CHAPTER 4

CONCEPTUAL FRAMEWORK AND METHOD OF DATA COLLECTION
Chapter 2 has shown that the Bangladesh economy provides the case of a somewhat dynamically stable low-level equilibrium. Despite considerable developmental efforts of the state, the economy does not demonstrate any significant tendency to move out of the prolonged stagnation. Nor does the economic trends indicate, despite tremendous population growth, the possibility of any imminent crash either. Chapter 3 has argued that among all the important approaches to rural development available in the literature, the involution and shared poverty approach, if slightly extended incorporating some relevant arguments of other approaches, can most appropriately explain the situation of an economy like Bangladesh. The present chapter will discuss the conceptual framework underlying the involution and shared poverty approach and the method of collecting primary data to be used in the chapters that follow.

The chapter is organized as follows: Section 4.1 will discuss the conceptual framework, section 4.2 will discuss the source of primary data and method of data collection, and section 4.3 will discuss the limitations of data.

4.1. Conceptual Framework of the Study

The conceptual framework of the present study is based on the extended involution and shared poverty approach to economic development-through-rural development. It will show
the chain of interrelationships among the important economic variables of our model economy. The conceptual framework will delineate the hypotheses of the study and point to the methodology to be followed to gather empirical evidence to the propositions generated therein.

We assume a peasant-subsistence economy where the density and the growth of population are tremendously high, agriculture is the overwhelmingly dominant sector of production and the size and the growth of the industrial sector are remarkably low, the initial distributions of income and assets are highly inequitable, and the state is carrying out multitudinous programmes to develop the economy and alleviate poverty as rapidly as possible, but with little success so far. The development efforts of the state include the programmes for technological change in agriculture,^1^ expansion of the nonagricultural sources of income in the rural areas, development of infrastructure, and advancement of the industrial sector.

The prospects for economic development and poverty alleviation through development of agriculture alone is highly limited due to certain inherent characteristics of the sector itself^2^ (Howlader, 1991a). Therefore, the ultimate objective of development efforts is to achieve

1. This includes water management, supply of modern inputs and credit, provision of extension services and training to the peasants.

2. The most important limitation of the agricultural sector is the fixed endowment or non-reproductive nature of its crucial resource-land.
industrial development. However, in the initial phase of implementation of the development programmes, the emphasis is put on development of the rural sector in order to mitigate poverty and improve the level of living of the rural population which constitute the vast majority of the total population and to create the necessary precondition for industrial development. Industrial development requires the availability of a large volume of savings and a wide market of home-made industrial products. In the early stage of industrial development, only a substantial development of the rural sector can fulfill these preconditions (Byres, 1977).

Population growth and developmental activities of the state are the fundamental factors to bring about change in the economy via their effects on a number of intermediate variables and proximate determinants of economic growth. The interaction of the effects of these factors determine the pace of actual development. The basic tenets of the involution and shared poverty approach are: the interaction of the effects of population growth and development efforts on the economy, coupled with the adaptive capacity of the people in the changing circumstances, engender an involutional process which enables the population only to

3. Byres, a neo-Marxist scholar, has argued that industrialization is the route-way from backwardness and the agrarian question cannot disappear until agriculture creates the conditions for industrialization. See Byres, 1977.
sustain themselves, at a lower level of living of course, and do not lead to any considerable transformation or development of the economy (Geerty, 1963; White, 1976). The agricultural sector may continue to remain stagnant, despite remarkable technological change there, in the sense that per capita output will not increase, although per acre output may significantly increase (Greertz, 1963). Even if per capita output in agriculture as well as non-agricultural income of rural households increase, so that the rural sector as a whole grows, stagnation in the overall economy may persist if the industrial sector does not rapidly grow.

In order to describe the conceptual framework we can utilize a schematic model of the economy as presented in Table A2.1 in Appendix 2. The model shows that population growth and development efforts are the main factors which ultimately affect the rate of economic growth and the incidence of poverty via their effects on a number of intermediate variables such as income, consumption and saving. On the other hand, population growth and development efforts also affect each other. Rapid population growth induces (rather compels) the people to adopt new technology of production in order to raise per capita productivity and to participate in development activities of the state (Boserup, 1965). However, population growth and development programmes will have contradictory effects on the intermediate variables and determinants of growth.
Population growth will reduce per capita landholding, will increase unemployment, and reduce returns to labour, which together will reduce per capita income, consumption and savings of the rich households, and thus dampen the prospects for industrial development and economic growth and increase the incidence of poverty. But development programmes will increase agricultural productivity and employment, raising the level of per capita income. Increase in per capita income may increase consumption of industrial products and savings, which will hasten industrial development and increase growth rate of the economy. Once the growth rate rises, savings and demand for industrial goods will increase, which will raise the growth rate further. A process of self-sustained growth will thus crop up. Again, as the growth rate starts raising, the incidence of poverty may be reduced through increased employment in industries and/or through redistributive policies of the state.

But the reality is more complex than is postulated above. A closer examination of the model in the light of the involution and shared poverty approach to rural development will bring forth the complexities involved therein and present the more realistic picture of the model economy.

Increased per capita income and reduced inequity in income distribution are the most important prerequisites for
self-sustained economic growth. The rural households may derive their income from land, labour and capital. Land and labour are the main inputs of agricultural production under traditional technology, while agricultural production under modern technology requires all the three inputs. On the other hand, labour and capital are the main inputs of non-agricultural productions and business. Nevertheless, land is the most important determinant of income for most of the peasant households.

Population growth affects land, income and the pace of differentiation of the peasantry. A household can obtain land in three major ways: through inheritance, through net transaction, or as gift. The land market is yet to be sufficiently developed. The peasants try to avoid selling land even under extreme pressure of poverty, most often by self-deprivation (Kantsky, 1899: 9). Gift is not very common. Inheritance is the main source of land for most households (Kocher, 1973; Chambers, 1983). Population growth reduces the inherited land of all households which have more than one successor. Thus, landholding of most households declines over generations. However, during a particular generation, landownership of most households may remain unchanged (Bhaduri et al, 1986; Ullah, 1990). But, even during a generation, per capita landownership will decline as the size of households increases over time (Geertz, 1963).

There was high inequity in the distribution of land in
our model economy even in the initial period. The initial inequity has been exacerbated over time by different social and sociological/demographic factors. Population growth, via its effects on inheritance and family size, complicates the pace of differentiation of the peasantry. While the average size of holding declines as population grows, the rate of decline may not be uniform for all households. As a result, the rate of differentiation may increase or decline or even be zero for a long time. However, the differentiation caused by the sociological factors refers only to the differences in the accumulation and consumption, which in itself does not indicate socially significant differences at the level of production. In other words, differentiation of the peasantry caused by

4. In the areas constituting Bangladesh today, the distribution of land was highly inequitable even in the earlier decades of the present century (Mukherjee 1957; Ishaque, 1946) and inequity increased during Pakistan Period (Alamgir, 1975).

5. The classical Marxists believe that it is mostly the political-economic factors, such as expansion of market and commoditization of land, which cause differentiation of the peasantry (Marx, 1974; Engels, 1970; Lenin, 1977). On the contrary, Chayanov (1987), the populist scholar, argued that the sociological/demographic factors are the main causes of differentiation. But Bernstein (1977), a neo-Marxist, observed that both types of factors contribute to the pace of differentiation and accordingly, there are two types of differentiation - sociological differentiation and materialist differentiation.

6. Taussig (1978), a neo-Marxist author, observed that inheritance and change in family size mitigate differentiation. This may not necessarily be so. If population growth is higher in the lower size-classes of the peasantry than that in the higher size-classes, then inheritance and change in family size will increase the rate of differentiation.
the sociological factors such as population growth will not contribute to increase of investment and production. 7

Thus, as population grows, per household and per capita land ownership decline, reducing per capita land income. Population growth may also increase sociological differentiation of the peasantry.

Development activities of the state, the other important determinant of the dynamics of the rural economy, also affects land income and the differentiation process, but a bit differently. Development programmes increase adoption of modern technology in agriculture which raises per acre productivity of land. Furthermore, with increased implementation of development programmes, market expands, capitalism develops in agriculture and land becomes increasingly commoditized, which increase differentiation of the peasantry in the materialist sense 8 (Taussig, 1978; Raikes, 1978; Bagchi, 1982; Abdullah et al, 1976; Bertocci, 1976).

Thus, Population growth and development programmes affect land income and differentiation of the peasantry diversely, and their effects are partly conflicting. The

7. Bernstein considered that the process of differentiation and thereby the growth of large farms will increase investment and adoption of modern technology in agriculture. But he was specific in his argument: he admonished that it is only the differentiation in the materialist sense which polarizes the peasantry along the class lines and that the big peasantry, created thereby, undertakes productive investment. See Bernstein, 1977.

8. Chayanov called it the social differentiation and the Marxists called it differentiation along the class lines.
resultant net effects on the peasants are determined by the relative strength of the effects of the two factors. Geertz (1963) thought that the effects of the two will cancel each other and per capita land income will remain constant, up to a certain period, after which it will decline. It can be added, however, that the possibility of increasing per capita income in the initial phase of implementation of development programmes can not be completely ruled out. Population growth will increase the pace of sociological differentiation of the peasantry and development programmes will differentiate the peasantry along the class lines. However, in the peasant-subsistence economy like our model economy, the land market is likely to grow at a very slow rate in view of the inherent reluctance of the small peasants to sell land. Therefore, sociological differentiation is likely to dominate over the materialist differentiation for a long time.

Population growth and development programmes also affect labour income via their effects on the labour market. The development efforts of the state increase agricultural employment by enhancing adoption of labour-intensive modern technology in agriculture. Besides, the development activities expand the non-agricultural occupations and increase

9. In Geertz's view, the constancy of the per capita land income is an important feature of agricultural involution and the declining per capita land income is a symptom of the limits of involution. See Geertz, 1963.
employment opportunities outside agriculture. Population growth increases the supply of labour. Since increasing population pressure also induces increasing outmigration of labour, the potential supply may be less than the actual supply of labour. But the development activities are likely to grow at a slower rate than what is required to absorb the growing population. Hence, even the actual supply of labour will be much higher than the available employment opportunities. Given this, the bigger segment of the rural population who depend mainly on labour income have to adopt a variety of survival strategies.10 Increased pressure of population on employment opportunities will reduce returns to labour. Since returns to labour in most occupations can barely support a household, the burden of subsistence is shared by greater number of household members. Each household will derive income from a great variety of sources, so that occupational multiplicity of households will increase. Moreover, increasing number of household members will work in each occupation and will work for longer duration. Thus, employment will increase, work-duration may prolong, but returns to labour will definitely fall.11 Nevertheless, per household labour income is more likely to rise due to increased participation

10. Kautsky observed this phenomenon long ago. See Kautsky, 1899.

11. Geertz (1963) and White (1976) considered this behaviour of the labour market as the features of involution.
of household members in economic activities, although per capita labour income will decline in most occupations.

The labour market may accelerate the process of rural differentiation. The households which own higher amount of land are likely to avail of the better jobs and occupations for their members, while the members of lower-size-classes and landless households will find employment in low-grade jobs.

Development activities of the state will increase capital income as well. With increased implementation of development programmes, markets in the rural areas will expand which will induce rapid growth of trade and business. However, only the few households which have a considerable amount of wealth at their disposal will be able to earn increasing capital income from trade and business.

The net effects of population growth and development efforts of the state on income are: land income per household will increase, although land income per capita may or may not increase; labour income per household will increase, but labour income per capita may even decline; and capital income of only the wealthy households will increase. Thus, total income per households will increase, but total income

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12. Rural differentiation refers to the process of differentiation among all of the rural households including the landless and the non-peasant households (Lipton, 1968a).
per capita may not increase. However, due to increasing rural differentiation, total income of only a few households will substantially increase, total income of some households will increase only marginally, while total income of the vast majority of households will remain almost constant or may even decline.

Despite considerable development activities, therefore, income of the vast majority of households will remain lower than required to meet the basic expenditures and these households will not be able to increase consumption of industrial goods or saving. They will survive by sharing out of employment opportunities among themselves and by reducing per capita consumption level and nutrition standard. 13

Income of a small proportion of households will substantially increase. These households will rapidly increase consumption of industrial goods 14 and their economic surplus will multiply. But, most of the surplus will be channelled into unproductive uses such as purchasing land and gold, building "improved" houses, spending for rites and ceremonies etc., either to heighten their prestige

13. The sharing out of employment opportunities and reduction of per capita consumption level and nutrition standard have been called by Geertz (1963) and White (1976) as "sharing of poverty".

14. White (1976) observed rapid increase of consumerism among the rich households in rural Java.
and status (Lipton, 1968b) or due to non-availability of sufficient investment opportunities (Schultz, 1964). Thus, despite substantial increase in income of the rich households, saving will rise only marginally. Due to sluggish growth of savings and insufficient increase of demand for industrial products, the industrial sector will fail to sufficiently expand. As a result, there will be no discernible increase in the rate of economic growth and the economic impasse will persist.

Thus, it appears that if some relevant arguments of neo-Marxists, populists and neo-classicists are added to the propositions of Geertz and White, the involution and shared poverty approach can provide a comprehensive picture of the dynamics of a densely-populated developing economy. The following picture of the economy emerges from the conceptual framework: with increased development activities, the features of agriculture involution will become more and more pronounced, differentiation of the peasantry and rural differentiation will increase, and pervasive poverty and economic stagnation will persist.

The following propositions as regards the behaviour of the important variables of rural development emanate from the conceptual framework:

15. See Natham Rosenberg (1960) for a detailed discussion on this possibility.

16. Only the rich households which constitute only a small portion of total households will be able to increase demand for industrial goods.
(a) With increasing population pressure, per capita landholding declines, although landownership of most households may remain unchanged, and the peasantry differentiates in both the sociological and the materialist senses, but the rate of sociological differentiation will be higher;

(b) Occupational multiplicity of households and employment in terms of the participation rate and work-duration will increase, but returns to labour will decline;

(c) Per capita agricultural output may remain constant but per household agricultural and non agricultural income will increase, and rural differentiation will escalate; and

(d) Per capita consumption level and nutrition standard for a considerable proportion of households will decline, but a small portion of households will have a large amount of surplus. However, most of the surplus will be directed into unproductive uses and only a small portion will be saved.

4.2. Methodology

The proposition of the involution and shared poverty approach are quite extensive, involving change in a large number of variables of the rural economy. No study has so far examined all the major aspects of this approach in the context of the "raw realities" of rural life. Although Geertz (1963) developed the concept of agricultural
involution, his observations on the features of involution are not sufficiently based on empirical evidence. White (1976) coined the name of the approach, but intensively examined only its employment aspects in the context of rural Java. No study has been carried out along this line in the context of the Bangladesh economy, despite that the similarities between the Javanese and the Bangladesh economy are remarkably evident.

Adequate data were not available in the secondary documents and survey reports to conduct empirical study along this approach in the Bangladesh context. Therefore, an intensive study on rural Bangladesh required primary data from the villages of Bangladesh.

For the purpose of the present study, data were collected from two villages of the south-eastern part of Bangladesh. 17 This section discusses the method of collecting data. The section is organized as follows: subsection 4.2.1 discusses the method of selection of villages and households, subsection 4.2.2 discusses the method of collecting data, and subsection 4.2.3 discusses the method of processing and analysis of data.

17. In view of the severe constraints of fund, it was not possible to collect data from a nationally representative sample of villages.
4.2.1. **Method of selection of households**

The basic units of the present microlevel study are the households. The households were selected for survey in three stages: First, the area of study was selected. Second, the villages were selected from the area. Finally, the households were selected from the villages.

The involution and shared poverty approach is primarily concerned with the interacting effects of population growth and development programmes on actual development of the rural economy. It was, therefore, appropriate to select the area where the density of population is very high even within Bangladesh and where the major development programmes have been implemented. Comilla and Noakhali regions\(^\text{18}\) satisfy these criteria.

The density of population is highest in the Comilla region.\(^\text{19}\) The development programmes are also oldest in the Comilla region. In 1960s the famous cooperative movement and the programmes for integrated rural development, now known as the Comilla model of development, were for the first time launched in Comilla region. These programmes

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18. A region refers here to a former district. In 1984 the former subdivisions were upgraded to districts. Thus, a former district or a region now comprises several districts.

19. The Dhaka and Chittagong regions were not considered because the density is high there due mainly to the location of the biggest cities of the country.
revolutionized agriculture in the region, resulting in spectacular increase of employment, production and income of the households (Raper, 1970). It is from this region that the model of rural development gradually spread to other regions of the country. Next to Comilla, Noakhali along with Pabna and Bogra are the most densely-populated regions in Bangladesh. However, Comilla and Noakhali are juxtaposed regions and Noakhali is one of those regions where the comilla model of rural development spread first. Hence, we selected comilla-Noakhali area, which comprises former Comilla and Noakhali districts, as the area of our village study.

Two villages, one relatively developed and the other backward, were selected from the study area for survey. The villages were selected almost purposively. The propositions to be examined in the study, as discussed in the conceptual framework, relate themselves to the change in the household economy of the villages. Therefore, the study required data for different years. The present survey

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21. The size of the study area may appear very large—in fact, too large—for selection of only two villages for survey. It was, however, necessary to choose a relatively large area for selection of villages. Had the area been smaller, such as only Comilla region, the characteristics of the villages were likely to be more similar, rendering the study of the differences between the contrasting situations difficult. On the contrary, if the villages were selected from two regions which are distant from each other, the ecological basis of comparison between them might have been greatly reduced. Hence, the villages were selected from a compact area which is a bit large.
purported to collect data for the current year, 1991 and, in addition, attempts were also made to collect data on some variable for 1972. The data for 1972 were to be collected in the current year utilizing the memory recall method and, therefore, the possibility of some misrepresentation of facts due to memory lapses was likely to be there. We wanted to select the villages where at least two socioeconomic surveys were conducted in two different years in the past, so that data gathered from these surveys (including the present one) can show a trend of the household economy and community characteristics on their own and, furthermore, the trend can provide an additional check on the quality of data, specially the data for 1972, collected in the present survey.

We decided that the developed village should be selected from within Comilla thana which has been constituting the 'laboratory area' of the Bangladesh Academy for Rural Development (BARD) since 1960s. Although a number of studies have been carried out in different villages of the BARD laboratory area, it is only Dhaneshwar where two surveys were already conducted: one by Qadir (1960) in 1960 as the baseline survey for BARD and the other by Schendel (1981) in 1978. Schendel observed that Dhaneshwar is a relatively developed village in Bangladesh. Hence,

Dhaneshwar was tentatively selected as the developed village for the present survey. On the other hand, among the backward villages of the study area, Hassanpur is the only one where two surveys were already conducted—one by Lasson (1981) in 1980 and the other by Ullah (1990) in 1986. Both Lasson and Ullah considered Hassanpur as a backward village. Therefore, Hassanpur was tentatively selected as the backward village for our survey. The final selection of the villages was done based on the findings of a pilot survey which showed that Dhaneshwar was a developed village and Hassanpur was a backward village even in 1991.

The village study purported to trace the change in the household economy of the villages which took place during the post-liberation period—the period between 1972 and the current year of the survey, 1991. For this we needed to intensively survey only those households which existed both in 1972 and 1991, henceforth to be referred to as the cohort households. Selection of the cohort households was easier in village Dhaneshwar where there was smaller number of households—only 105. The pilot survey mentioned earlier also collected information as regards the year of inception of each household. Then the households which were created

23. The surveys conducted in other backward villages of the study area include: SARM (1976), Adnan (1978), Arif and Munin (1980), Rahman (1980), and Lasson (1981b).

24. See Appendix A2.3 for a description of the villages.
before 1972 were chosen for in-depth survey. There were 59 such households in Dhaneshwar.

Hassanpur is a larger village where there were 347 households in 1991. In order to choose the cohort households for in-depth survey, we first selected a sample of 105 households. The size of the sample was kept equal to the number of households in Dhaneshwar to maintain comparability of the villages. The sample was selected by using the technique of stratified random sampling. At the time of the pilot survey three group sessions of a cross-section of villagers were conducted, which revealed that a household in Hassanpur requires a per capita income of at least Taka 300 per month to maintain itself at even a minimum level of living. The pilot survey also collected information on the number of household members, amount of owned land, amount of paddy produced in a year, major sources of income, and approximate amount of annual income for all households of the village. Based on these information, the households were categorized into three broad income-strata: low-income stratum wherein per

25. Several researchers have selected the same number of household from the larger village as that which existed in the smaller village. See Majumder, 1987.

26. The households were not stratified according to landownership because landholding is not the sole source of income for most of the rural households. It is possible that a household which owns no land or very small amount of land earns a much higher income than many households which own higher amount of land. Given this, the differential economic status of households is better reflected through income-strata than through landownership-strata.
capital monthly income of a household is less than Taka 300; middle-income stratum wherein per capita monthly income of a household is between Taka 300 and 600; and high-income stratum wherein per capita monthly income of a household is above Taka 600. As shown in table A2.2, the number of households found in different strata were: 62 in the high-income stratum, 111 in the middle-income stratum, and 174 in the low-income stratum. Then, 35 households were randomly selected from each stratum. Finally, the cohort households were selected from each stratum for in-depth survey. There were 68 cohort households in all strata.

27. Our main concern in the village study is to capture the change in the economic behaviour of the rural households with respect to increased population pressure and development efforts. A study of the behaviour requires that the size of sample (in each cell) should be sufficiently large. Amemiya (1981: 24) argued that statistically many means more than 30. In every test, the fundamental assumption is that the variable subjected to the test is normally distributed. T distribution tends to be normal when n is over 30. However, the number of observations should not be far above 30, because the large sampling theory does not apply if the sample size is too large (Kish, 1965: 50). The size of the sample in the present study satisfies these statistical criteria of sampling. It may also be mentioned that the sampling technique used here does not enable us to obtain the measures for the whole village with the measures obtained from survey of the sample by simple multiplication, which the proportionate sampling technique does. But the problem of the proportionate sampling technique is that the number of observations obtained by it may be less than 30 in some cells, which is unwarranted in a study of household behaviour.

28. Among the cohort households, 15 were in the high-income stratum, 23 in the middle-income stratum, and 30 in the low-income stratum. See Table A2.2.
4.2.2. **Method of data collection**

Data were collected during the whole year of 1991. Data were collected for both the base year (1972) and the current year (1991) of the study. Since it was neither possible nor desirable to collect in 1991 all the required data for 1972 based on memory recall of the respondents, the area of information to be collected for 1972 was narrowed to the most vital matters only. Direct interview of the household heads with the structured schedule was the main technique of data collection, although in some cases the techniques of interview of the neighbours, consultation of government documents and direct observation had to be used.

The study required data on a large number of variables. It appeared from a careful examination of the nature of variables that requirement of frequency of interview widely varies among them. While a simple once-for-all interview is sufficient for collecting data on some variables such as the demographic characteristics of household members, education and occupation of household members, status of house, etc., monthly or weekly or even daily interview is needed for collecting data on some variables to wipe out, or at least minimize, the possibility of memory lapses or misrepresentations.

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29. Data were collected by a research team comprising the researcher and four male research assistants. The research team stayed in the village throughout the whole year - two research assistants were deployed in each village while the researcher used to stay in each village in fortnightly rotation.
tion of facts on the part of the respondents. The variables were divided into six categories by requirement of frequency of interview and six different schedules, one for each category of variables, were used for data collection. The schedules were: general household schedule, employment schedule, costs and returns of paddy production schedule, daily food-intake schedule, non-paddy income and non-daily consumption schedule, and saving and investment schedule.

The general household schedule was conducted to collect information on age, sex, education and main occupation of the household members, the household members who have gone abroad for work in different years and the household members who work in cities and towns of the country, the amount of cultivable and homestead land under current ownership of the household, the amount of inherited land, main occupations in 1972, amount of land owned in 1972, and the amount of land bought, sold and gained or lost in non-market ways in different years since inception of the household, etc. The schedule was administered once at the beginning of the survey and again on the eve of termination of the survey in order to know whether any considerable change occurred during 1991 itself. Since the rich households in rural Bangladesh are suspect of suppressing the accurate information regarding landownership, information on their landholding were also collected from the local sub-registrar's office as well as from the local people. These information were used to cross-examine the heads of rich households till
they disclose the exact information.

The employment schedule collected daily information on the number of hours worked and returns \(^{30}\) earned on each day by each household member aged 5 years and above \(^{31}\) for each directly productive activity. \(^{32}\) This schedule was administered once in every week of the year. \(^{33}\) Each household was visited on a scheduled day of the week to collect information on the activities performed, the number of hours worked and returns to labour earned by the household members.

30. Information on the returns earned from operated land and agricultural production in homestead land were not collected in this schedule; they were computed using the information collected in the costs and returns of paddy production schedule and the non-paddy income and non-food consumption schedule.

31. According to the conventional definition of labour force, active population includes all persons aged 10 years and above. But in a rural agrarian society children below 10 years sometimes significantly contribute to household production and income. In view of this, Khuda (1985b) included all persons aged 10 years and above in the active population and rightly so he did.

32. The directly productive activities refer here to the activities of household members which directly contribute to household production and income. These activities do not include household activities, social or political activities, reading, playing, etc.

33. Most of the employment studies in Bangladesh are based on data collected through snap-shot surveys or seasonal surveys. See Haabibullah (1963); Masum, 1977; and Ahmed, 1978. Data used in these studies are likely to terribly suffer from biases resulting from memory lapses of the respondents. Khuda (1985a and 1985b) collected daily data on the use of time by the household members. His technique appears to be most appropriate, but it is a highly time-consuming and cost-intensive method of data collection for the researchers. In view of the severe constraints of time and fund, the present survey had to collect data only weekly.
on each of the previous seven days. The schedule contained both the closed and the open-ended questions.

The costs and returns of crop production schedule was administered to assess production of crop and productivity of land in 1991 and 1972. The households in Dhaneshwar produced three paddy crops - boro, aus and aman, and winter crops in both 1972 and 1991. The Hassanpur households produced aus paddy, aman paddy and winter crops in 1972 and boro paddy, aman paddy and some winter crops in 1991. The Dhaneshwar households produced both the high yielding variety (HYV) and the local variety of each paddy in both 1972 and 1991, while the Hassanpur households produced only the local variety of paddy in 1972 and both HYV and local variety in 1991. The schedule was administered twice in every crop season - once immediately after sowing was completed and again immediately after harvesting of crops was completed. During the interview after sowing, information were collected on amount of operated land under different tenancy status in 1991 as well as 1972, the amount of operated land under HYV and local variety in 1991 and 1972, the number of mandays of family labour and hired labour used, wage paid to hired labour, cost of

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34. In a Bangladesh village the tenancy status of operated land and the operated land under different varieties of crops change quite infrequently - they remain more or less constant for many years for most households. Therefore, it was not difficult for most of the respondents to provide at least approximate information on these variables for 1972 based on memory recall.
hiring power-tiller and bullock power, cost of irrigation, the amount of seed used and cost of seedling, the amount and value of different varieties of fertilizer and pesticide used, etc. During the interview after harvesting, information were collected on the cost of harvesting, cost of threshing, output produced and output received. 35

The study required data on annual consumption expenditures of households. Expenditure on food items constitutes a considerable portion of consumption expenditure of rural households. Expenditure on food is a daily variable by nature since food is consumed daily. It is not possible to assess the annual amount of an item which occurs daily. It is also highly difficult to undertake daily visit to the households for one full year, given the constraint of fund. In the present survey the daily intake schedule was administered once a week during one month in 1991. The research assistants 36 visited the households on one day of each week, without any prior information of their visit. During the visit, the major food items taken for cooking were weighted and the amount of minor items (such as spices) gauged for each meal of the day. The total amount of each item consumed in the day was calculated at night, after the items were taken for cooking for the

35. Output received = gross output produced - amount of gross output taken by the sharecroppers + amount of gross output obtained from the landlord.

36. Four female research assistants were deployed in each village specifically for administering this schedule.
final meal (dinner). Information on the amounts of in-between snacks consumed in the households were also obtained at night. The quantities of food items were transformed into values at the current prices prevailing in the local markets. The amount of each food item consumed in each meal and the total amount and value of all items consumed in the day were recorded in the schedule.37

A rural household may also derive income from sources other than paddy production, such as production of vegetables, fruits and trees in the homestead land, production of fish, chicken, duck, goat and cattle, and service, trade and business, day-labour, and remittances. On the other hand, a rural household also spends income on the items other than the food items consumed daily, such as feast, rituals and ceremonies, clothing and foot-wear, household effects and consumer durables. The non-paddy income and non-daily consumption expenditure schedule was administered to collect data on the costs and returns of non-paddy agricultural crops, on amount of income derived from different non-agricultural sources, and expenditures for consumption items

37. The Household Expenditure Surveys of the government of Bangladesh collects data on food expenditures through a snap-shot interview. This is a highly crude method of collecting data on food expenditures and data collected thus cannot be reliable. Ahmed and Hassan (1983) adopted an appropriate technique of collecting data on food-intake: they visited the households on a day and weighted the food items. However, the amount of per capita daily food-intake or the amount of annual consumption expenditures of households cannot be assessed based on data of only one day of the year. The technique adopted here appears to be slightly more efficient and realistic.
other than the items of daily food intake. This schedule was administered monthly, since the items of information included in this schedule occur to the households infrequently and irregularly.

The investment and saving schedule was administered only once, in the first month of the following year, in order to obtain data on various investment expenditures incurred during the whole year of 1991 and on the amount of money saved in different assets as accumulated on the last day of the year. Saving is a highly sensitive variable to the peasants and the respondents rarely provide accurate information on the amount of savings. Data on savings were also collected from all the branches of banks located near the villages and the post offices. These data were used to check accuracy of information obtained from the respondents and cross-examine them to get at the true amount.

In addition to these, some information were collected outside the structured schedules. Data on the daily work-duration in and returns to labour from such low-grade activities as rickshaw-pulling, petty-trading and shop-keeping for 1972 were collected from the villagers who were engaged in those activities in 1972. These data were used

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38. A letter of request for cooperation with the researcher, addressed to the managers of local branches, was obtained from the head office of each commercial bank which had branches in the locality of the study villages. This letter was extremely helpful to the researcher for collecting data on saving from the banks.
to trace the change between 1972 and 1991. The Hassanpur households did not produce any aus paddy in 1991, although they had produced it in 1972. Data on costs and returns of aus paddy were needed to compare total paddy produced in 1991 with that in 1972. Aus was produced in the neighbouring Anandapur village in 1991. Data on aus paddy were collected form Anandapur through a group discussion with the aus-growers. Data on the current prices of consumption goods were obtained from the nearest markets.

4.2.3. **Processing and analysis of data**

Most of the data were processed through computer services. Only the data for which the number of observations was very small were processed manually. The variables for which data were collected weekly or monthly were transformed into annual values before data were set for tabulation. The bivariate, multivariate and cross-tables were computed for all the important variables for each village separately. In the tables the households were classified into size-classes, occupation groups and income groups following the classification found in the government documents in order to compare the figures with the corresponding national figures.

The method of analysis has been discussed in details in the text of the respective chapters that follow.
4.3. **Limitations of Data**

Some limitations of data of the survey are apparent. First, the number of villages selected for the survey was too small to represent the whole of rural Bangladesh. Second, data on daily time-use by the household members were collected at the end of every week based on memory recall, so that some possibility of memory lapses on the part of the respondents remained. Data on daily food-intake were collected only for four days of the year, the number of days being too low to provide the average of daily food-intake for the whole year. Third, data for 1972 were mostly based on memory recall and it is likely that the respondents could not provide the exact information due to memory lapses. Finally, the number of observations in a cell of the tables was too small, which did not permit much use of the standard techniques of statistical analysis.

Despite all these limitations, the survey has certain clear advantages. The village studies carried out so far in Bangladesh are too narrow in their coverage and, therefore, fail to give out all the relevant complexities of the inter-relationships among the crucial variables. The present survey generates a comprehensive set of data allowing intensive investigations into the dynamics of the rural economy. In spite of the severe constraints of the survey, most of the data were collected utilizing the techniques which
appear to be more efficient than those used in the previous surveys. For 1972, some information were collected directly, based on memory recall. The directly collected information were on those variables which occur quite infrequently in the life-time of households, so that it is not always difficult for the household heads to remember them for a long time. This notwithstanding, these data should be treated as approximation of the true values, which can well be used for rough assessment of the change which occurred during 1972-91.