

Chapter 5: Disaggregate Household Energy Requirements

5.1 Introduction

In the previous chapter, results were presented on total and average per capita household energy requirements calculated from data on private consumption expenditures contained in the national input-output tables prepared by the CSO and total primary energy intensities calculated for the period from 1983-84 to 1998-99. These totals and averages, however, mask big differences in the patterns and amounts of energy used among households. In this chapter, results of household energy requirements calculations using consumer expenditure survey data for households from the National Sample Survey (NSS) and the appropriate productive energy intensities presented in Chap. 3 are discussed. Variations in total energy requirements across different types of households emanating from differences in consumption patterns are discussed and factors affecting such variations examined. A comparison of the results from the household level analysis using National Sample Survey Organisation (NSSO) data with those of private expenditure data from the National Accounts Statistics data of the CSO, which were used for the analysis presented in the last chapter is also carried out, and discussed in Sect. 5.3.2 of this chapter.

5.2 Methods, Data Sources, and Data Preparation

Basic consumption data on detailed item-wise expenditures from the National Sample Survey Round 55 for the year 1999-00 are made use of to determine detailed energy requirements of households at a disaggregate level (NSSO 2002). The expenditure data are multiplied with appropriate

productive energy intensities calculated for the Indian economy for the year 1998-99 to determine the energy requirements of consumption.

5.2.1 An Introduction to the Household Expenditure Survey Data

The starting point for this analysis is the data on household consumption expenditure from the NSSO. The NSSO was set up in 1950 in India, by the department of statistics, in order to conduct periodic nationwide surveys on various facets of the economy. It conducts enquiries in the form of rounds usually of one year and sometimes of six months duration using an interview method and schedule approach of data recording. The household consumer expenditure schedule was canvassed quinquennially for the early years of the survey, but since 1986-87, an annual series of smaller-scale consumer expenditure surveys have been launched. At present, the NSS rounds reach the entire area of the country, involving separate and comprehensive coverage of rural and urban areas, with the exception of some very interior areas, and the disputed regions of the State of Jammu and Kashmir.

For each NSS round the household expenditure survey data is collected from a nation-wide probability sample of households by the interview method. The sampling design is stratified and includes two or more independent and interpenetrating sub samples. Weights for each individual household observation are provided for the sub-sample and with the combined sample estimate. The sample of households is drawn based on a two-stage stratified random sampling procedure. The first stage units are the census villages and urban blocks and the second stage comprises the households in these villages and urban blocks. The first stage units are selected circular systematically with probability proportional to the population and the villages and urban blocks are selected in the form of two or more independent sub samples. In the second stage, the households are arranged by means of livelihood (main occupation), and area of landholding in rural areas and monthly per-capita consumption expenditure in urban areas. The samples are selected circular systematically with a random start. In order to get adequate number of sample households from the affluent section of the society, the NSS 1993-94 survey, for the first time, stratified the households into affluent and others, based on the assets holding and monthly consumption expenditure. In the 1999-00 survey this practise was