structure to describe the correlation itself. There is no unequivocal method or solution to factor analysis. Being completely a data driven technique, while constructing a deprivation index to be monitored through time, there is no certainty that the underlying factor structure remains unchanged and that the same factors are relevant over time.

This research is based on secondary sources of data; there might be some drawbacks regarding sample size pre-specified objectives and toward an attempt to re-utilise it. While growth is relatively easy to define and quantify, the concept of poverty is multi-dimensional and complex. Measurements of poverty based on income and expenditure are clearly inadequate. The concept needs to be broadened to include an array of social indicators.

Poverty is not just due to lack of income but also to lack of access to eminent social variables. The availability of such social services not only directly determines the standard of living but also influences the income earning capacity of individuals.

There is an absence of historical time series data on poverty and income inequality in the country. This virtually limits the analysis of the research and narrows the boundary of research questions and hypothesis. In this context a poverty profile may fill the gap and act as a descriptive tool for giving clues to the underlying determinants of poverty. As we noted, the post reform was associated with a widening income gap among that rural-urban population. Income inequality is substantially higher in urban areas. On the contrary, poverty is significant in rural areas. This also points towards a higher level of deprivation amongst rural populations. So, this interesting but compelling nexus between deprivation/poverty and inequality can become a viable area of study for further exploring and understanding deprivation/poverty dynamics.

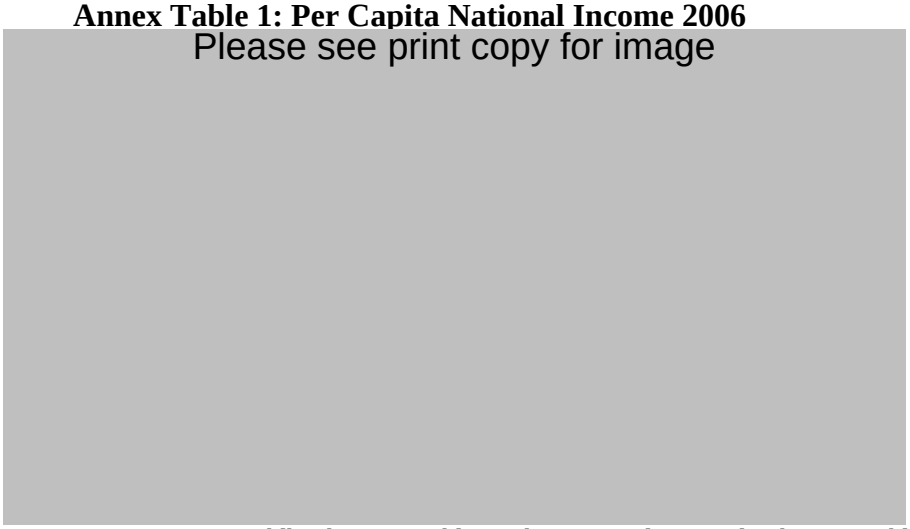
Even at the micro level, the overall deprivation level during the post-reform period was comparatively higher. This was indicated by the two major sources of weighting of the deprivation index. Firstly, by enabling a statistical treatment and secondly, just by averaging the total deprivation score. However, in the absence of continuous data, we are unable to measure the link between reform and deprivation so we chose only a single year to study deprivation, but this will certainly provide some space to assess the nature and scale of deprivation in the country. For a comprehensive analysis of deprivation, further studies should focus on this line between reform and deprivation.

The deprivation study identifies the degree and scale of vulnerability and isolation to poverty/slackness amongst the masses at the grass root level. Such a study helps identify pockets of poor and deprived areas where development intervention can focus on those regions lagging behind that are facilitated at the state level. In this process, a deprivation study is generally geared towards devising effective policies and programs at the national level. In the case of Nepal, a deprivation study can be a viable tool to address the growing incidence of poverty and inequality in the face of typical complexities created by the country's geography, culture, society, and economy. Furthermore, such a technique can bridge the increasing policy, planning and implementation gaps which the country has already experienced from the recent poverty alleviation program.

Appendices

Appendix: 1 List of Annex Tables

Annex Table 1: Per Capita National Income 2006



Source: www.worldbank.org, World Development Indicators database, World Bank.
NA – Not Available

Annex Table 2: Overview of Nepalese GDP (in million US $)

Period	GDP at current prices	Per Capita GNI	Per Capita GDP	Growth rate (%)	Household consumption expenditure	General government final consumption expenditure	Gross capital formation	Exports	Imports	Value added in Agriculture	Value added in Mining	Value added in Manufacturing	Value added in Construction	Value added in Trade and retail
1975	1506	113	111	1.5	1241	114	218	134	201	1039	65	60	53	49
1976	1392	102	100	4.4	1125	104	211	150	197	920	60	55	57	48
1977	1382	99	98	3.0	1095	101	221	163	198	831	64	59	82	51
1978	1629	114	112	4.4	1298	121	290	172	252	959	71	66	110	58
1979	1851	127	125	2.4	1478	157	293	218	296	1114	78	71	130	60
1980	1946	131	128	-2.3	1601	130	356	224	364	1127	86	78	131	74
1981	2212	146	143	8.3	1815	156	390	286	434	1257	94	83	160	77
1982	2340	150	147	3.8	1908	199	401	271	440	1338	105	94	177	81
1983	2321	146	143	-3.0	1888	235	456	238	495	1312	115	100	163	82
1984	2393	146	144	9.7	1936	221	447	255	465	1371	127	110	157	92
1985	2553	152	150	6.1	1972	240	558	294	511	1247	158	138	206	250
1986	2625	153	151	4.6	2109	239	499	306	528	1278	179	153	214	265
1987	2927	168	164	1.7	2326	266	591	346	602	1403	201	171	237	313
1988	3302	185	181	7.7	2680	296	654	374	702	1578	231	198	271	349
1989	3283	179	176	4.3	2581	329	714	364	705	1566	211	179	303	333
1990	3521	188	184	4.6	2939	305	650	371	743	1718	236	203	305	358
1991	3231	168	165	6.4	2624	298	673	382	746	1486	249	212	297	346
1992	3499	177	174	4.1	2841	279	740	560	920	1525	348	300	346	388
1993	3528	174	171	3.8	2744	307	816	637	976	1442	351	301	356	396
1994	4034	195	191	8.2	3119	324	904	963	1275	1631	425	362	397	455
1995	4224	199	195	3.5	3208	391	1064	1023	1462	1649	454	377	445	469
1996	4391	200	198	5.3	3377	406	1200	977	1570	1709	483	396	460	499
1997	4836	216	212	5.3	3730	431	1225	1273	1823	1875	530	428	504	527
1998	4560	199	196	2.9	3507	425	1133	1041	1545	1705	499	409	462	511
1999	5012	217	210	4.5	3883	447	1027	1145	1490	1940	537	445	487	576
2000	5338	226	219	6.1	4050	478	1298	1243	1731	2041	581	472	526	603
2001	5487	229	220	5.6	4124	536	1325	1225	1723	2015	598	474	528	595
2002	5429	222	213	-0.6	4227	544	1312	990	1643	2056	559	421	543	524
2003	5998	239	230	3.3	4669	609	1550	1015	1846	2247	623	451	592	578
2004	6743	261	254	3.8	5212	684	1778	1215	2147	2486	684	497	665	675
2005	7476	281	276	2.7	5784	763	2160	1204	2435	2723	753	550	742	703
2006	8012	270	290	1.9	6309	814	2426	1486	3023	2925	783	574	777	772

Annex Table: 3 GDP, Population growth and Per capita income growth rate

	1997/98	1998/99	1999/00	2000/01	2001/02	9th plan (1997-2001)	10th plan (2002-2007)
GDP	3.3	4.5	6.2	4.8	0.8	3.9	3.4
Pop. Growth Rate	2.2	2.2	2.2	2.2	2.2	2.2	2.0
Per Capita GDP Growth Rate	1.1	2.3	4.0	2.6	-1.4	1.7	1.6

Source: MOF, NPC (2007)

Annex Table: 4 Regional and Sub-regional Poverty in Nepal (1995/96-2003/04)

Source: National Planning Commission (2005 April), Nepal Living Standard Survey Based Poverty Analysis, Summary, Kathmandu: Central Bureau of Statistics, Table 3, P. 5

Annex Table: 5 Sectoral Budget Allocations FY 2003-4 to FY 2007-8 (%)

Sector	FY 2003-4	FY 2004-5	FY 2005-6	FY 2006-7	FY 2007-8
Education	15.2	16.2	16.7	16.0	16.8
Central	0.0	79.8	79.2	78.4	78.3
District	0.0	20.2	20.8	21.6	21.7
Health	5.1	5.9	6.0	6.4	7.2
Central	0.0	92.9	89.3	86.9	79.1
District	0.0	7.1	10.7	13.1	20.9
Local Development	5.9	6.7	6.4	7.8	7.7
Central	0.0	13.8	12.9	10.3	10.4
District	0.0	86.2	87.1	89.7	89.6
Women Children and Social Welfare	0.3	0.3	0.3	0.3	0.3
Central	0.0	65.2	53.1	55.3	59.4
District	0.0	34.8	46.9	44.7	40.6
Water Resources (Central only)	3.4	3.2	3.0	2.9	2.5
Peace and Reconstruction (Central only)	0.0	0.0	0.0	0.0	0.7
Defense (Central only)	7.0	7.2	8.6	7.2	6.5
Total Budget	100.0	100.0	100.0	100.0	100.0

Sources: Red Books, MOF, 2004/5-2007/8

Table: 6 Sectoral Expenditures for FY 2003-4 to FY 2006-7 (%)

Sector	FY 2003-4	FY 2004-5	FY 2005-6	FY 2006-7 ®
Education	16.2	16.8	17.5	17.5
Central	88.6	80.2	80.7	78.7
District	11.4	19.8	19.3	21.3
Health	4.4	4.5	5.2	6.7
Central	92.3	93.4	90.5	87.2
District	7.7	6.6	9.5	12.8
Local Development	6.1	6.3	6.4	7.6
Central	13.7	14.6	14.2	13.1
District	86.3	85.4	85.8	86.9
WCSW	0.3	0.3	0.3	0.2
Central	60.1	69.9	50.8	53.0
District	39.9	30.1	49.2	47.0
Water Resources (Central only)	2.6	2.3	2.7	2.7
Defense (Central only)	9.5	10.7	10.6	8.4
Total Expenditure	100.0	100.0	100.0	100.0

Sources: Red Books, MOF, 2004/5-2007/8

® is revised estimates

Annex Table: 7 Deprivation measures and their corresponding weights

Area of Deprivation	Weights
General Living Standard	
• Clothing	(0.784)
• Housing	(0.744)
• Food consumption	(0.730)
• Family health care	(0.718)
• Childrens' schooling	(0.274)
• Income	(0.309)
Public Services	
• Health	(0.004)
• Education	(0.200)
Basic Facilities	
• Post Office	(0.82)
• Telephone	(0.11))
• Drinking water	(0.150)
• Electricity	(0.128)
• Road	(0.42)

Sources: Author's estimates

Annex Table: 8 OLS estimates of Deprivation

Dependent Variable: DI
Method: Least Squares
Sample: 1 3912
Included observations: 3912

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.787144	0.521910	-1.508197	0.1316
AGEHHH	0.071718**	0.021028	3.410560	0.0007
ASQR	-0.000693**	0.000215	-3.229162	0.0013
HHSIZE	-0.058720	0.048772	-1.203969	0.2287
HSQR	0.004401	0.002859	1.539605	0.1237
AGRILABOUR	-0.180403	0.135016	-1.336157	0.1816
DW	0.427252***	0.107345	3.980185	0.0001
GEOLOC	-0.742068***	0.146210	-5.075372	0.0000
LAND	0.320151	0.137433	2.329501	0.0199
LIVESTOCK	-0.508025***	0.149971	-3.387483	0.0007
LOAN	-0.821769***	0.110066	-7.466164	0.0000
PROFESSIONALS	0.173448	0.323057	0.536895	0.5914
PRIMARY	0.543626**	0.198546	2.738041	0.0062
TERTIARY	0.761990	0.468472	1.626542	0.1039
SEXHHH	-0.021881	0.129560	-0.168884	0.8659
TOILET	1.034323***	0.117778	8.781935	0.0000
ETHN	-0.014014	0.141243	-0.099216	0.9210
ADR	0.034647	0.165598	0.209221	0.8343
ATF	-0.042217***	0.004312	-9.791193	0.0000

R-squared	0.146787	Mean dependent var	-1.82E-05
Adjusted R-squared	0.142842	S.D. dependent var	3.341372
S.E. of regression	3.093536	Akaike info criterion	5.101352
Sum squared resid	37255.87	Schwarz criterion	5.131813
Log likelihood	-9959.244	Hannan-Quinn criter.	5.112162
F-statistic	37.20854	Durbin-Watson stat	1.669038
Prob(F-statistic)	0.000000		

Note: (, **, ***) indicates that coefficients are significant at 10%, 5% and 1% level respectively.*

AGEHHH – Age of the Households head
ASQR – Age square
HHSIZE – Household size
HSQR – Household size square
DW – Drinking water
GEOLOC – Geographical Location
SEXHHH – Sex of the Household head
ETHN – Ethnicity
ADR – Age Dependency Ratio
ATF – Access to Facilities

Annex Table: 9 Income Regression Model

Dependent Variable: lnWi
Method: Least Squares
Sample: 1 3912
Included observations: 3908

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.237632	0.190350	-1.248399	0.2120
AGEHHH	0.038371***	0.007669	5.003700	0.0000
ASQR	-0.000388***	7.830000	-4.953270	0.0000
HHSIZE	-0.162312***	0.017788	-9.124563	0.0000
HSQR	0.005495***	0.001042	5.271655	0.0000
AGRILABOUR	-0.145261**	0.049253	-2.949271	0.0032
DW	0.229474***	0.039155	5.860594	0.0000
GEOLOC	-0.202679***	0.053350	-3.799015	0.0001
LAND	0.182346**	0.050136	3.637028	0.0003
LIVESTOCK	0.303390***	0.054708	5.545600	0.0000
LOAN	-0.167992***	0.040144	-4.184688	0.0000
PROFESSIONALS	0.158273	0.117842	1.343092	0.1793
PRIMARY	0.044120	0.072401	0.609387	0.5423
TERTIARY	0.254137	0.172611	1.472310	0.1410
SEXHHH	-0.262533***	0.047269	-5.554035	0.0000
TOILET	0.555598***	0.042955	12.93432	0.0000
ETHN	0.084706	0.051544	1.643369	0.1004
ADR	-0.249427***	0.060404	-4.129337	0.0000
ATF	0.007383***	0.001572	4.695789	0.0000
R-squared	0.159223	Mean dependent var		0.229460
Adjusted R-squared	0.155331	S.D. dependent var		1.227377
S.E. of regression	1.128032	Akaike info criterion		3.083676
Sum squared resid	4948.581	Schwarz criterion		3.114163
Log likelihood	-6006.503	Hannan-Quinn criter.		3.094496
F-statistic	40.91562	Durbin-Watson stat		1.860097
Prob(F-statistic)	0.000000			

Note: (, **, ***) indicates that coefficients are significant at 10%, 5% and 1% level respectively.*

AGEHHH – Age of the Households head
ASQR – Age square
HHSIZE – Household size
HSQR – Household size square
DW – Drinking water
GEOLOC – Geographical Location
SEXHHH – Sex of the Household head
ETHN – Ethnicity
ADR – Age Dependency Ratio
ATF – Access to Facilities

Annex Table: 10 Correlation Coefficients among the Variables

	SEXHH	AGEHH	ASQR	HHSIZE	HSQR	GEOLOC	LAND	DW	TOILET	LOAN	LIVESTOCK	PRI	SEC	TERT	SERV	PROFF	AGRI	ETHN	ADR	ATF
SEXHHH	1.000																			
AGEHHH	-0.072	1.000																		
ASQR	-0.059	0.985	1.000																	
HHSIZE	-0.200	0.128	0.093	1.000																
HSQR	-0.147	0.144	0.121	0.912	1.000															
GEOLOC	0.018	0.020	0.018	0.123	0.099	1.000														
LAND	0.008	0.107	0.099	0.156	0.117	0.436	1.000													
DW	0.051	0.015	0.022	-0.151	-0.131	-0.261	-0.068	1.000												
TOILET	-0.017	0.053	0.053	-0.082	-0.080	-0.451	-0.219	0.328	1.000											
LOAN	-0.027	-0.048	-0.064	0.127	0.085	0.261	0.160	-0.096	-0.181	1.000										
LIVESTOCK	-0.026	0.070	0.057	0.188	0.131	0.542	0.551	-0.172	-0.329	0.240	1.000									
PRI	-0.007	-0.071	-0.065	0.023	0.028	-0.039	0.007	-0.017	-0.001	-0.005	-0.014	1.000								
SEC	0.033	-0.020	-0.020	-0.066	-0.052	-0.144	-0.106	0.036	0.095	-0.061	-0.151	-0.057	1.000							
TERTIARY	-0.005	-0.013	-0.012	-0.015	-0.010	-0.133	-0.087	0.057	0.094	-0.059	-0.126	-0.029	-0.023	1.000						
SERV	-0.032	0.007	0.005	-0.031	-0.022	-0.225	-0.171	0.061	0.165	-0.071	-0.229	0.027	0.162	0.128	1.000					
PROFF	-0.022	0.005	0.003	-0.038	-0.028	-0.112	-0.080	0.049	0.084	-0.034	-0.117	-0.014	0.026	0.127	-0.033	1.000				
AGRI	-0.054	-0.012	-0.017	0.084	0.057	0.250	0.175	-0.121	-0.191	0.103	0.244	0.019	-0.124	-0.132	-0.388	-0.329	1.000			
ETHN	0.040	-0.003	-0.003	-0.097	-0.087	-0.067	-0.007	0.138	0.169	0.012	-0.009	-0.002	0.031	0.013	0.039	0.010	-0.034	1.000		
ADR	0.037	-0.230	-0.238	0.012	-0.055	0.055	0.025	-0.025	-0.060	0.066	0.076	0.037	-0.041	0.012	-0.010	-0.021	0.025	-0.034	1.000	
ATF	-0.020	-0.026	-0.028	-0.041	-0.034	0.145	0.137	-0.036	-0.119	-0.044	0.102	-0.003	-0.034	-0.025	-0.038	-0.036	0.058	0.044	-0.028	1.000

Sources: Author's estimates

Appendix: 2 On the Survey Data

1. **Employment, Income Distribution and Consumption Patterns 1977**, basically know as NPC survey is the first macro level survey conducted by the National Planning Commission (NPC) that comprises of 4040 rural households (0.19% of rural households) and 940 urban (0.82% of urban households).

   The survey indicated clear disparities between rural and urban sectors with poverty incidences in rural areas higher than in urban areas by 60 percent and 119 percent as measured by subsistence consumption criterion and subsistence income criterion, respectively. Similarly, poverty incidences by development regions were also estimated according to which the Western and Far-Western urban and rural areas of Nepal appeared significantly worse off than their respective urban and rural counterparts in the other development regions. In almost all cases, the worst poverty incidences were seen in the Far-Western region.

2. **Nepal Multipurpose Household Budget Survey 1984 (MPHBS)**, a nation wide Survey by the Central Bank includes 5323 households. The poverty incidence was estimated to be 41.4 percent nationally and looking at it by ecological zones, it was the highest in the Hills (50 percent), followed by the Mountains (44 percent), and the Terai (35 percent). As in the case of the 1976/77 study, the rural poverty incidence was much higher than the urban poverty incidence. Within rural areas, the variation in poverty incidence across ecological zones was wide.

3. **Nepal Rural Credit Survey** (NRCS-CBS) was conducted in 1991. Based on this data set and the Population Census 1991 and the Agricultural Census 1991, household levels of income and expenditure were estimated. Using the household income and consumption data, the rural poverty incidence was estimated to be 34 percent in the Terai, 64 percent in the Hills and 64 percent in the Mountain. The study indicated that even though poverty incidence was higher among the landless and small farmers, it was not limited to them.

4. **Nepal Living Standards Survey Phase One and Two (NLSS I and II) 1996and2004**

   Data shows that in 1995/96, 44% of the rural population was living in poverty. Poverty was significantly lower, only 23%, in urban areas. Indeed in the Kathmandu Valley, (where the vast majority of the population falls in the upper quintiles of the national income and consumption distribution), the poverty rate was only 4%; poverty in other urban areas (excluding the Kathmandu Valley) was about 34%, still significantly lower than the national average (42%) and rural poverty incidence. Judging by the absolute numbers of the poor, the predominantly rural nature of the poverty problem is even more striking. According to the survey data, over 90% of the poor live in rural areas.

   While in 2003-04, about 31% of the population is living below the poverty line. And there are still wide variations in poverty levels based on rural-urban divide, geography, gender, and ethnic groups and occupational castes. About the incidence of poverty in Rural and Urban areas, 35% of rural and 10% of urban people are still living below the poverty line.

5. **Small Area Estimation Survey of Poverty, Caloric Intake and malnutrition in Nepal (CBS, WFP and The World Bank, 2006)** is the most recent study in the field of poverty estimates. Small Area Estimation (SAE) has explored techniques that address the problem of lack of local data on poverty and inequality. This approach combines survey and census data to estimate consumption-based welfare indicators for small geographic areas such as provinces and communes, which can be presented in the form of a poverty map.

   SAE techniques can be used to estimate not only consumption poverty rates at the local level, but also other indicators of deprivation. In Nepal the application of these methods has been extended to measures of under-nourishment and child malnutrition, alongside poverty. Three measures of poverty have been calculated at the district and illaka (area) level, representing the incidence of poverty (percentage of the population below the national poverty line); the poverty gap (average distance below the poverty line) and the poverty severity measure (average squared distance below the poverty line). All poverty measures are calculated by comparing predicted per capita consumption (adjusted for spatial price variation) against the national poverty line for Nepal of 7,696 rupees per year in average 2003 Nepalese rupees.

The Nepal poverty mapping work constitutes of two major sources of data. They are the NLSS- II and Population Census 2001.The sample surveys are, at best, representative only at the level of regions and cannot yield reliable estimates at the area, or even district, level. Following the SAE methodology, the poverty estimates are generally quite close between NLSS II and SAE, indicating that at this level of spatial aggregation the census-based estimates mirror the survey based estimates.

One of the attractions of the SAE methodology implemented here is that estimates of poverty are produced at the local level, based on exactly the same concept of deprivation as the one that underpins the survey-based national estimates.

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