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Practices of Poverty Measurement and Poverty Profile of Nepal

Devendra Chhetry

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# Practices of Poverty Measurement and Poverty Profile of Nepal

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# FOREWORD

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# ACRONYMS

BNI	Basic Needs Income
CBS	Central Bureau of Statistics
CPI	consumer price index
GDP	gross domestic product
HS	Household Survey
IMR	infant mortality rate
NA	National Accounts
NLSS	Nepal Living Standard Survey
NPC	National Planning Commission
NRB	Nepal Rastra Bank

# ABSTRACT

This paper reviews the poverty measuring practices, available measures of poverty, and economic growth figures of Nepal. The currently available three poverty rates for fiscal years 1976/77, 1984/85, and 1995/96 are found to be not comparable mainly due to change in methodology over time. Despite such methodological changes, the three poverty rates average around 40 percent. Nepal has experienced relatively high economic growth during the Seventh (1985/ 86 to 1989/90) and the Eighth (1992/93 to 1996/97) Plan periods with no strong evidences of poverty reduction. This incompatible result is partially explained by comparing growth of the agricultural sector with the role of the sector in providing employment and income generation at the household level, and by comparing social indicators particularly literacy rate with the growth of the nonagricultural sector. Large discrepancies have been observed between the microeconomic (per capita household income/consumption) and macroeconomic (per capita GDP/private consumption) indicators, suggesting weak linkages between macro and micro economic development.

#### I. INTRODUCTION

This paper investigates the several problems that persist in the measurement of poverty, especially income poverty, in Nepal. Two problems, namely the comparability and internal consistency of both poverty lines as well as poverty estimates (Asra and Francisco 2001), are the major concern of investigation of this paper for numerous reasons. First, in the absence of precise scientific methods for measuring income poverty—more specifically, for setting absolute poverty lines—Nepal has used different methods to estimate poverty. Such practices definitely create problems while comparing poverty rates over time. Second, the growing discrepancies (or inconsistencies) between the National Accounts (NA) and Household Survey (HS) statistics over time in many countries, especially in India, have raised controversy about the poverty counts and the relationship between economic growth and poverty reduction (Bhalla 2000, Deaton 2001).

After providing a summary of poverty issues in Section II, this paper reviews the statistical system of Nepal and various data sources pertinent to three dimensions of poverty—income, health, and education—in Section III. The practices of measuring poverty based on income-consumption household survey data in fiscal years 1976/77, 1984/85, and 1995/96 are reviewed in Section IV. The temporal change in income inequality is examined in Section VI. Several macroeconomic indicators<sup>1</sup> and microeconomic indicators<sup>2</sup> available for two time points (1984/85 and 1995/96) are compared in Section VI. Some measures of nonincome poverty—more specifically, infant mortality rate and gross enrollment ratio—together with their measuring issues are reviewed in Section VII.

This paper also examines the linkages between economic growth and poverty reduction. After the economic reforms initiated in 1985/86 and accelerated after political liberalization in 1990, Nepal has achieved relatively high economic growth without any evidences of reduction in poverty. The coexistence of relatively high economic growth without any evidence of reduction in poverty is tackled in Section VIII by comparing the socioeconomic indicators available from household surveys with sectoral economic growth. This issue has also been tackled (Chhetry 2002) by comparing rural/ urban growth in per capita income, concluding that economic growth was mainly concentrated in urban areas.

<sup>&</sup>lt;sup>1</sup> Per capita private consumption, per capita gross domestic product (GDP), per capita agricultural GDP, and share of agriculture GDP to total GDP available from national accounts.

<sup>&</sup>lt;sup>2</sup> Per capita consumption, per capita income, per capita farm income, and share of farm income to total income available from household survey.

# **II. SUMMARY OF RESEARCH**

The three poverty rates available for 1976/77, 1984/85, and 1995/96 are not comparable. This is mainly due to change in the level of minimum per capita daily nutritional requirements, change in the approach for estimating food and nonfood poverty lines, and change in the definition of poor over time. Despite such methodological changes, surprisingly the three poverty rates corresponding to three time points are around 40 percent. The inequality in income distribution, measured by the Gini concentration ratio has increased from 0.21 in 1984/85 to 0.40 in 1995/96 in rural areas, and from 0.26 in 1984/85 to 0.46 in 1995/96 in urban areas.

Large discrepancies have been observed between the microeconomic and macroeconomic indicators within a span of 12 years, from 1984/85 to 1995/96. For instance, the ratio of per capita private consumption of NA to per capita consumption of HS has increased from almost unity in 1984/85 to 1.37 in 1995/96. Similarly, the ratio of per capita GDP to per capita income of HS has increased from almost unity in 1984/85 to 1.52 in 1995/96. On the contrary, the ratio of per capita agricultural gross domestic product (GDP) to per capita farm income of HS has remained almost unity in the years 1984/85 and 1995/96.

Rural/urban differences in both income and nonincome poverty is immense in Nepal. For instance, rural poverty rates are almost twice as high as urban poverty rates. No clear trend has emerged out of comparing poverty rates across the three regions (*terai*, hill, and mountain). Despite the fact that infrastructure development and economic opportunities are relatively better in the terai than in the hill/mountain region, the terai region appears worse than the hill region in terms of the indicators of nonincome poverty, i.e., infant mortality rate and gross enrollment ratio.

In spite of relatively high economic growth during 1984/85 to 1995/96, there is no strong evidence that supports the hypothesis that poverty has declined during this period. In fact, strong evidence is observed from the Nepal Living Standard Survey of 1995/96 that reject the hypothesis. This is evident when sectoral economic growth is viewed against the background of micro level socioeconomic behaviors. For instance, the sluggish growth of the agricultural sector (macroeconomic scenario) is incompatible with the micro level realities, since an overwhelming majority of individuals/ households heavily depend on agriculture both for employment and income generation. Economic reforms have offered opportunities, but the poor fail to take advantage of these opportunities because of mass illiteracy. If this incompatible trend between the micro level socioeconomic behaviors and sectoral economic growth continues to persist, the reduction of poverty in Nepal may remain a very difficult task.

#### **III. STATISTICAL SYSTEM AND DATA SOURCES**

The purpose of this section is to describe the statistical system of Nepal and, also, to describe three different sets of databases corresponding to three dimensions of poverty, namely income, health, and education.

# A. Statistical System

Nepal's statistical system is a decentralized one. A large number of government and semigovernment organizations are compiling, collecting, processing, and analyzing data. The major organizations are Central Bureau of Statistics (CBS), Nepal Rastra Bank (NRB), Ministry of Agriculture, Ministry of Health (MoH), Ministry of Education, and Ministry of Finance.

These six major organizations are involved under different capacities in building the statistical system in Nepal. The CBS, being the Secretariat of the National Planning Commission (NPC), has more responsibility toward capacity building of the nation's statistical system than any other organization. For example, CBS is responsible for identifying the country's data needs for planning and policy purposes. It is also entrusted with the responsibility of coordination and supervision of data collection and publication work carried out by other organizations. For these and similar other purposes, adequate authority is bestowed upon CBS through the Statistics Act. In spite of all these institutional arrangements, a variety of problems still persist in the statistical system of Nepal.

#### B. Income Poverty Data Source

Even though a number of household surveys were conducted to collect data on income and consumption in the past, only a few of them were used to estimate poverty. Measurement of poverty was first made in Nepal in 1978. Since then two more attempts have been made.<sup>3</sup> These three attempts at poverty measurement were made by three different agencies: NPC in 1978, NRB in 1988, and CBS in 1998. These agencies (hereafter sources) had utilized the data on income and consumption they have collected through nationwide household surveys. Pertinent information from these surveys is summarized in Table 1.

SURVEY TITLE	SURVEY AUTHORITY	SURVEY YEAR	NUMBER OF SELECTED HOUSEHOLDS
Employment, Income Distribution and Consumption Patterns Survey	National Planning Commission	1976/77	Rural 4,037 Urban 932 Total 4,969
Multipurpose Household Budget Survey	Nepal Rastra Bank	1984/85	Rural 3,662 Urban 1,661 Total 5,323
Nepal Living Standard Survey (NLSS)	Central Bureau of Statistics	1995/96	Rural 2,657 Urban 716 Total 3,373

 TABLE 1

 BASIC INFORMATION OF INCOME POVERTY DATA SOURCE

<sup>3</sup> A fourth one is in process: the second NLSS survey started in March 2003 and completed recently, whose report may appear by 2005.

Even though different sources adopted different sample designs, all designs had a common objective to draw a representative sample of households. In this context, household or individual level estimates of income and consumption expenditure seem to be comparable to some extent across sources (or over time), provided the three sources had adopted the same methodology in recording as well as in defining household level income and consumption expenditure. The NRB and CBS sources appear closer in their definitions of household income. This is not the case between the NPC and NRB, or NPC and CBS definitions since the NPC did not include imputed income (rental value) from owner-occupied houses in the household income while NRB and CBS did. As for the consumption items (food and nonfood), the coverage of NLSS appears much wider than in other two sources.

Neither of the other two surveys had collected as much poverty-related information as NLSS did. The NLSS collected data on income, expenditure, health, education, employment, agriculture, ownership of assets, access to services, housing characteristics, and possession of basic amenities of life. Consequently, the scope of NLSS is much wider than the other two surveys. Several outputs of NLSS were incorporated in the Ninth Five Year Plan (1997/98 to 2001/02).

Macroeconomic indicators are important in poverty analysis. The main data source for macroeconomic indicators is the CBS, which has been generating annual GDP series by sector, private and total consumption, gross domestic savings, gross national product, and GDP price deflator. Due to technical reasons, the national account statistics were revised in 1993. The revised series of national account statistics are in use. The revised GDP series are available both at current and constant prices starting from FY1984/85 (mid-July 1984 to mid-July 1985) up to the present. All the national account statistics are available only at the national level.

# C. Health Poverty Data Source

The mortality indicators and their proxies are frequently used to assess health poverty across time and space. Like many developing countries, Nepal suffers from a low level of reporting of vital events, and the vital registration system is not sufficient enough to provide reliable information or estimates that can be used for various purposes at the operations level. Consequently, it has become a common practice to estimate mortality levels by applying different methods of estimation to either census data or nationwide survey data. The two major nationwide health surveys of Nepal, whose results will be used in this paper, are listed in Table 2.

Apart from the above surveys, census data are also used to estimate level of mortality. Several estimates of mortality for the year 1991 were made available from the two data sources—the 1991 Population Census and the 1991 Nepal Fertility, Family Planning and Health Survey—using different methods (see, for instance, Shrestha 1995, 106). The issues of estimating and reporting infant mortality rate will be discussed in more detail further below.

#### D. Education Poverty Data Source

Literacy rates and enrolment ratios are more frequently used indicators to assess the level of education poverty over time and space. These indicators have both gender and regional

SURVEY TITLE	SURVEY AUTHORITY	SURVEY YEAR	SAMPLE SIZE
Nepal Family Health Survey (NFHS96) Nepal Fertility, Family Planning,	Ministry of Health	1996	8252
and Health Survey (NFHS91)	Ministry of Health	1991	24754

 Table
 2

 Basic Information of Health Poverty Data Source

dimensions. Literacy being an important variable, almost all the household surveys and all the population censuses have been collecting data on it. However, the census figures are used more extensively in Nepal.

The regular data source for enrollment ratios is the Ministry of Education. Data are just compilations of district level official records, and ratios are available by year, level, and sex. The school education structure in Nepal broadly consists of primary (Grade I to V) for 6- to 10-year-old children; lower secondary (Grade VI to VIII) for 11- to 13-year-old children; and secondary (Grade IX to X) for 14- to 15-year-old children. Very few nationwide surveys had provided estimates of enrollment ratios. The most recent survey that provides enrollment ratios is the NLSS of 1995/96.

# **IV. POVERTY LINES AND POVERTY RATES: MEASURING ISSUES**

The purpose of this section is to summarize the practices adopted by three sources while estimating poverty lines and poverty rates in the past. The technical details are in the Appendix.

# A. Minimum Calorie Requirements

In the process of measuring poverty, each of the sources estimated a fresh poverty line. The methodology adopted in estimating the poverty line varies from one source to another (for details see Appendix). For instance, even the basic component of the poverty line, namely the per capita daily calorie requirement for survival, varies from one source to another (Table 3).

SOURCE	TERAI	HILL/MOUNTAIN	NEPAL
NPC	_	_	2256
NRB	2140	2340	2250
CBS	—	_	2124

 Table 3

 Minimum per Papita Daily Calorie Requirement Adopted by Sources

Sources: National Planning Commission (1978, 110); Nepal Rastra Bank (1988, 134); and Central Bureau of Statistics (1998, 32).

Note that no other sources, except NRB, have used two different minimum per capita calorie requirements—one for the population residing in the terai region (2140 calories) and the other for those residing in the hill/mountain region (2340 calories).

# B. Estimates of Poverty Lines

In the process of deriving the poverty line, each source first determined the minimum level of per capita consumption expenditure (hereafter simply expenditure) required to intake the minimum level of calorie requirement, called *food poverty line*. Then each source determined the minimum level of per capita expenditure required to meet other basic necessities, called *nonfood poverty line*. The methods involved in estimating these two poverty lines vary from one source to another remarkably (see Appendix). The final poverty line, presented in Table 4 in local currency unit (LCU), was obtained by adding the two poverty lines.

SOURCE	TERAI	HILL/MOUNTAIN	NEPAL
NPC	-	-	720
NRB	1508	1930	1741*
CBS	—	-	4404

 TABLE 4

 POVERTY LINE IN LOCAL CURRENCY UNIT BY SOURCE

Note: \*Author estimates (= 0.4469 ´ 1508 + 0.5531´1930). The weights are the proportion of population in the two regions.<sup>4</sup> Sources: NPC (1978, 111); NRB (1988, 135); and CBS (1998, 23).

It is important to note that the poverty lines estimated by NPC and CBS are in real prices, in the sense that they are corrected for spatial rather than temporal price differences. This may also be the case for the NRB poverty lines. However, this is difficult to ascertain from the methodology commonly reported. It is by now evident that the three poverty lines of Nepal are *not* comparable.

# C. Definition of Poor

The two sources, NPC and NRB, had defined those individuals as poor whose per capita income falls below the poverty line, while CBS had defined those individuals as poor whose per capita expenditure falls below the poverty line. The two definitions may not lead to the same headcount ratio even for a fixed poverty line. For example, the headcount ratios based on per capita expenditure and per capita income with poverty line of Rs 720 were 31.5 and 36.2 percent, respectively, in

<sup>&</sup>lt;sup>4</sup> Note that NRB had introduced two separate poverty lines, one for the terai residents and the other for the hill/mountain residents. The author has combined the two poverty lines into a single one.

1976/77 (NPC 1978, 117). With this and other methodological problems, the estimated headcount ratios of three sources (Table 5) are not comparable over time. Nevertheless, these estimates clearly indicate that the incidence of poverty is more pronounced in the rural than in urban areas.

ESTIMATING SOURCE	YEAR FOR ESTIMATION	RURAL AREAS	URBAN AREAS	ALL NEPAL
NPC	1976/77	37.2	17.0	36.2
NRB	1984/85	43.1	19.2	41.4*
CBS	1995/96	44.0	23.0	42.0

TABLE 5	
ESTIMATED HEADCOUNT RATIOS BY SOURCE	e (percent)

Note: \* Author's estimates (0.9306 43.1 + 0.0694 19.2 = 41.4). The weights are the proportion of rural/urban population. Sources: National Planning Commission (1978, 117); Nepal Rastra Bank (1988, 136); and Central Bureau of Statistics (1998, 35).

# V. INCOME DISTRIBUTION: DECILE SHARES

This section presents the percentage shares of decile group of individuals<sup>5</sup> to the total income. The shares are presented separately for the rural and urban areas for 1984/85 and 1995/96. The cumulative percentage shares of decile groups to total income for 1984/85 and 1995/96 are summarized in Tables 6 and 7, respectively.

In 1984/85, the top decile group of individuals of the rural and urban area is observed to account for about 20 and 22 percent, respectively, of the total income generated in the corresponding area. Meanwhile, the bottom decile group of individuals of each rural and urban area is observed to account for 4 percent of total income generated in the corresponding area. The Gini concentration ratios of rural and urban areas in 1984/85 are 0.23 and 0.26, respectively.

DECILE SHARES IN TOTAL INCOME BY RURAL AND URBAN AREAS IN 1984/85										
	FIRST	SECOND	THIRD	FOURTH	FIFTH	SIXTH	SEVENTH	EIGHTH	NINTH	TENTH
Rural	4.3	10.1	17.2	25.2	33.9	43.5	53.7	65.5	80.1	100.0
Urban	4.4	10.3	16.3	23.4	31.7	40.8	51.4	64.0	78.2	100.0

TABLE 6

Source: NRB (1988, 108).

In 1995/96, the top decile group of individuals of each rural and urban area is observed to account for about 33 percent of the total income generated in the corresponding area. The bottom

<sup>&</sup>lt;sup>5</sup> Based on annual per capita income.

decile group of individuals of rural and urban areas is observed to account for 2 and 1 percent, respectively, of total income generated in the corresponding area. The Gini concentration ratios of rural and urban areas in 1995/96 are 0.40 and 0.46, respectively.

	FIRST	SECOND	THIRD	FOURTH	FIFTH	SIXTH	SEVENTH	EIGHTH	NINTH	TENTH
Rural	1.8	5.6	10.4	16.2	23.0	31.0	40.4	52.0	67.1	100.0
Urban	0.9	3.4	7.1	12.2	18.5	26.6	36.7	49.6	66.8	100.0

 Table 7

 Decile Shares in Total Income by Rural and Urban Areas, 1995/96

Source: Compiled from NLSS data for RETA 5917.

Consumption inequality in Nepal as a whole, measured by the Gini concentration ratio, is 0.34 (CBS 1998, 28). There is a big difference in the degree of inequality between urban and rural areas, with the Gini concentration ratio for urban areas as high as 0.43 compared to 0.31 in rural areas.

# VI. DISCREPANCIES IN NATIONAL ACCOUNTS AND HOUSEHOLD SURVEY DATA

This section compares the national level per capita income, consumption, and farm income available from HS with the corresponding proxies available from NA. Such comparison is made using two time points, 1984/85 and 1995/96.

#### A. Comparison of Per Capita Consumption

The ratio of nominal per capita private consumption of NA to nominal per capita consumption of HS has increased from almost unity in 1984/85 to 1.37 in 1995/96 (Table 8). During the reference period the real per capita consumption estimates of HS have shown no growth, while those of NA have shown an annual average growth of 2.6 percent.

	1984/85	1995/96
Nominal per capita consumption available from HS	2211	6802
Nominal per capita private consumption available from NA	2227	9325
Ratio of NA to HS nominal per capita consumption	1.0	1.37
GDP price deflator	100	315

 Table 8

 Comparison of Per Capita Consumption

# B. Comparison of Per Capita Income

The ratio of nominal per capita GDP of NA to nominal per capita income of HS has increased from almost unity in 1984/85 to 1.52 in 1995/96 (Table 9). During the reference period the real per capita income estimates available from the household survey have shown no growth, while those available from the national accounts have shown an annual average growth of 2.7 percent.

TABLE 9					
COMPARISON	OF	Per	CAPITA	INCOME	

	1984/85	1995/96
Nominal per capita income available from HS	2571	7690
Nominal per capita income (GDP) available from NA	2751	11659
Ratio of NA to HS nominal per capita income	1.07	1.52

# C. Comparison of Per Capita Farm Income

The ratio of nominal per capita agricultural GDP of NA to nominal per capita farm income of HS has remained almost unity in both years 1984/85 and 1995/96 (Table 10), implying survey and national account results are consistent (no discrepancy). In terms of growth, HS and NA figures have resulted 0.2 and 0.6 percent, respectively, of annual average growth.

TABLE 10 Comparison of Per Capita Farm Income

	1984/85	1995/96
Nominal per capita farm income available from HS	1452	4691
Nominal per capita farm income (AGDP) available from NA	1409	4719
Ratio of NA to HS nominal per capita income	0.97	1.01

# D. Comparison of Percentage Share

The percentage share of agricultural GDP to total GDP has decreased from around 51 percent in 1984/85 to around 40 percent in 1995/96. On the contrary, the agricultural/farm income accounted for about 56 percent of the total income in 19984/85 (NRB 1988, viii), and 61 percent of the total income in 1995/96 (CBS 1996b, 10).

# **VII. NONINCOME INDICATORS**

This section discusses some issues related to the measurement of two indicators, health and education.

# A. Infant Mortality Rate—Estimating and Reporting Issues

Several sources have applied indirect techniques to estimate infant mortality rates (IMRs) on census and national survey data. Some national sample surveys, however, have also provided IMRs using the direct method based on direct information on infant deaths. Mortality estimates based on survey data involve a relatively small number of cases, which often lead to unstable estimates. In order to avoid this problem, it is a common practice to estimate mortality over an extended period, usually 5- or 10-year periods preceding the survey. In this method, the IMR is averaged for the cohort of children born 0-4 or 0-9 years before survey date. The issue of small number of cases becomes more severe, if differentials in IMR are studied against the socioeconomic background or against the place of residence (e.g., regions and rural/urban) of the respondents. Different estimates of IMR based on different methods at two points of time are summarized in Table 11.

INFANT MORTALITY KATE BY SOURCE AND METHOD					
DATA SOURCE	5-YEAR PERIOD PRECEDING SURVEY	10-YEAR PERIOD PRECEDING SURVEY	INDIRECT METHOD		
NFHS91	80.1	98.0	102		
NFHS96	78.5	93.0			

TABLE 11 INFANT MORTALITY RATE BY SOURCE AND METHOD

Source: MoH (1993 and 1996).

The IMR, estimated from NFHS91 data source based on a 5-year period preceding the survey date, is the averaged figure for the cohort of children born 0-4 years before the survey date, that is, births between 1987 to 1991. Similarly, the IMR, estimated from the same data source based on a 10-year period preceding the survey date, is the averaged figure for the cohort of children born between 1982 to 1991. The estimates of IMR vary drastically from one method of estimation to another, implying that IMRs stated without method and data source always create comparability problems.

# **B.** Infant Mortality Rate: Rural/urban Differentials

The estimated IMR using the direct method based on a 10-year period preceding the survey is presented in Table 12. The rural/urban differential in IMR is remarkable. The two data sources consistently show that the estimated IMR is more than 1-1/2 times higher in the rural area than in the urban area.

	TABLE 12			
Rural/Urban Infant	MORTALITY	<b>R</b> ATE BY	Data	SOURCE

DATA SOURCE	RURAL	URBAN
NFHS91	100.2	60.4
NFHS96	95.3	61.1

Sources: NFHS (1993, 136) and NFHS (1996, 104).

### C. Gross Enrollment Ratios

Gross enrollment ratios for primary, lower secondary, and secondary school<sup>6</sup> are presented in Table 13. The gross enrollment ratio in Nepal is 86 percent for primary, which sharply falls to 39 percent for lower secondary, and to only 11 percent for secondary level. The sharp decline in ratio from one level to another persists in rural Nepal and is relatively slower in urban Nepal.

	PRIMARY	LOWER SECONDARY	SECONDARY
Rural Nepal Boys Girls Both	100 70 85	45 29 37	15 5 10
Urban Nepal Boys Girls Both	103 100 101	67 72 69	29 21 25
Nepal Boys Girls Both	100 72 86	46 31 39	16 6 11

 TABLE 13

 GROSS ENROLLMENT RATES BY LEVEL, GENDER, AND RURAL/URBAN AREA, 1995/96 (PERCENT)

Source: CBS (1996a, 69).

<sup>&</sup>lt;sup>6</sup> The gross enrollment ratio for a specific school level is computed as the number of children attending the specific school level as a percentage of the target age group of children of the specific school level. The target age group of children of primary, lower secondary, and secondary level are 6-10, 11-13, and 14-15 years of age, respectively.

Gender disparity in gross enrollment ratios in all levels is evident from the table. It is remarkably higher in rural Nepal than in urban Nepal.

#### **VIII. TRENDS IN SECTORAL ECONOMIC GROWTH AND IMPLICATIONS**

The trends in economic growth during 1984/85 to 1995/96 are presented in Figure 1. During the reference period, agricultural GDP growth rates depicting relatively high variations tend to cluster around 3.0 percent. The unstable growth rate of the agricultural sector is mainly due to vagaries of monsoons. On the other hand, nonagricultural GDP growth rates, exhibiting a more stable growth, tend to cluster around 6.8 percent. The high and stable growth rate of the nonagricultural sector is mainly due to economic reforms initiated in 1985/86 and accelerated after 1990. The overall economic growth rates tend to cluster around 5.0 percent.



FIGURE 1 TRENDS IN ECONOMIC GROWTH BY SECTOR, 1984/85-1995/96

Source: Based on available GDP series.

In spite of relatively high economic growth during the period, poverty did not decline as indicated in Table 5 (Section 4). The reason for this can be understood by analyzing the micro level socioeconomic indicators in Table 14 against information on sectoral economic growth. In particular, while the overwhelming majority of individuals/households heavily depend on agriculture for both employment and income generation, the growth of agriculture has been sluggish as pointed out above. Economic reforms may have offered opportunities, but the poor appear to have failed to take advantage of these, perhaps due to mass illiteracy (Table 15). As argued by Sen (1996), mass illiteracy deprives people from taking advantage of the opportunities offered by economic reforms. If the educational and related characteristics of large groups of the population do not improve, poverty may persist despite growth in nonagricultural sectors of the economy.<sup>7</sup>

	FIRST	SECOND	THIRD	FOURTH	FIFTH	ALL
Literacy rate <sup>a</sup> (percent)	19.9	27.8	32.9	46.2	59.3	37.8
Percent of population reporting agriculture as the main sector of employment <sup>b</sup>	87.6	85.7	85.5	84.6	71.6	82.9
Percent share of farm income to total income <sup>c</sup>	69	69	64	63	47	61

 TABLE 14

 Socioeconomic and Demographic Characteristics of Quintile Groups

Sources: <sup>a</sup>CBS (1996a, 56).

<sup>b</sup>CBS (1996a, 20).

<sup>c</sup>CBS (1996b, 10).

Finally, the sectoral economic growth rates by Plan periods are summarized in Table 15. These rates need to be compared with great caution, since during each Plan period Nepal had adopted several reform policies. Some of the major reforms are Economic Stabilization Program, 1985; Structural Adjustment Program, 1987; Enhanced Structural Adjustment Facility, 1992; and implementation of Agriculture Perspective Plan in the Ninth Plan Period. During the same period, Nepal has witnessed several external shocks, the most major of which were the imposition of total economic (trade) blockade by India in 1988-1989, restoration of a multiparty democratic government in 1990, political instability that began around the mid-1990s, the Maoist insurgency that surfaced intensely in 1998, and the Royal Massacre in 2001.

<sup>&</sup>lt;sup>7</sup> It is worth noting that the percentage of population reporting agriculture as the main sector of employment decreases as the quintile level increases. Likewise, the percentage share of farm income to total income decreases as quintile level increases. The decrease in both the indicators is sharp in the fifth quintile (Table 14).

	AGDP GROWTH RATE GROWTH RATE	NONAGRICULTURAL GROWTH RATE	OVERALL GDP
Seventh (1985/86—1989/90)	4.1	5.5	4.8
Eighth (1992/93—1996/97)	3.0	6.3	4.9
Ninth (1997/98—2001/02)	3.3	3.9	3.7

 TABLE 15

 Plan Periodic Economic Growth Rate (percent)

Note: Two fiscal years—1990/91 and 1991/92—were plan holidays. Source: Plan Documents.

# **IX. CONCLUDING REMARKS**

Among other things, this paper has attempted to explore the several problems that persist in the measurement of poverty in Nepal. The main findings and conclusions are as follows.

The currently available poverty rates are not strictly comparable over time. Nevertheless, there is evidence that leads to a rejection of the hypothesis that poverty was reduced during the reference period, 1984/85 to 1995/96. While Nepal achieved high nonagricultural growth, agricultural growth has been low during the reference period. Socioeconomic data from household-level surveys clearly reveal the existence of mass illiteracy and high dependency of an overwhelming majority of the population on agriculture for both employment and income generation. Thus low agricultural growth would be compatible with an absence of poverty reduction over the reference period. Moreover, income inequality has increased over the reference period. If the pattern of sectoral economic growth continues to persist, poverty reduction in Nepal is likely to remain almost an impossible task.

During the Ninth Plan period, Nepal has passed through a most difficult period. However, during this period the average performance of the agricultural sector seems to have improved, while the performance of the nonagricultural sector has deteriorated. Nepal needs to learn the policy implications from this experience and pay more attention to the growth of the agricultural sector through the Agriculture Perspective Plan.

#### **APPENDIX: TECHNICAL NOTES**

This annex attempts to provide a brief description of the methodology adopted by three sources—National Planning Commission, Nepal Rastra Bank (NRB), and Central Bureau of Statistics—while estimating (i) the poverty line and (ii) the incidence of poverty. The three sources estimated poverty line in terms of consumption (in Nepali Rupees, NRs), which basically is the sum of the food and nonfood poverty line. The food poverty line is the expenditure required for a person to be able to meet a certain minimum nutritional intake. The minimum nutritional requirements have been expressed in terms of calorie intakes. The nonfood poverty line is the amount needed to purchase essential nonfood items.

The poverty line, in fact, divides the population into poor and nonpoor. In Nepal two approaches—minimum subsistence consumption approach and minimum subsistence income approach—have been used for defining poor/nonpoor. According to the first approach, an individual is considered as poor if his/her per capita consumption level falls below the poverty line. According to the second approach an individual is considered as poor if his/her per capita approach is considered as poor if his/her per capita below the poverty line.

#### POVERTY ESTIMATION METHODOLOGY OF NATIONAL PLANNING COMMISSION

#### **Food Poverty Line**

First, NPC presumed 2,256 calories<sup>8</sup> as the average per capita minimal calorie requirement per day. NPC also presumed that this minimal requirement calorie could be fulfilled by consuming 605 grams of cereals (rice, maize, millet, or wheat individually or in combination) and 60 grams of pulses (*arhar, mas, masur, gram, khesari*, etc.)<sup>9</sup>. Second, the minimum subsistence level of per capita expenditure required to intake 2,256 calories was estimated at the national level by incorporating the variations among the regional level estimates (see second column of Table A1). Thus, the food poverty line turned out to be NRs 1.32 per day, 39.60 per month, or 475.20 per year.

#### Final Poverty Line

The lowest average actual daily expenditure on the nonfood items<sup>10</sup> (including the other food items) was estimated for rural and urban areas separately by incorporating the variations among the regional level estimates (see third and fourth columns of Table A.1). Then the average minimum per capita subsistence level of expenditure was estimated for rural and urban areas (last two columns of Table A.1). Ultimately, Rs 2.0 per capita per day was estimated as the minimum (at 1976/77 prices) subsistence level of expenditure at the national level, since during that time 96 percent of the country's population was in the rural areas. Thus, the national level poverty line turned out to be NRs 2.0 per day, NRs 60.0 per month, or NRs 720.0 per year.

<sup>&</sup>lt;sup>8</sup> Estimated by the Food Research Laboratory of HMG as well as by the Food and Agriculture Organisation.

<sup>&</sup>lt;sup>9</sup> Consumption of 605 grams of cereals, on average, would provide 2042 calories and 60 grams of pulses 214 calories, making together 2256 calories per capita a day.

<sup>&</sup>lt;sup>10</sup> Lowest average is based on the average expenditure made by mostly landless, marginal, and small-farm category households in rural areas, and expenditure made by the minimum income group (<Rs 4000 annual) in urban areas. The other food items were species and condiments; vegetables and fruits; milk and milk products; meat, eggs, and fish; edible oil and *ghee*; sweetening items; and tea and beverages. Nonfood items were clothing and footwear, education and health, fuel and light etc.

	EXPENDITURE TO	LOWEST AVERAG EXPENDITURE NONFOO	E ACTUAL DAILY ON FOOD AND D ITEMS	TOTAL DAILY REQUIREMENT FOR SUBSISTENCE LEVEL OF EXPENDITURE		
REGION	CALORIES <sup>11</sup>	RURAL	URBAN	RURAL	URBAN	
Eastern	1.21	0.65	0.32	1.86	1.53	
Central	1.18	0.67	0.39	1.85	1.57	
Western	1.50	0.76	0.45	2.21	1.95	
Far Western	1.41	0.70	0.27	2.11	1.68	
All Nepal	1.32	0.70	0.36	2.02	1.68	

			TABLE	A.1						
FOOD, NONFOOD,	AND <b>F</b> INAL	POVERTY	LINE BY	REGION	and I	RURAL	/Urban	Area,	, 1976,	/77

Source: NPC (1978, 111).

### **Incidence of Poverty**

NPC provided the estimates of poor based on both minimum subsistence consumption approach and minimum subsistence income approach, which are summarized in the Table A.2 by rural/urban area.

	TABLE	A.2			
POVERTY INCIDENCE BY	ESTIMATION	APPROACH,	1976	/77 (	(PERCENT)

ESTIMATION APPROACH	RURAL	URBAN	ALL NEPAL
Minimum Subsistence Consumption	32.1	20.0	31.5
Minimum Subsistence Income	37.2	17.0	36.2

Source: NPC (1978, 117).

The two approaches yield two different estimates of poverty. For example, the incidence of poverty under the minimum subsistence consumption approach was 31.5 percent, while that under the minimum subsistence income approach was 36.2 percent. *The estimates based on the minimum subsistence income approach were taken as official estimates of poverty by NPC*.

#### **POVERTY ESTIMATION METHODOLOGY OF NEPAL RASTRA BANK**

According to the Multipurpose Household Budget Survey report, the poverty lines are essentially the Basic Needs Incomes (BNIs) fixed by the NPC in 1985/86 with some adjustments. The BNI fixed by the NPC is described below.

<sup>&</sup>lt;sup>11</sup> Average cost price of 605 grams of cereals and 60 grams of pulses.

#### **Food Poverty Line**

First, in view of the variations in altitude among the geographical regions, the minimum daily calorie requirements for the hill/mountain and the terai region were fixed at 2340 and 2140 respectively. The national average was fixed at 2250 calories. NPC presumed that the targeted group of population could fulfill the minimum calorie requirement largely through the consumption of cereals, pulses and potatoes. Second, based on the average retail prices of the food items, the expenditure required for the intake of 2340 calories and 2140 calories per person per day in the hill/mountain and the terai region correspondingly turned out to be Rs 3.86 and Rs 3.06 at 1985/86 prices.

#### Final Poverty Line

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 at 1985/86 prices.

Comparing the urban Consumer Price Indices (CPIs) of 1984/85 with those of 1985/86, it was found that the 1985/86 CPIs were higher than those of 1984/85 by a factor of 11 percent in the hills, and 12.3 percent in the terai. The regional BNIs per person per year at 19985/86 prices were deflated by the respective CPI factors in order to get the regional BNIs at 1984/85 (survey year) prices. On this basis, the average BNI per person per year at 1984/85 prices was 1984/85 prices was Rs 1930 for the hill/mountain region, Rs 1508 for the terai region, NRs 1741 for all Nepal. The whole estimation scheme of BNI and poverty line is presented in Table A3.

	TERAI	HILL/MOUNTAIN	NEPAL
Minimum daily calorie required per person per day	2140	2340	2250
Expenditure required to intake minimum calorie/person/day	3.06	3.86	3.50*
Expenditure required for other items of daily necessities	1.65	2.08	1.89*
BNI per person per day at 1985/86 prices	4.71	5.94	5.39*
BNI per person per year at 1985/86 prices	1719	2168	1967*
BNI per person per year at 1984/85 prices or poverty lines	1508	1930	1741*

TABLE A.3 SUMMARY OF BNI ESTIMATION SCHEME, AND POVERTY LINE, 1984/85

Notes: \* Weighted average: weights are 0.447 for the terai and 0.553 for the hill/mountain. BNI means basic needs income.

Source: NRB (1988, 134-5).

#### **Incidence of Poverty**

The minimum subsistence income approach has been used to define poor. The incidence of poverty by regions, including rural/urban area, is summarized in Table A.4.

RURAL	URBAN	NEPAL	RURAL TERAI	RURAL HILL	RURAL MOUNTAIN	URBAN TERAI	URBAN HILL
43.1	19.2	41.4*	35.4	52.7	44.1	24.1	14.5

TABLE A4INCIDENCE OF POVERTY, 1984/85

Note: \* Weighted average: weights are 0.9306 for rural and 0.0694 for urban area. Source: NRB (1988, 134-5).

# **POVERTY ESTIMATION METHODOLOGY OF CENTRAL BUREAU OF STATISTICS**

Details on calorie requirement of the Nepali population were not readily available. Figures for the Indian population have been used (Gopalan, Sastri, and Balasubramanian 1976) for estimating poverty line by CBS.

### Food Poverty Line

Based on the NLSS data, a "representative" Nepali household is built up from the average of each gender/age combination per household in the population as a whole. The sum of these averages yields the average household size in Nepal of 5.68. For such a representative household, the per capita requirement turns out to be 2124 kcals per day (see Table A5). It has been assumed that the activity levels of adult males and females are moderate. Persons who cannot meet even moderate activity level requirements are clearly deprived.

Having settled on a nutritional norm of 2124 kcals per person per day, the next step in setting the food poverty line was to specify the basket of foods that will be expected to yield the nutritional norm. It was decided to identify those food items that were consumed by Nepali households in the second to fifth decile of the per capita consumption distribution. A consumption basket was constructed comprising the average quantity consumed for each of the 37 food items included in the NLSS for which information on quantity consumed was available. On average, these 37 food items represent 85 percent of the total food spending. This basket yielded 1736 kcals per day per person. To ensure that the food basket identified yielded 1805 kcals (85 percent of 2124 kcals), all quantities were uniformly scaled up by the ratio of 1805/1736 (Table A6).

GROUP	PARTICULARS	RECOMMENDED CALORIES (kcal/day)	COMPOSITION OF AVERAGE NEPALI HOUSEHOLD	CALORIES PER HOUSEHOLD
Man	Sedentary work Moderate work Heavy work	2400 2800 3900	 1.31 	 3668 
Woman	Sedentary work Moderate work Heavy work Pregnancy Lactation	1900 2200 3000 +300 +700	 1.47 	3234 — — —
Infants	0-12 months	n/a	0.15	n/a
Children	1-3 years 4-6 years 7-9 years 10-12 years	1200 1500 1800 2100	0.45 0.57 0.49 0.48	540 855 882 1008
Adolescents	Boys: 13-15 years Girls: 13-15 years Boys: 16-18 years Girls: 16-18 years	2500 2200 3000 2200	0.20 0.19 0.18 0.19	500 418 540 418
Total 5.68				12063
Recommended Per Capita Calorie Consumption (= 12063/5.68)				2124

TABLE A5 Recommended Calorie Intake

Source: CBS (1998, 32).

FOOD ITEM	GRAMS (OR MLS) PER DAY	EDIBLE SHARE	CALORIES/GRAM	TOTAL CALORIES
Fine rice	26.15	1.00	3.49	91.25
Coarse rice	217.3	1.00	3.45	749.6
Beaten rice	3.472	1.00	3.46	12.01
Maize	58.55	1.00	3.42	200.2
Maize flour	40.07	1.00	3.42	137.0
Wheat flour	91.77	1.00	3.41	312.9
Millet	35.57	0.79	3.31	93.00
Black pulse	1.903	1.00	3.47	6.603
Masoor	8.172	1.00	3.43	28.03
Rahar	1.020	1.00	3.35	3.418
Gram	0.720	1.00	3.60	2.593
Eggs	0.487	1.00	1.73	0.843
Milk	30.77	1.00	0.67	20.62
Baby milk	0.010	1.00	4.96	0.050
Curd	1.212	1.00	0.60	20.62
Ghee	1.174	1.00	9.00	0.050
Vegetable oil	0.221	1.00	9.00	1.994
Mustard	7.350	1.00	9.00	66.15
Potatoes	28.88	0.85	0.97	23.81
Onions	5.842	0.95	0.50	2.775
Cauliflower	4.063	0.70	0.30	0.853
Tomatoes	2.410	0.98	0.23	0.543
Bananas	3.704	0.71	1.16	3.051
Citrus fruit	0.846	0.67	0.48	0.272
Mangoes	4.989	0.74	0.74	2.732
Apples	0.374	0.90	0.59	0.198
Pineapple	0.096	0.60	0.46	0.026
Рарауа	1.697	0.75	0.35	0.445
Fish	1.717	0.78	0.97	1.299
Mutton	1.640	1.00	1.94	3.181
Buffalo	1.789	1.00	0.86	1.539
Chicken	1.083	1.00	1.09	1.180
Salt	13.31	1.00	0.00	0.000
Sugar	3.547	1.00	3.98	14.11
Gur	0.773	1.00	3.98	3.076
Sweets	1.911	1.00	3.19	6.095
Теа	0.253	1.00	0.00	0.000
				1812.116

 TABLE A6

 Food Basket Composition for the Nepal 1996 Poverty Line

Source: CBS (1998, 33).

As prices vary across the country, the cost of the food basket was calculated on the basis of the prices prevailing in a reference area—the Eastern and the Central terai. This means that in calculating the regional price cost of the food basket, average prices prevailing in the reference area were used (the spatial price index that was computed based on the survey data had also taken rural east Terai as the base case; i.e., all consumption expenditures were adjusted so as to make the purchasing power of one rupee in the respective region comparable to that of one rupee in the reference area). The food poverty line (total cost of purchasing the food basket) amounted to NRs 2637 per person per annum (in real prices in the sense of "corrected for spatial rather than temporal price differences").

#### **Final Poverty Line**

How to add to the food poverty line a component that represents the amount needed to purchase essential nonfood items? One may have several approaches to resolve this issue. The approach adopted by CBS was to was to calculate empirically from the NLSS data how much, on average, those households that were spending on food the amount needed to meet their minimum food requirements were spending on nonfood items.

The food poverty line was based on a subset of total food expenditures. The average nonfood share was derived not as an average difference between total expenditures and total food expenditure around the food poverty line, but rather as the average difference between total expenditures and expenditures on the 37 food items for which quantity information was available. The average nonfood share was calculated following a simple nonparametric technique where median per capita total expenditure was calculated for those households who had per capita food expenditures on the 37 items included in the basket within a small interval (of +/- one percent) around the food poverty line. Successively larger intervals were selected (a total of five times so that the largest interval was plus or minus five percent) and then a simple average was taken of the five observations of median per capita total expenditure around the food poverty line. The food poverty line was then simply scaled up by this average amount to yield a final poverty line. The final poverty line was calculated to be NRs 4404 per person per annum in real<sup>12</sup> prices.

#### **Incidence of Poverty**

In order to have a meaningful comparison between the per capita consumption and the poverty line (real), one must have a mechanism to convert nominal per capita consumption into the real one (here the terms "nominal" and "real" have been used with respect to spatial rather than temporal price differences). Based on the NLSS data, CBS constructed Laspeyres regional price index (see details in CBS 1998) of the six regions assuming rural Eastern and Central terai as the base region.

CBS adopted the minimum subsistence consumption approach to define poor ("an individual is poor if his/her real per capita consumption level falls below the poverty line"). Based on this definition, CBS has calculated the three measures of poverty: incidence of poverty, poverty gap, and squared poverty gap.

The incidence of poverty by regions, including by rural/urban area, is summarized in Table A7.

<sup>&</sup>lt;sup>12</sup> In the sense of "corrected for spatial rather than temporal price differences."

TABLE A7 Incidence of Poverty, 1995/96

RURAL	URBAN	NEPAL	TERAI	HILL	MOUNTAIN	URBAN KATHMANDU VALLEY	OTHER URBAN
23	44	42	42	41	56	4	34

Source: CBS (1998, 35).

#### REFERENCES

Asra, A., and S. Francisco, 2001. "Poverty Line: Eight Countries' Experiences and the Issue of Specificity and Consistency." Paper presented at the Asia and Pacific Forum on Poverty: Reforming Policies and Institutions for Poverty Reduction sponsored by the Asian Development Bank, Manila, Philippines.

Bhalla, S., 2000. "Growth and Poverty in India—Myth and Reality." Available: http://www.oxusresearch.com. CBS, 1996a. Nepal Living Standards Survey Report, Volume I. Central Bureau of Statistics, Kathmandu, Nepal.

\_\_\_\_\_\_, 1996b. *Nepal Living Standards Survey Report, Volume II*. Central Bureau of Statistics, Kathmandu, Nepal.

\_\_\_\_\_, 1998. "Poverty in Nepal Today." *Tathakna Gatibidhi (Four Monthly Statistical Bulletin)*. Central Bureau of Statistics, Kathmandu, Nepal.

Chhetry, D., 2002. "Understanding Rural Poverty in Nepal." In C. Edmonds and S. Medina, eds., *Defining an Agenda for Poverty Reduction, Proceedings of the First Asia and Pacific Forum on Poverty, Volume 1*. Asian Development Bank, Manila, Philippines.

Deaton A., 2001. "Counting the World's Poor: Problems and Possible Solutions." *Research Observer* 16(2):125-47.

- Gopalan, C., B. V. Rama Sastri, and S. C. Balasubramanian, 1976. *Nutritive Value of Indian Foods*. National Institute of Nutrition, Indian Council of Medical Research, Hyderabad.
- MoH, 1993. Nepal Fertility, Family Planning and Health Survey Report. Nepal Family Planning and Maternal Child Health Division, Planing Research and Evaluation Section, Ministry of Health, Kathmandu, Nepal.

\_\_\_\_\_, 1997. *Nepal Family Health Survey 1996*. Family Health Division, Department of Health Service, Ministry of Health, Kathmandu, Nepal.

NPC, 1978. *Employment, Income Distribution and Consumption Patterns in Nepal*. National Planning Commission. NRB, 1988. *Multipurpose Household Budget Survey*. Nepal Rastra Bank, Kathmandu, Nepal.

Sen, A., 1996. "Radical Needs and Moderate Reforms." In J. Dreze and A. Sen, eds., *Indian Development Selected Regional Perspectives*. Delhi: Oxford University Press for UNU/WIDER.

Shrestha, K., 1995, Mortality Levels, Trends and Differentials. Population Monograph of Nepal, Central Bureau of Statistics, Kathmandu, Nepal.

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