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Practices of Poverty Measurement and Poverty Profile of Nepal

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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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September 2004

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FOREWORD

The ERD Working Paper Series is a forum for ongoing and recently completed research and policy studies undertaken in the Asian Development Bank or on its behalf. The Series is a quick-disseminating, informal publication meant to stimulate discussion and elicit feedback. Papers published under this Series could subsequently be revised for publication as articles in professional journals or chapters in books.
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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\(^1\) and microeconomic indicators\(^2\) 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.

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\(^1\) 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.

\(^2\) 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. 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.

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

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
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).

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>TERAI</th>
<th>HILL/MOUNTAIN</th>
<th>NEPAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPC</td>
<td>—</td>
<td>—</td>
<td>2256</td>
</tr>
<tr>
<td>NRB</td>
<td>2140</td>
<td>2340</td>
<td>2250</td>
</tr>
<tr>
<td>CBS</td>
<td>—</td>
<td>—</td>
<td>2124</td>
</tr>
</tbody>
</table>

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.

**Table 4**

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>TERAI</th>
<th>HILL/MOUNTAIN</th>
<th>NEPAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPC</td>
<td>—</td>
<td>—</td>
<td>720</td>
</tr>
<tr>
<td>NRB</td>
<td>1508</td>
<td>1930</td>
<td>1741*</td>
</tr>
<tr>
<td>CBS</td>
<td>—</td>
<td>—</td>
<td>4404</td>
</tr>
</tbody>
</table>

Note: *Author estimates (= 0.4469 \cdot 1508 + 0.5531 \cdot 1930). The weights are the proportion of population in the two regions.*

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

---

4 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.
Based on annual per capita income. 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.

Table 5

<table>
<thead>
<tr>
<th>ESTIMATING SOURCE</th>
<th>YEAR FOR ESTIMATION</th>
<th>RURAL AREAS</th>
<th>URBAN AREAS</th>
<th>ALL NEPAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPC</td>
<td>1976/77</td>
<td>37.2</td>
<td>17.0</td>
<td>36.2</td>
</tr>
<tr>
<td>NRB</td>
<td>1984/85</td>
<td>43.1</td>
<td>19.2</td>
<td>41.4*</td>
</tr>
<tr>
<td>CBS</td>
<td>1995/96</td>
<td>44.0</td>
<td>23.0</td>
<td>42.0</td>
</tr>
</tbody>
</table>

Note: * Author’s estimates \((0.9306 \times 43.1 + 0.0694 \times 19.2 = 41.4)\). 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\(^5\) 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.

Table 6

<table>
<thead>
<tr>
<th></th>
<th>FIRST</th>
<th>SECOND</th>
<th>THIRD</th>
<th>FOURTH</th>
<th>FIFTH</th>
<th>SIXTH</th>
<th>SEVENTH</th>
<th>EIGHTH</th>
<th>NINTH</th>
<th>TENTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>4.3</td>
<td>10.1</td>
<td>17.2</td>
<td>25.2</td>
<td>33.9</td>
<td>43.5</td>
<td>53.7</td>
<td>65.5</td>
<td>80.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Urban</td>
<td>4.4</td>
<td>10.3</td>
<td>16.3</td>
<td>23.4</td>
<td>31.7</td>
<td>40.8</td>
<td>51.4</td>
<td>64.0</td>
<td>78.2</td>
<td>100.0</td>
</tr>
</tbody>
</table>


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

\(^5\) 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.

### Table 7
**Decile Shares in Total Income by Rural and Urban Areas, 1995/96**

<table>
<thead>
<tr>
<th></th>
<th>First</th>
<th>Second</th>
<th>Third</th>
<th>Fourth</th>
<th>Fifth</th>
<th>Sixth</th>
<th>Seventh</th>
<th>Eighth</th>
<th>Ninth</th>
<th>Tenth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>1.8</td>
<td>5.6</td>
<td>10.4</td>
<td>16.2</td>
<td>23.0</td>
<td>31.0</td>
<td>40.4</td>
<td>52.0</td>
<td>67.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Urban</td>
<td>0.9</td>
<td>3.4</td>
<td>7.1</td>
<td>12.2</td>
<td>18.5</td>
<td>26.6</td>
<td>36.7</td>
<td>49.6</td>
<td>66.8</td>
<td>100.0</td>
</tr>
</tbody>
</table>

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.

### Table 8
**Comparison of Per Capita Consumption**

<table>
<thead>
<tr>
<th></th>
<th>1984/85</th>
<th>1995/96</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal per capita consumption available from HS</td>
<td>2211</td>
<td>6802</td>
</tr>
<tr>
<td>Nominal per capita private consumption available from NA</td>
<td>2227</td>
<td>9325</td>
</tr>
<tr>
<td>Ratio of NA to HS nominal per capita consumption</td>
<td>1.0</td>
<td>1.37</td>
</tr>
<tr>
<td>GDP price deflator</td>
<td>100</td>
<td>315</td>
</tr>
</tbody>
</table>
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>
<thead>
<tr>
<th>TABLE 9</th>
<th>COMPARISON OF PER CAPITA INCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1984/85</td>
</tr>
<tr>
<td>Nominal per capita income available from HS</td>
<td>2571</td>
</tr>
<tr>
<td>Nominal per capita income (GDP) available from NA</td>
<td>2751</td>
</tr>
<tr>
<td>Ratio of NA to HS nominal per capita income</td>
<td>1.07</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>TABLE 10</th>
<th>COMPARISON OF PER CAPITA FARM INCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1984/85</td>
</tr>
<tr>
<td>Nominal per capita farm income available from HS</td>
<td>1452</td>
</tr>
<tr>
<td>Nominal per capita farm income (AGDP) available from NA</td>
<td>1409</td>
</tr>
<tr>
<td>Ratio of NA to HS nominal per capita income</td>
<td>0.97</td>
</tr>
</tbody>
</table>

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.

**Table 11**

<table>
<thead>
<tr>
<th>DATA SOURCE</th>
<th>DIRECT METHOD BASED ON</th>
<th>INDIRECT METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5-YEAR PERIOD</td>
<td>10-YEAR PERIOD</td>
</tr>
<tr>
<td></td>
<td>PRECEDING SURVEY</td>
<td>PRECEDING SURVEY</td>
</tr>
<tr>
<td>NFHS91</td>
<td>80.1</td>
<td>98.0</td>
</tr>
<tr>
<td>NFHS96</td>
<td>78.5</td>
<td>93.0</td>
</tr>
</tbody>
</table>


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>
<thead>
<tr>
<th>DATA SOURCE</th>
<th>RURAL</th>
<th>URBAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFHS91</td>
<td>100.2</td>
<td>60.4</td>
</tr>
<tr>
<td>NFHS96</td>
<td>95.3</td>
<td>61.1</td>
</tr>
</tbody>
</table>

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

C. Gross Enrollment Ratios

Gross enrollment ratios for primary, lower secondary, and secondary school 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.

<table>
<thead>
<tr>
<th></th>
<th>PRIMARY</th>
<th>LOWER SECONDARY</th>
<th>SECONDARY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Nepal Boys</td>
<td>100</td>
<td>45</td>
<td>15</td>
</tr>
<tr>
<td>Girls</td>
<td>70</td>
<td>29</td>
<td>5</td>
</tr>
<tr>
<td>Both</td>
<td>85</td>
<td>37</td>
<td>10</td>
</tr>
<tr>
<td>Urban Nepal Boys</td>
<td>103</td>
<td>67</td>
<td>29</td>
</tr>
<tr>
<td>Girls</td>
<td>100</td>
<td>72</td>
<td>21</td>
</tr>
<tr>
<td>Both</td>
<td>101</td>
<td>69</td>
<td>25</td>
</tr>
<tr>
<td>Nepal      Boys</td>
<td>100</td>
<td>46</td>
<td>16</td>
</tr>
<tr>
<td>Girls</td>
<td>72</td>
<td>31</td>
<td>6</td>
</tr>
<tr>
<td>Both</td>
<td>86</td>
<td>39</td>
<td>11</td>
</tr>
</tbody>
</table>

Source: CBS (1996a, 69).

---

6 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](image)

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.  

**Table 14**

<table>
<thead>
<tr>
<th>Socioeconomic and Demographic Characteristics of Quintile Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Literacy rate (%)</td>
</tr>
<tr>
<td>Percent of population reporting agriculture as the main sector of employment</td>
</tr>
<tr>
<td>Percent share of farm income to total income</td>
</tr>
</tbody>
</table>

Sources:  
- CBS (1996a, 56).  
- CBS (1996a, 20).  
- 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.

---

7 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).
TABLE 15
PLAN PERIODIC ECONOMIC GROWTH RATE (PERCENT)

<table>
<thead>
<tr>
<th>Period</th>
<th>AGDP Growth Rate</th>
<th>Nonagricultural Growth Rate</th>
<th>Overall GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seventh (1985/86—1989/90)</td>
<td>4.1</td>
<td>5.5</td>
<td>4.8</td>
</tr>
<tr>
<td>Eighth (1992/93—1996/97)</td>
<td>3.0</td>
<td>6.3</td>
<td>4.9</td>
</tr>
<tr>
<td>Ninth (1997/98—2001/02)</td>
<td>3.3</td>
<td>3.9</td>
<td>3.7</td>
</tr>
</tbody>
</table>

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.
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 income level falls below the poverty line.

POVERTY ESTIMATION METHODOLOGY OF NATIONAL PLANNING COMMISSION

Food Poverty Line

First, NPC presumed 2,256 calories\(^8\) 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 (\textit{arhar, mas, masur, gram, khesari}, etc.)\(^9\). 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\(^10\) (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.

\(^8\) Estimated by the Food Research Laboratory of HMG as well as by the Food and Agriculture Organisation.
\(^9\) 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.
\(^10\) 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 \textit{ghee}; sweetening items; and tea and beverages. Nonfood items were clothing and footwear, education and health, fuel and light etc.
Table A.1
Food, Nonfood, and Final Poverty Line by Region and Rural/Urban Area, 1976/77

<table>
<thead>
<tr>
<th>REGION</th>
<th>Expenditure to Meet 2256 Calories&lt;sup&gt;11&lt;/sup&gt;</th>
<th>Lowest Average Actual Daily Expenditure on Food and Nonfood Items</th>
<th>Total Daily Requirement for Subsistence Level of Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>Urban</td>
<td>Rural</td>
</tr>
<tr>
<td>Eastern</td>
<td>1.21</td>
<td>0.65</td>
<td>0.32</td>
</tr>
<tr>
<td>Central</td>
<td>1.18</td>
<td>0.67</td>
<td>0.39</td>
</tr>
<tr>
<td>Western</td>
<td>1.50</td>
<td>0.76</td>
<td>0.45</td>
</tr>
<tr>
<td>Far Western</td>
<td>1.41</td>
<td>0.70</td>
<td>0.27</td>
</tr>
<tr>
<td>All Nepal</td>
<td>1.32</td>
<td>0.70</td>
<td>0.36</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Estimation Approach</th>
<th>Rural</th>
<th>Urban</th>
<th>All Nepal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Subsistence Consumption</td>
<td>32.1</td>
<td>20.0</td>
<td>31.5</td>
</tr>
<tr>
<td>Minimum Subsistence Income</td>
<td>37.2</td>
<td>17.0</td>
<td>36.2</td>
</tr>
</tbody>
</table>


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>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 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.

### Table A.3
**Summary of BNI estimation scheme, and poverty line, 1984/85**

<table>
<thead>
<tr>
<th></th>
<th>Terai</th>
<th>Hill/Mountain</th>
<th>Nepal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum daily calorie required per person per day</td>
<td>2140</td>
<td>2340</td>
<td>2250</td>
</tr>
<tr>
<td>Expenditure required to intake minimum calorie/person/day</td>
<td>3.06</td>
<td>3.86</td>
<td>3.50*</td>
</tr>
<tr>
<td>Expenditure required for other items of daily necessities</td>
<td>1.65</td>
<td>2.08</td>
<td>1.89*</td>
</tr>
<tr>
<td>BNI per person per day at 1985/86 prices</td>
<td>4.71</td>
<td>5.94</td>
<td>5.39*</td>
</tr>
<tr>
<td>BNI per person per year at 1985/86 prices</td>
<td>1719</td>
<td>2168</td>
<td>1967*</td>
</tr>
<tr>
<td>BNI per person per year at 1984/85 prices or poverty lines</td>
<td>1508</td>
<td>1930</td>
<td>1741*</td>
</tr>
</tbody>
</table>

Notes: * Weighted average: weights are 0.447 for the terai and 0.553 for the hill/mountain.


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 A4.
Table A4

INcidence of Poverty, 1984/85

<table>
<thead>
<tr>
<th></th>
<th>RURAL</th>
<th>URBAN</th>
<th>NEPAL</th>
<th>RURAL TERAI</th>
<th>RURAL HILL</th>
<th>RURAL MOUNTAIN</th>
<th>URBAN TERAI</th>
<th>URBAN HILL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidence</td>
<td>43.1</td>
<td>19.2</td>
<td>41.4*</td>
<td>35.4</td>
<td>52.7</td>
<td>44.1</td>
<td>24.1</td>
<td>14.5</td>
</tr>
</tbody>
</table>

Note: * Weighted average: weights are 0.9306 for rural and 0.0694 for urban area.

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).
Table A5

Recommended Calorie Intake

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

Recommended Per Capita Calorie Consumption (= 12063/5.68)

## Table A6
**Food Basket Composition for the Nepal 1996 Poverty Line**

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

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 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 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.

---

12 In the sense of “corrected for spatial rather than temporal price differences.”
### Table A7
**Incidence of Poverty, 1995/96**

<table>
<thead>
<tr>
<th>RURAL</th>
<th>URBAN</th>
<th>NEPAL</th>
<th>TERAI</th>
<th>HILL</th>
<th>MOUNTAIN</th>
<th>URBAN KATHMANDU VALLEY</th>
<th>OTHER URBAN</th>
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<td>42</td>
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<td>41</td>
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