CHAPTER 1

Introduction

This thesis attempts to describe and analyse the levels and sources of rural household incomes in an agrarian economy. My study attempts to quantify rural household incomes from various sources, and to investigate inter-household patterns of income generation. While the thesis deals with conceptual issues in this field, the study of household incomes has been conducted in the special context of rural West Bengal.

Income is an important component of the standard of living. Income-poverty and inequality in the distribution of income are major features of deprivation and underdevelopment in India, and a major cause of poor social opportunity and of unequal development. India’s rural poor form the bulk of the world’s rural poor, and this makes the study of rural household incomes a pressing research concern. Poverty in India is generally measured and studied in the context of consumption-poverty because of the availability of large-scale survey data on consumption expenditure. By contrast, there are no large-scale data on household incomes in India. The absence of data has limited the scope of research on the processes of income generation and distribution. It is thus important to study the levels and sources of household incomes, the dynamics of income generation and the social distribution of income in order to understand the causes and nature of poverty.

1.1 ASPECTS OF THE WEST BENGAL EXPERIENCE

West Bengal provides a special – and in many ways unique – context in which to study rural household incomes in India. Institutional transformation in the countryside was a major feature of rural change in West Bengal. While rural policy concentrated on agricultural growth in most parts of India, development planning in West Bengal since
1977 emphasised, for an extended period, land reform and the decentralisation of power and resources to institutions of local government, as well as production growth.

1.1.1 Agricultural Growth

General income growth in rural West Bengal was based on accelerated agricultural growth from the early 1980s through the mid 1990s. This agricultural growth experience was quite distinct from the all India experience. Agriculture in West Bengal stagnated for three decades, that is, from the 1950s to the first years of 1980s (Boyce 1987). Agrarian conditions were characterised by backwardness in the relations of production, high levels of inequality and stagnation of the forces of production (Mishra and Rawal, 2002). From the early 1980s onwards, however, Bengal came out of the “agricultural impasse” (the term is from Boyce 1987), and agricultural output showed marked growth (Swaminathan and Saha 1994; Sen and Sengupta 1995; Swaminathan and Rawal 1998; Sanyal, Biswas, Bardhan 1998). The growth in agricultural production in West Bengal resulted from an increase in area under boro (rabi) paddy cultivation, and an increase in rice yields in kharif and rabi seasons (Swaminathan and Saha 1994; Swaminathan and Rawal 1998). Land reforms implemented by the Left Front Government preceded the growth in agricultural production. A special feature of the West Bengal experience is that while in most other States agricultural change was led by capitalist landlords and rich peasants, in West Bengal, small and middle peasants were major participants in the process of growth (Ramachandran, Rawal and Swaminathan 2002).

The West Bengal path to agricultural growth was unique in post-Independence India. In those parts of the rest of India that saw a rapid and substantial growth in agricultural

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1 Abhijit Sen has noted that "West Bengal, with a growth rate of over 7 per cent per annum in agricultural value added — more than two-and-a-half times the national average — can be described as the agricultural success story of the eighties" (Sen, 1992).
incomes, the major sources of surplus accumulation were capitalist landlords, rich peasants, and, in general, the rural rich. In West Bengal, by contrast, rural areas in the 1980s and early 1990s were characterised not by unequalising growth, but by a situation in which small and marginal cultivators were a major force in agricultural change and of the dynamism of the rural economy in the 1980s and 1990s.²

Agricultural production growth, however, decelerated in the 1990s (Ramachandran, Swaminathan and Bakshi 2009; Bhattacharyya and Bhattacharyya 2007; Chattopadhyay 2005; Swaminathan and Rawal 1998; Ramachandran, Rawal and Swaminathan 2002). While over a 26-year period, rice production in the State grew at a remarkable 3.5 per cent per annum, the growth spurt of the 1980s petered out by the latter half of the 1990s. The growth rate over the decade preceding 2006-07 was only 1.7 per cent (Table 1.1). The rate of growth of production of rice in West Bengal continued to be greater than the rate of growth of population. Nevertheless, with population growing at 1.04 per cent in the decade 2001 to 2006, the slowdown has serious implications for the livelihoods of small and marginal peasants in the State.³ This deceleration was part of an all-India trend; at the same time, it had features specific to West Bengal.

² See Sen and Sengupta (1995); Ramachandran, Rawal and Swaminathan (2002); Ramachandran, Swaminathan and Bakshi (2009)
³ District-wise growth rates are reported in Table A1.1 in Appendix 1.
Table 1.1 Exponential trend growth rates of area, production and yield of rice in West Bengal

<table>
<thead>
<tr>
<th>Period</th>
<th>Years</th>
<th>Area</th>
<th>Production</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980s</td>
<td>1980-81 to 1989-90</td>
<td>1.4</td>
<td>7.32</td>
<td>5.98</td>
</tr>
<tr>
<td>1990s</td>
<td>1990-91 to 1999-2000</td>
<td>0.37</td>
<td>2.08</td>
<td>1.71</td>
</tr>
<tr>
<td>2000s</td>
<td>2000-2001 to 2006-07</td>
<td>1.64*</td>
<td>1.27</td>
<td>1.64</td>
</tr>
<tr>
<td></td>
<td>1997-98 to 2006-07</td>
<td>-0.28</td>
<td>1.7</td>
<td>1.98</td>
</tr>
<tr>
<td></td>
<td>1992-93 to 2006-07</td>
<td>-1.14*</td>
<td>1.98</td>
<td>2.11</td>
</tr>
<tr>
<td>Full period</td>
<td>1980-81 to 2006-07</td>
<td>0.6</td>
<td>3.48</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Notes: *Not significant at 10 per cent level of confidence. Estimated using three year moving averages.

Source: Computed from Government of West Bengal, Economic Review (various issues), Government of West Bengal, Statistical Abstract (various issues), and reproduced from Ramachandran, Swaminathan and Bakshi (2009).

1.1.2 Land Reform

West Bengal has undergone important changes in agrarian relations brought about by land reform. Land reform in West Bengal had three components: redistribution of ceiling surplus land for cultivation, registration of share tenants through “operation barga” and distribution of homestead land.

Land reform measures benefited a large proportion of the population dependent on agriculture. On the redistribution front, as on February 2008 about 1,122,116 acres were redistributed to 2,971,875 million landless and marginal-cultivator households. This constitutes 22.6 per cent of the total land distributed in India (Ramachandran 2008). After 1994-95, joint title deeds have been issued to cultivators acquiring land through redistribution. In many cases, title deeds have been also issued singly in favour of women. Under “operation barga”, the total number of recorded bargadars in 2008 was 1.51 million (ibid.). In 2003, according to State Government estimates, 86 per cent of bargadars in West Bengal had been registered (Government of West Bengal 2004, p. 31-32). Another feature of land reform was the distribution of title deeds to house-site land.
Taken together, some 50 per cent of rural households benefited in some way from land reform (Ramachandran and Ramakumar, 2000). Although the extent of land available for distribution is now vastly reduced, land reform continues: as recently as 2007-08 the extent of agricultural land distributed under land reform was 10,953 acres (Ramachandran 2008).4

Dalit and Adivasi households were major beneficiaries of land reforms in the State (Government of West Bengal 2004; Bakshi 2008). Of the total number of land reform beneficiaries in West Bengal till 2005, 37 per cent were Dalits and 19 per cent were Adivasis (the combined total is thus 56 per cent); at the same time, the shares of Dalits and Adivasis in the total population were 23 per cent and 5.5 per cent respectively (Bakshi 2008).

Agricultural growth in West Bengal was made possible because of the removal, by means of land reform and the establishment of panchayati raj, of institutional fetters to growth. It has been pointed out that

the West Bengal example, where value added has grown faster than gross output, contrary to the trends elsewhere, suggests that greater efficiency in input use is possible through reform and devolution (Sen 1992).

_Land reform and rural household incomes._ The part played by Operation Barga specifically in raising incomes has also been established in the literature. In a paper on tenancy reform in the State, Banerjee, Gertler, and Ghatak (2002) showed that Operation Barga had a positive effect on agricultural productivity. The paper used district-level panel data for the period

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4 West Bengal was the first State to introduce regular elections to three tiers of panchayati raj institutions, and consciously to declare a policy of rural development based on a combination of land reform and local self-government (Rawal and Mishra 2002). The substantial proportion of elected members of panchayati raj institutions were from the income poor and socially-deprived sections of the society (ibid.).
1979-87 to study the relationship between district-level variations in the level of registration of bargadars and agricultural productivity, while controlling for other factors, and found that there was a positive association between the two:

Evidence based on aggregate district-level data from the Indian state of West Bengal suggests that the tenancy reform program called Operation Barga explains around 28 percent of the subsequent growth of agricultural productivity there (ibid.).

They also compared the cases of West Bengal and Bangladesh, and argued that rice yields grew faster in West Bengal than in Bangladesh despite the fact that Bangladesh had higher increase in public irrigation and higher rates of adoption of HYV. This, they argued, was because Operation Barga in West Bengal contributed to raising rice yields. In another paper, Dasgupta (2005) applied different crop-sharing contracts (with a higher share for landlords representing the pre-reform condition and a lower share for landlords representing the post-reform condition) on the Commission for Agricultural Costs and Prices (CACP) data, and showed that the incomes of sharecroppers went up. Given the particular set of assumptions, in the post-land-reform period, “higher crop shares have translated into higher net incomes” (ibid).

1.1.3 Distribution of Land Holdings

The distribution of ownership holdings of land in West Bengal is more equal than in other States of India. Most of the agricultural land in West Bengal is owned and operated by small and marginal farmers. According to NSSO estimates (2002-03), of the total households with ownership holdings in West Bengal, 97.8 per cent were marginal and small farmers and their share in total ownership holding was 83.9 per cent. NSS data record no
large land owners in West Bengal (NSSO 2006d). The NSSO estimates of the Gini coefficients of the distribution of operational holdings of land in the 15 States of India in 2002-03 show West Bengal to have the lowest concentration of operational holdings. The value of the Gini coefficient since 1970-71 has consistently been lower than the national average (Table 1.2). Moreover, the Gini coefficient of the distribution of operational holdings in West Bengal actually declined between 1971 and 2002-03. This is in contrast to States such as Punjab, Haryana, Rajasthan, and Gujarat, where inequality in the distribution of operational holdings increased between 1971 and 2002-03 (Mishra 2007).

Table 1.2 Gini coefficient of distribution of operational holdings, West Bengal and India, 1970-71 to 2002-03

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>West Bengal</td>
<td>0.433</td>
<td>0.494</td>
<td>0.43</td>
<td>0.313</td>
</tr>
<tr>
<td>India</td>
<td>0.567</td>
<td>0.596</td>
<td>0.591</td>
<td>0.557</td>
</tr>
</tbody>
</table>

Source: NSSO (2006c)

Social inequalities with respect to land ownership are also somewhat less in West Bengal than in other States. Bakshi (2008) constructed an index of access to land for cultivation for Dalit, Adivasi and non-Dalit/non-Adivasi households in India using data on area cultivated from the NSS Employment and Unemployment Survey of 2004-05. The index of access is defined as the ratio of the share of the total land owned by the social group to its share in total number of households. The results showed that, in rural India, the index of access to land for cultivation was 1.16 for non-Dalit/non-Adivasi households and only 0.45 for Dalit households. At the same time, in West Bengal, the index value for Dalit households was 0.8, substantially higher than the national average (ibid).

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5 By NSSO definition, marginal farmers own up to 1 hectare of land, small farmers 1 to 4 hectares, medium farmers 4 to 10 hectares and large farmers, above 10 hectares.
Land reform had a dual effect on the old landlords and what Mishra and Rawal (2002) call the "upper sections of landowners" in West Bengal (see also Ramachandran 1998). On the one hand, the old economic power of this class was curtailed and the extent of their landownership better monitored by the public authority and mass organisations than before. The average size of holding owned by these landowners was smaller than before and the "unrestrained increase" of the size of their holdings stopped (Ramachandran 1998; see also Mishra and Rawal 2002). Thanks to the combination of land reform and panchayati raj, the social and economic power of the old landlord class was curtailed and their control over day-to-day socio-political life undermined (Ramachandran 1998).

On the other hand, these "upper sections of landowners" still remain the largest landholders in their villages, cultivating the best land. Further, although they were unable indefinitely to expand the physical extent of their holdings, they could expand the economic size of these holdings by virtue of the fact that they were able to take advantage of the opportunities for growth in the post-land-reform environment (ibid).  

1.1.4 Non-farm Employment

The non-farm sector plays an important role in the rural economy of West Bengal. The proportion of non-agricultural workers in rural West Bengal increased from 29.3 per cent of all workers in 1991 to 41.6 per cent in 2001 (Census 2001). NSS Employment and Unemployment Survey estimates after 1980 indicate that West Bengal has a higher proportion of rural non-agricultural workers than all other States in India with the exception of Kerala (Chandrasekhar 1993; Bhaumik 2002; Kashyap and Mehta 2007). Non-farm incomes form a significant share of household incomes in the State. According to the Situation Assessment Survey of Farmers, 60.9 per cent of the total household income of

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6 Italics in original.
farmer households in West Bengal in 2002-03 was from wage earnings and non-farm business activities (NSSO 2005). Lanjouw and Shariff (2004) estimated the share of income originating from non-farm sources in West Bengal to be as high as 49.7 per cent of total household incomes in 1993-94, and to be roughly one-third in most other States. West Bengal thus presents a picture of a rural economy in which the non-farm incomes were substantial and an interesting and significant context in which to study rural household incomes in India.

1.2 Some Aspects of Agricultural Growth and Rural Employment in India

While West Bengal's experience has been distinct, it is not — and cannot be — insulated from the macro-economic policies of the Government of India as a whole. In particular, economic policies of stabilisation and structural adjustment have had wide-ranging implications for agrarian relations, for programmes of local government, and ultimately, for the variable that is the direct concern of this thesis, household income. There is, of course, a wide literature on the impact of the macro-economic policies of the last two decades on agriculture and rural development, one that deals with many facets of the rural economy, including, inter alia, economic growth, land relations, investment and credit, the economics of farming, food security, and research, extension and development (Ramachandran and Rawal 2010; Patnaik 2007; Sen 1992; Sen and Himanshu 2004; Reddy and Mishra 2009; Dev 2007; Nachane 2009; Panda 2009; Athreya 2009; Rawal and Osmani 2009). Two features of the findings of the literature — that is, the impact on agricultural growth and employment — have direct relevance to the subject at hand.

1.2.1 Recent Trends in Agricultural Incomes

From the 1990s, although India achieved higher growth rates of GDP than in the previous decades, higher growth was not evenly spread out across regions, sectors, and strata of the
population. High growth was concentrated mainly in the services sector, while agricultural growth slowed down after the 1990s. Table 1.3 shows the annual average growth rates of GDP in India. The growth rate of GDP in India doubled from 3.5 per cent per annum in the period 1950-51 to 1979-80 to 7.3 per cent per annum in the period 2000-01 to 2007-08. The increase in growth has mainly been on account of the service sector, which grew at 5.4 per cent per annum in 1950-1979, and at 9 per cent per annum in 2000-2007. The rate of growth of agriculture and allied activities increased in the 1980s relative to earlier decades, declined in the 1990s, and declined still further between 2000 and 2007-08.

Table 1.3 Growth rate of GDP (at factor cost in 1999-2000 prices), by source, India, 1950-51 to 2007-08, in per cent per annum

<table>
<thead>
<tr>
<th>Period</th>
<th>Agriculture and allied activities</th>
<th>Industry</th>
<th>Services</th>
<th>GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950-51 to 1979-80</td>
<td>2.1</td>
<td>5.4</td>
<td>5.4</td>
<td>3.5</td>
</tr>
<tr>
<td>1980-81 to 1989-90</td>
<td>4.4</td>
<td>6.4</td>
<td>6.3</td>
<td>5.6</td>
</tr>
<tr>
<td>1990-91 to 1999-2000</td>
<td>3.2</td>
<td>5.7</td>
<td>7.1</td>
<td>5.7</td>
</tr>
<tr>
<td>2000-01 to 2007-08</td>
<td>2.9</td>
<td>7.1</td>
<td>9</td>
<td>7.3</td>
</tr>
</tbody>
</table>

Source: Computed from Reserve Bank of India (2008)

The growth of agricultural wages and earnings has also slowed down in recent years. Chavan and Bedamatta (2006) used data from Agricultural Wages in India (AWI) and the Rural Labour Enquiry (RLE) to analyse trends in agricultural wage rates and wage earnings in 46 districts in 17 States in India for the period between 1964-65 and 1999-2000. They found that for more than half the sample districts, the growth of agricultural wage rates for both male and female workers was highest in the decade of 1980s. There was a "distinct slowdown" in the growth rates for both male and female workers in the majority of districts in the decade of the 1990s. Similarly, the growth of real agricultural wage earnings for male and female workers was highest in the period between 1987 and 1993-94 in the 35 years under consideration, after which the growth rate declined in the majority of States.
Further, according to both data sources, that is, AWT and RLE, the disparity between male and female wages increased over the years.

Eswaran, Kotwal, Ramaswami and Wadhwa (2009) studied the trends in real weekly earnings and real daily earnings in agriculture from NSS data and found that, at the all India level, weekly earnings grew at 2.5 per cent per annum and average daily earnings grew at 2.7 per cent per annum between 1983 and 2004. Taking decadal periods, the rates of growth of earnings were higher in the decade 1983 to 1993-94 than in the following decade, 1993-94 to 2004-05. The growth rate was very low in the period 1999 to 2004 (see Table 1.4). The slowdown in the growth of agricultural earnings happened at a time when non-farm GDP increased. Thus, according to the authors, it appears that the “growth in the non-farm GDP has not mattered much to agricultural earnings and poverty” (ibid).

Table 1.4 Annualised rates of growth in GDP and agricultural earnings in India, 1983 to 2004, in per cent

<table>
<thead>
<tr>
<th>Years</th>
<th>Non-farm GDP</th>
<th>Agricultural GDP</th>
<th>Agriculture weekly earnings</th>
<th>Agriculture average daily earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983-2004</td>
<td>7.1</td>
<td>2.6</td>
<td>2.5</td>
<td>2.7</td>
</tr>
<tr>
<td>1983-93</td>
<td>6.4</td>
<td>2.9</td>
<td>3.3</td>
<td>3.1</td>
</tr>
<tr>
<td>1993-2004</td>
<td>7.7</td>
<td>2.4</td>
<td>1.8</td>
<td>2.3</td>
</tr>
<tr>
<td>1999-2004</td>
<td>7.2</td>
<td>1.8</td>
<td>1.1</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Source: Eswaran, Kotwal, Ramaswami and Wadhwa (2009)
Notes: 1. GDP: GDP at factor cost at 1993-94 prices  
2. Agri GDP: GDP generating from agriculture, forestry and logging and fishing  
3. Non-farm GDP: Residual = GDP – Agri GDP  
5 Agri. ADE: Real daily earnings in agriculture, Rural Maharashtra 1999-2000 prices

1.2.2 Rural Employment

The growth of employment in India has not been commensurate with the growth of output in India. While the annual growth rate of GDP was 5.7 per cent in the 1990s and 7.3 per cent between 2000-01 and 2007-08 (Table 1.3), employment grew by only 1.2 per
cent per annum in the 1990s and 2.6 per cent per annum between 1999-2000 and 2004-05 (Table 1.5). Further, the rate of growth of agricultural employment was lower than the rate of growth of GDP in agriculture and allied activities. The growth of agricultural employment was only 0.4 per cent per annum between 1993-94 and 2004-05 (Table 1.5), while output in agriculture and allied activities grew at 3 per cent per annum between 1990-91 and 2007-08. Agricultural wage employment declined very sharply after 1999-2000.

Rural non-agricultural employment grew faster than agricultural employment. While agricultural employment grew at only 0.4 per cent per annum between 1993-94 and 2004-05, rural non-agricultural employment grew at 3.5 per cent per annum in the same period. During a period of slowdown in agricultural production, the increase in rural non-agricultural employment is often associated with a situation of distress and forced occupational diversification to low-productivity non-agricultural work (see Vaidyanathan 1986; Bhaumik 2002). However, inferences from macro-indicators must be supplemented by more disaggregated data for a more precise understanding of the actual changes that are taking place in the countryside.

<table>
<thead>
<tr>
<th>Sector/region</th>
<th>1993-94 to 1999-00</th>
<th>1999-00 to 2004-05</th>
<th>1993-94 to 2004-05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural self-employment</td>
<td>-0.5</td>
<td>2.9</td>
<td>1.0</td>
</tr>
<tr>
<td>Agricultural wage employment</td>
<td>1.1</td>
<td>-3.2</td>
<td>-0.9</td>
</tr>
<tr>
<td>Total agricultural employment</td>
<td>0.0</td>
<td>0.8</td>
<td>0.4</td>
</tr>
<tr>
<td>Rural non-agricultural employment</td>
<td>2.3</td>
<td>5.3</td>
<td>3.5</td>
</tr>
<tr>
<td>Urban non-agricultural employment</td>
<td>3.1</td>
<td>4.1</td>
<td>3.5</td>
</tr>
<tr>
<td>Total non-agricultural employment</td>
<td>2.5</td>
<td>4.7</td>
<td>3.5</td>
</tr>
<tr>
<td>Total employment</td>
<td>1.2</td>
<td>2.6</td>
<td>1.9</td>
</tr>
</tbody>
</table>

1.3 RURAL INCOMES IN INDIA: A SURVEY

At the very outset, we must emphasise that there are no official estimates of household income or income inequality in India. As we shall see, discussion of "income" disparities based on NSS data are, more often than not, based on the surveys by the NSS of household consumption expenditures. Thus, the bulk of the literature on rural household incomes (and my specific concentration is on the period after the green revolution) is based on diverse studies conducted in different parts of India using different sources of data and not on a single data source as reference point (as is the case with studies on employment or consumption poverty, which use NSS data). In this review, I shall try to highlight some specific issues on levels, distribution and sources of household incomes in India that have been raised in such studies.

In the absence of large-scale data on household incomes in India, there is no agreement on the levels of household incomes in the country. Estimates from large-scale household surveys, such as the surveys done by the National Council of Applied Economic Research (NCAER) in the 1960s diverged from national-level estimates from National Accounts Statistics prepared by the Central Statistical Organisation (Gaiha 1988). Household income estimates from contemporary small-scale household surveys have also diverged from each other due to differences in the definitions of income, differences in the scales of the individual surveys, and coverage. Table 1.6 summarise the levels of rural household incomes from some notable large-and-small-scale household income surveys in recent years (that is, after 1990).

The estimates of income in Table 1.6 are disparate, and do not allow us to draw any conclusions with regard to the levels of rural household incomes in India. In recent years, although there have been widespread signs of agrarian distress in India, the absence of
household income data have made the problem of low incomes difficult to analyse. There is a very strong case for research on methods of household income estimation and a need for a systematic data base on household incomes in India (some of the methodological issues of household income estimation are discussed in Chapter 2).

Table 1.6 Estimates of mean household and per capita income in rural India

<table>
<thead>
<tr>
<th>Survey</th>
<th>Year</th>
<th>Coverage</th>
<th>Mean annual household/per capita income (Rupees) (rural)*</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>All India surveys</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NCAER</td>
<td>2004-05</td>
<td>33 States and Union Territories</td>
<td>Rs. 22,400 per household and Rs. 4,712 per capita</td>
<td>Desai et al. (2010)</td>
</tr>
<tr>
<td>NSS SAS</td>
<td>2003</td>
<td>Farmer households, rural India</td>
<td>Rs. 25,380 per farmer household</td>
<td>NSSO (2005)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Village surveys</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICRISAT</td>
<td>2001</td>
<td>Two villages in Andhra Pradesh</td>
<td>Rs. 8,284 and Rs. 9,577 per capita</td>
<td>Deb et al. (2002)</td>
</tr>
<tr>
<td>UK DFID</td>
<td>2001-03</td>
<td>Six villages in Andhra Pradesh and six villages in Madhya Pradesh</td>
<td>Rs. 20,220 per household in AP and Rs. 19,265 per household in MP</td>
<td>Farrington et al. (2006)</td>
</tr>
<tr>
<td>IRRI</td>
<td>1996-97</td>
<td>Eight villages in Bihar</td>
<td>Rs. 47,236 per household and Rs. 7,296 per capita</td>
<td>Thakur et al. (2000)</td>
</tr>
<tr>
<td>IRRI</td>
<td>1996-97</td>
<td>Six villages in Chhattisgarh</td>
<td>Rs. 35,206 per household and Rs. 6,299 per capita</td>
<td>Janaiah, Bose and Agarwal (2000)</td>
</tr>
<tr>
<td>ICRIER</td>
<td>2004</td>
<td>Darjeeling district of West Bengal and Sikkim</td>
<td>Rs. 60,118 per household</td>
<td>Micevska and Rahut (2006)</td>
</tr>
<tr>
<td>Bhaumik</td>
<td>1999-2000</td>
<td>12 villages from 2 districts in West Bengal</td>
<td>Rs. 42,940 per household in the Hooghly district and Rs. 19,020 per household in Cooch Behar district</td>
<td>Bhaumik (2008)</td>
</tr>
<tr>
<td>Foundation for Agrarian Studies</td>
<td>2005-06</td>
<td>3 villages in Andhra Pradesh</td>
<td>Rs. 8,537, Rs. 6,308, Rs. 5,895 per capita in the three villages (median household income)</td>
<td>Ramachandran, Rawal, and Swaminathan (2010)</td>
</tr>
</tbody>
</table>

*All estimates at current prices*
1.3.1 Levels of Income Inequality

The absence of all-India household income data makes the estimation of income inequality in India problematic. In the 1960s and 1970s, a body of literature emerged on the measurement of income inequalities in India from pooled data from various sources (see for instance, Lydall 1960, Ahmed and Bhattacharya 1974, and Ojha and Bhatt 1962, 1964, 1974). This literature is discussed in chapter 2.

Azam and Shariff (2009) reported that the Gini coefficient for rural household incomes in India in 2005 was 0.5. They used data from a large-scale survey across the country conducted by the NCAER. This estimate is higher than the NSS estimate of Gini coefficient of consumption expenditure for 2004-05, which was 0.25 for rural India (using a mixed recall period) in 2004-05 (Government of India 2008).

The distribution of consumption expenditure is often used as a proxy for measuring income inequality in India. For example, the World Bank's data set on income distribution uses consumption expenditure data for India. By its very nature, consumption expenditure is more evenly distributed across households than incomes, and any measure of income inequality based on consumption expenditure data will underestimate actual income inequality. In fact, in Palma's (2007) analysis that used World Bank data to rank nations according to the Gini index of inequality, India was grouped among the nations forming the second lowest tier of inequality in the four layers of inequality across countries. Rawal and Swaminathan (forthcoming) argued that this estimate of inequality was low because consumption expenditure data were used rather than data on household incomes or wealth, and they substantiated their claim with evidence from village studies in different parts of

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India. According to the authors, income inequality in rural India is of the same order as in the high-inequality Latin American countries (ibid).

1.3.2 Social Inequalities and Household Incomes

One of the concerns of this thesis is to analyse the patterns of social inequality in household incomes and occupations. In India, social discrimination is, of course, an important cause of inequality, and some studies have addressed this issue directly. There is empirical evidence that Dalit and Adivasi households earn lower incomes than non-Dalit/non-Adivasi households. Borooah (2005) used NCAER data on rural households in 16 States in India in 1993 and showed that the average household income of Other Caste households was 59 per cent higher than Adivasi households and 68 per cent higher than Dalit households. The incidence of poverty is higher among Dalits and Adivasis than the rest of the population (Thorat 2002; Sundaram and Tendulkar 2003; Das 2010). Mutatkar (2005) examined NSS consumption expenditure data between 1983 and 1999-2000 and found that the rate of decline of absolute poverty was higher for the non-Dalit/non-Adivasi population than the Dalit and Adivasi population in the study period. The growth elasticity of poverty was lower for the Dalit and Adivasi population than for the rest of the population (ibid).

According to Thorat (2002), the higher poverty levels among Dalits is associated with the concentration of Dalit workers in manual wage labour employment and the high rate of unemployment and under-employment among Dalits. Dalits face caste-based discrimination in the labour market, and that is reflected in higher unemployment rates (ibid). Inadequate access to land and capital has limited Dalit households’ access to gainful self-employment activities, agricultural and non-agricultural, in rural and urban areas

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8 See also Thorat (2009).
In a study of three villages in Gujarat, Maharashtra and Orissa, Thorat, Mahamallik and Sadana (2010) found that the average number of days of employment and average wages were lower for Dalit workers than for Other Caste workers. The access of Dalit workers to certain forms of non-farm activities was also restricted. NSS data showed that a relatively larger proportion of rural Dalit workers than non-Dalit/non-Adivasi workers were engaged in non-farm casual wage employment and self-employment, and relatively fewer in regular salaried employment (Thorat and Sabharwal 2005). The educational levels of Dalit rural non-farm workers were lower than the educational levels of non-Dalit/non-Adivasi workers (ibid).

1.3.3 The Green Revolution and Rural Household Incomes

The green revolution in India led to much debate on the impact of agricultural intensification on rural incomes and inequality. In general, the empirical evidence from village-level studies suggested that agricultural growth in the green revolution period increased rural household incomes and reduced poverty (though not inequality: see below). Research based on the NCAER panel studies conducted in 1968-69 to 1970-71 and 1981-82, which covered 261 villages all over India, suggested that household incomes increased between 1968-69 and 1981-82 (NCAER 1987). Gaiha's (1988) study based on NCAER data for the three-year period between 1968 and 1970 concluded that greater access to cultivable land and modern agricultural inputs enabled income-poor cultivating households to earn substantially higher incomes over the in the study period. Studies based on the International Crops Research Institute for Semi-Arid Tropics (ICRISAT) surveys in Andhra Pradesh and Maharashtra from 1975-76 to 1983-84 found that incomes increased for all income groups in the study period (Walker and Ryan 1990). Lanjouw and Stern (1998) studied income-poverty and mobility in Palanpur village, Uttar Pradesh, using data

9 Thorat, Kundu and Sadana (2010) observed that ownership of private enterprises (rural and urban) was significantly lower among Dalits and Adivasis than among OBCs and Other Castes.
from the four surveys conducted between 1957-58 and 1983-84.10 This study reported that absolute poverty declined in Palanpur during the twenty-five year period. When poverty was defined with respect to current incomes, however, the proportion of poor was heavily influenced by income fluctuations. In a bad year (1983-84), the incidence of poverty level was high, and in a good year (1974-75), the incidence of poverty was “misleadingly low” (ibid).

In their study of three villages in North Arcot district in Tamil Nadu between 1973-74 and 1993-94, Harriss-White and Janakarajan (2004) found that paddy yields in the villages increased between 1973-74 and 1982-83, and remained stagnant thereafter.11 Real incomes and expenditure increased in the villages in the study period. Between 1973 and 1994, average real expenditure increased for rich and poor producers, as well as for agricultural labourers.

The literature on the impact of green revolution technology on rural income inequality is less conclusive, though much of the literature indicated no change in income inequality in the green revolution period. The NCAER study showed that, though the structure of income changed significantly in favour of the non-farm component of household income, there was no change in income inequality in the period between 1970-71 and 1981-82 (NCAER 1987). The ICRISAT studies from mid-1970s to mid 1980s also found no change in income inequality (Walker and Ryan 1990). The Palanpur studies, on the other hand, found a pronounced decline in income inequality between 1962-63 and 1974-75. Though

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10 Palanpur village in Moradabad district of Western Uttar Pradesh was studied by several researchers over a long period of time. The village was first studied by AERC Delhi in 1957-58 and 1962-63 (Dreze 1997). Subsequently the village was studied by Bliss and Stern in 1974-75 (Bliss and Stern 1982) and Dreze and others in 1983-84 and 1993 (Dreze 1997).

11 The villages were among 11 villages selected for a survey by Madras University in 1973. The 11 villages were resurveyed in 1983 by Tamil Nadu Agricultural University and International Food and Policy Research Institute (IFPRI). The 11 villages were resurveyed in 1993 by the authors. The discussion on poverty relates to three among the 11 villages.
income inequality increased between 1974-75 and 1983-84, it remained significantly lower than in the years before 1974-75 (Lanjouw and Stern 1998).

1.3.4 Structural Change and Non-farm Incomes

A more recent literature on household incomes in India, particularly from the 1980s, is concerned with the rising share of non-farm incomes in household income portfolios in rural India, a phenomenon most often termed "income diversification". The NSS employment and unemployment survey data showed an increase in the share of rural non-farm employment in the 1980s for the country as a whole as well as at the regional and State levels. This finding led to a substantial body of research on employment and occupational diversification in India. The literature on diversification in India is thus vast, and an extensive review of the literature can be found in Unni (1998). This section presents some of the major arguments that emerge from this literature.

The literature explains income diversification in two ways. One view (what Chandrasekhar 1993 calls the "rural development" view), following Mellor (1976), attributed diversification to a process of rural transformation stimulated by the green revolution (Unni 1991). The other view attributed the high share of non-farm employment to agrarian distress (Vaidyanathan 1986, Bhaumik 2002).

Mellor (1976) applied the Kuznetsian framework to the rural sector, his argument being that agricultural growth generated additional incomes and new demand that encouraged the growth of a rural non-farm sector, which then tried to meet these demands with the help of local resources and skills. Vaidyanathan (1986), however, argued against this, and attributed the increase in rural non-farm employment in India to agrarian distress. Vaidyanathan proposed a "residual sector hypothesis," arguing that the non-farm sector acts as a "sponge
for excess labour”, when the farm sector cannot provide sufficient employment opportunities. His analysis, based on NSS data on employment for 1971 and 1977 and Census of India data for 1971, showed that non-farm employment showed a significant positive relation with the total rural unemployment rate. He thus concluded that “rural workers who cannot get adequate work in agriculture spill over into rural non-farm activities” (ibid.). In a more recent study, Bhaumik (2002) analysed NSS data for the period 1972-73 to 1999-2000 and found a negative correlation in the growth rates of non-farm workers and farm workers. He concluded that Vaidyanathan’s distress hypothesis holds true for India and most Indian States.12

Unni (1991) argued that diversification is a complex process influenced by many factors. It cannot be easily ascertained whether diversification is distress-driven or growth-driven, unless the sources of growth and nature of activities are considered. Secondary data sources do not allow for such analysis. Unni analysed regional level data from NSS Employment and Unemployment Surveys in 1977-78, and concluded that agricultural productivity per hectare explained a large part of the variance in the share of non-agricultural employment in total employment. Agricultural productivity influenced non-agricultural employment in almost all industrial groups. Among other variables, the concentration of land and urbanisation also showed a positive statistical association with non-agricultural employment, especially for male workers.

Chandrasekhar (1993) criticised the literature on income diversification in India that applied Mellor’s approach to rural development and structural change on the grounds that the concept of structural change, which is applicable to the economy as a whole, cannot be

applied to the rural sector in isolation. According to him, the notion of structural change is “premised on the correspondence between modern economic growth and the diversification to more productive activities based on national or international market which permit the exploitation of the scale advantages that modern technology offers. An inevitable corollary of such activity is a degree of regional inequality and the associated growth of urban centres, so that any discussion of it cannot be restricted to the rural segment of a nation or a region” (Chandrasekhar 1993). Chandrasekhar argues that there is no monotonic relationship between agricultural growth and non-farm employment. Rather, there are three phases in the process, the result of an interaction of push and pull factors. In the first phase, when there is no major technological progress in agriculture, increase in rural incomes would generate demands for non-agricultural products and lead to an increase in non-farm employment. With the introduction of green revolution technology in agriculture, the demand for agricultural labour would increase and this would be associated with a decrease in non-farm employment. In a more mature phase of agricultural development, newer demands for more sophisticated non-agricultural goods and services as well as labour-displacing farm mechanisation would push labour out of agriculture and increase the share of non-agricultural employment. The author substantiates his argument with State and district-level data from West Bengal as well as household survey data from six villages in West Bengal.13

A comprehensive analytical framework to study the growth of the rural non-farm economy is in Start (2001). While Mellor’s (1976) analytical framework outlines a rather straightforward association between agricultural growth and growth in the rural non-farm sector, Start (2001) identifies four stages of development in the rural non-farm economy, depending on the level of agricultural development and the strength and nature of rural-

13 See also Dev (1990), Dev (2007).
urban linkages. According to Start (2001), the first stage is characterised by a subsistence economy. The second stage is an initial stage of agricultural growth, when the relative isolation of the rural sector combined with growing demand for non-farm goods encourage the growth of the rural non-farm economy. As urban linkages strengthen and the purchasing power of the rural consumer grows, the rural non-farm economy faces competition from urban industrial goods and so declines. In the final stage, modern rural-urban linkages induce growth in the rural non-farm sector to complement urban industries.

1.3.5 Non-Farm Incomes and Poverty

The impact of the growth of the rural non-farm sector on rural poverty is an issue of much concern in the contemporary literature. There are theoretical arguments and there is empirical evidence that lend support to associations in both directions. Barrett, Reardon and Webb (2001) review empirical studies from Africa and conclude that there is a positive relationship between non-farm income and welfare indicators. They add that, evidence from panel data suggests that greater non-farm income diversification causes more rapid growth in earnings and consumption (ibid). On the other hand, there are studies that do not support such a positive association. According to Lanjouw (2007), there are variations in returns from different non-farm activities, and household endowments of financial and human capital determine the non-agricultural opportunities available to low-income groups.

14 The literature in the 1950s and 1960s that dealt with industrialization and structural change of the economy (Lewis 1954, Ranis and Fei 1964, Hirschman 1958) viewed the agricultural sector in a supportive role in an industry-led process of structural change, as a supplier of cheap labour and raw material. Mellor (1976), by contrast, put the agricultural sector at the core of a demand-led process of structural change, though his model was confined to the rural sector. Start's model, also confined to the rural sector, takes both demand and supply-side factors into account to explain the dynamics between the farm and non-farm sectors. (See also Haggblade 2007, Ranis and Steward 1993).

15 See also Haggblade, Hazell and Dorosh (2007) for types of agricultural growth linkages to non-farm sector growth.

16 de Janvry and Sadoulet (2001) reach similar conclusion on Mexico.

17 See also Jayaraman, Kijima and Lanjouw (2003), Lanjouw (2001).
In India, too, empirical studies find diverse and complex associations between non-farm incomes and rural poverty. There is neither any agreement among authors on the direction of the association between poverty and diversification, nor on the question of whether diversification enables households to come out of poverty. Ravallion and Dutt's (1999) analysis of consumer expenditure data from 20 rounds of NSS surveys between 1960-61 and 1993-94 found wide differences between Indian States in terms of the effects of non-farm output growth in the reduction of poverty. Ravallion and Dutt (1999) attributed the differences in the elasticity of poverty with respect to the non-farm outputs of Indian States to systematic differences in the initial conditions of rural development and human resources. Non-farm output elasticity of poverty was higher in States with high female literacy, high farm yields, a high rate of urbanisation and low rural-urban disparities in levels of consumption (ibid).

According to a recent study sponsored by the UK Department for International Development (DFID) in twelve villages in six agro-economic regions in Andhra Pradesh and Madhya Pradesh, occupational diversification, measured by the Herfindahl-Hirschman index, showed low diversification among the poorest and richest income quintiles (Farrington, Deshingkar, Johnson, Start 2006). The study emphasised the importance of non-farm options in bringing households out of poverty and creating an accumulative trajectory. On the other hand, in a resurvey of two ICRISAT villages in Andhra Pradesh, Deb, Rao, Rao and Slater (2002) found that agriculture remained the main source of income in 1975 and 2001. Diversification was merely a coping mechanism for all sections of the population and "there was only limited evidence of diversification enabling households in Aurepalle and Dokur to accumulate wealth and assets in significant measures" (ibid, p. 33). Dev and Mahajan (2005) noted that, in the context of rural Andhra
Pradesh, although 90 per cent of the poor were concentrated in agricultural activities in 1993-94 and the highest incidence of poverty was among agricultural workers, rural workers in the manufacturing and construction sectors were poorer than cultivators.

Household-level studies have attributed the complexity of the inter-relationship between poverty and income diversification to the heterogeneous nature of the non-farm sector and entry barriers to high-income non-farm employment. Education (or the lack of it) has a particularly salient role in this regard. Lanjouw and Shariff (2004) analysed NCAER 1993 survey data and concluded that the impact of non-farm incomes on poverty is difficult to assess because of the “heterogeneous nature of non-farm activities as both residual sources of income and sources of genuine upward mobility.” The study found that low levels of education, wealth and social status restrict access of the poor to relatively more attractive non-farm occupations, thus weakening the direct benefits of non-farm employment in poverty alleviation. In a study of the Himalayan regions of Sikkim and Darjeeling, Micevska and Rahut (2008) found that higher education levels of both male and female workers enabled participation in high-return non-farm employment, while participation in low-return non-farm employment was negatively associated with the level of education for both males and females. The authors thus conclude that although empirical studies have found non-farm sector growth in India to be “pro-poor”, the challenge facing India is to “increase the access of the poor to non-farm activities that yield high and stable incomes, and thus present a potential basis for upward income mobility” (ibid). In a study in North Arcot district in Tamil Nadu, Jayaraj (2004) found that access to non-farm employment was affected by land ownership, caste, gender and education. Households from land-owning classes and upper castes thus had better access than others to rural non-farm employment. Bhaumik (2007a, 2007b) also showed, in the context of two districts in West Bengal, that though households with small land holdings were more diversified than those
with larger land holdings, the socio-economically better off (in terms of caste and education) had better chances than others of being absorbed in more productive non-farm activities.

1.3.6 Non-farm Incomes and Income Inequality

The literature on the impact of non-farm growth on income inequality is as inconclusive as the literature on non-farm income and poverty. Haggblade and Hazell (1989a, 1989b, 1993) argue that income diversification plays an equity-enhancing role. On the other hand, Estudillo, Quisumbing and Otsuka (2001) analysed panel data from five rice-growing villages in Philippines for the years 1985 and 1998 and found that an increase in non-farm income was accompanied by a remarkable increase in income inequality. Ellis (2000) also pointed out that the effect of income diversification on income inequality could work in both directions. To the extent that better off families were able to diversify in more favourable labour markets than the poor, diversification would have an unequalising effect on rural incomes and wealth (ibid.).

There are few studies on the relation between non-farm incomes and income inequality in India. Lanjouw and Stern (1998) analysed the components of income inequality in Palanpur for the period between 1957-58 and 1983-84 and found that, although agricultural incomes was the major contributor to income inequality throughout the period, its share in total inequality declined from 32 per cent in 1974-75 to 29 per cent in 1983-84. In the same period, the share of outside incomes increased.18 Azam and Shariff (2005) analysed NCAER rural income data for 1993 and 2005 and found that farm income was the major source of income inequality in rural India in both years, but that its contribution to income

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18 Outside income referred to non-agricultural income from jobs outside the village.
inequality declined between 1993 and 2005. On the other hand, the contribution of salaries and wage incomes to total inequality increased between 1993 and 2005.\textsuperscript{19}

The relationship between non-farm income and income inequality is mediated by features of the economy such as the access to and distribution of land, and the nature of the non-farm sector. According to Haggblade and Hazell (1989a, 1989b, 1993), rural non-farm incomes bring down income inequality because farm size and the share of non-farm incomes are negatively correlated. Adams (2002) argued that the direction of association between non-farm incomes and income inequality may be partly explained by the distribution of land. According to Adams (2002), in land-scarce labour-rich countries, inadequate access to land may push poorer households to the non-farm sector. Thus, in such countries, non-farm incomes may reduce poverty and inequality. In land-rich labour-scarce countries only richer households are pulled into the non-farm sector. In such countries, non-farm incomes may increase inequality. Adams supported this hypothesis with empirical evidence from nationally representative household survey data from rural Egypt and Pakistan (Adams 2002, 1994).\textsuperscript{20}

Foster and Rosenweig (2004) explain the association between non-farm incomes and income inequality by the type of commodities produced by the non-farm sector. According to their model the rural non-farm sector produces two kinds of commodities: commodities that can be traded in larger markets and "non-tradable" goods and services that are only traded within the village. Their analysis indicated that the latter sector is driven by local

\textsuperscript{19} Gustaffson and Shi (2001) found that increasing rural income inequality (in the period 1988-1995) was associated with increasing income gap between households dependent on farm incomes and those dependent on state-owned enterprises. The relation between income and education strengthened in the same period. According to Ping (2001), the uneven inter-regional growth of the rural non-agricultural sector was the major contributor to income inequality in China.

\textsuperscript{20} See also Saith (1992). The author explores the relationship between land ownership and non-farm income and presents a stylised scheme describing the participation of farming households in different types of non-farm activities, in different stages of agricultural development.
demand and is positively influenced by growth in agricultural productivity. Factories producing tradable goods are established in areas where wages are low, that is, in areas of low agricultural productivity. Thus, the growth of the tradable non-farm sector reduces inter-village income inequality. Foster and Rosenweig (2004) also argued that since factories employ low skilled labour, the growth of the tradable non-farm sector increases the incomes of the rural poor and reduces intra-village income inequality. They used NCAER income data for the period 1982-1999 to support their argument.\(^{21}\)

The two crucial assumptions on which Foster and Rosenweig's predictions rest may not, however, hold true in many situations. In situations where rural infrastructure and connectivity are poor, entrepreneurs may not want to establish factories in low productive areas, but may prefer high productivity and better connected areas. Secondly, rural factories will not employ only low-skill labour. In fact, rural factories also employ semi-skilled and high-skilled workers and such jobs are often taken by workers from educated and wealthy rural households. In such situations, non-farm sector growth may increase both intra-village and inter-village inequalities.

In my view, the relationship between income diversification and poverty and income inequality is an area that needs further research, especially in the Indian context.

1.3.7 Income from Forest Products

One of the villages that I have studied is a forest fringe village, and a substantial part of total income is from the sale of forest produce. The importance of forests is much discussed in the vast literature on common property resources. My study, however, does not explore the role of common property resources, including forests, on households in

\(^{21}\) Though the authors report that the NCAER conducted the third panel survey in 1999, to my knowledge the NCAER survey was conducted in 1993 (see also section 23.2.4 in chapter 2).
general, but deals in a limited way, with the level of income obtained from forest produce, and its impact on poverty and inequality in the study village.

There are very few studies in India on the contribution of forest-based incomes to poverty reduction that have specific estimates of forest incomes and their share in total incomes. In one such study in Nainital district of Uttar Pradesh in 1996, Reddy and Chakravarty (1999) found that forest incomes played a significant role in poverty alleviation and reduce income inequality. The authors concluded that any measure that restricts the access of the poor to forests will increase poverty (ibid). Hegde, Suryaprakash, Achoth and Bawa (1996), however, came to a different conclusion from their analysis of household incomes in two hamlets in the Biligiri Rangan Hills of Karnataka in which people of the Soliga tribe live. According to their study, though the share of income that the Soligas obtained from the forest resources was substantial, the level of income from forest produce was very low and barely matched the earnings from minimum wages from other sources. Moreover, the share of forest income in household incomes decreased as educated members of the family and income from other occupations increased.

It is difficult to draw any conclusion on the impact of forest incomes on poverty and inequality from such a limited literature. Research in the field, however, assumes importance in India in the context of the introduction of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act in 2006.

1.4 RESEARCH QUESTIONS

The broad objectives of this thesis are two-fold. First, it attempts to study methodological aspects of estimating household incomes in a less-developed country like India. Secondly, it
examines specific analytical issues regarding household incomes in three villages in contemporary West Bengal.

With regard to the first objective, the thesis discusses some problems of defining household incomes and critically evaluates various methods of estimating household incomes. It also attempts to review the few large-scale income surveys that have been conducted in India.

With regard to the second objective the thesis addresses the following questions:

- What are the levels of rural household incomes? How are household incomes associated with household land and asset ownership, caste, education and demographic composition of households?
- What are the main features of the distribution of incomes? What factors contribute to income inequalities?
- What are the main sources of incomes of households? How important is non-farm income in aggregate household incomes?
- How are the different sources of incomes distributed between households, and what are the contributions of the distribution of individual sources of income to household income inequality? What determines the household’s access to non-farm incomes?
- What is the pattern of diversification into the non-farm sector? Does access to non-farm income lead to higher household income?
- What is the potential for current government schemes in enhancing household incomes?
1.5 Methodology

The analysis in this thesis is based on a combination of primary and secondary sources of data. The secondary sources of data that are used in this thesis are:

2. The Reports of the Commission on Agricultural Costs and Prices (CACP), Kharif and Rabi crops, 2005-06.
3. Census of India, 2001
4. West Bengal Economic Review (various issues), Government of West Bengal
5. District Statistical Handbooks, Government of West Bengal, 2006

The primary database on incomes is from three villages in West Bengal. I also conducted a separate and detailed case study of the implementation of the National Rural Employment Guarantee Programme.

1.5.1 Study Area

The Development and Planning Department of the Government of West Bengal conducted a study titled “Landlessness and Debt in Rural West Bengal” in 2005. This study, which was conducted in the context of rising landlessness and debt in the country, tried to assess the extent and nature of these two problems in West Bengal. As part of the study, census-type surveys were conducted in seven villages in the six major agro-climatic regions in West Bengal. The study covered one village from each region and two from the Vindhyan alluvial region. A primary survey was conducted in each village. Of these seven

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22 The survey was directed by V. K. Ramachandran and Vikas Rawal.
23 The six major regions are the hill region, the Terai region, the old alluvial region, the new (Vindhyan) alluvial region, the coastal saline region and the western laterite region.
villages, four were paddy-based agricultural villages, and the remaining villages were characterised by some special features related to landlessness.  

I participated in the surveys and was given permission to use survey data from selected villages for further study. I selected three of the seven villages for a detailed study of household incomes. These villages were Dalkati in West Medinipur district, Amarsinghi in Malda district and Bidyanidhi in Bardhaman district. The three villages were selected purposively on the basis of the following criteria. All the three villages were agriculture-based economies where paddy was the main crop. The three villages represented different levels of development of the forces and relations of production in agriculture.

The location of the three villages is described in Table 1.7 and the districts where the study villages are located are indicated in the map in Figure 1.1.

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24 For a detailed description of the surveys and the selection procedure of each village, see Rawal (2006a).
Table 1.7 Location of study villages

<table>
<thead>
<tr>
<th>Village</th>
<th>Agroclimatic zone</th>
<th>District</th>
<th>Block</th>
<th>Gram Panchayat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dalkati</td>
<td>Red lateritic zone</td>
<td>West Medinipur</td>
<td>Jhargram</td>
<td>Lodhashuli</td>
</tr>
<tr>
<td>Amarsinghi</td>
<td>Old alluvial plains</td>
<td>Malda</td>
<td>Ratu I</td>
<td>Samsi</td>
</tr>
<tr>
<td>Bidyanidhi</td>
<td>Vidhyan alluvial plains</td>
<td>Barddhaman</td>
<td>Raina I</td>
<td>Raina</td>
</tr>
</tbody>
</table>

Figure 1.1 Map of West Bengal showing the districts where the study villages are located

Source: http://www.wb.nic.in/westbg/dis.html

1.5.2 Selection of Sample Households

The data on incomes were collected by means of stratified random samples. The census-type survey in the villages (in May-June 2005) collected information on the occupation of the head of each household. Using data from the census-type survey, I divided households into five occupational categories based on the self-defined occupation of the head of each
household. The five strata were: cultivator, manual worker, artisan, salaried person and persons with income from business activity other than agriculture. A sample of 20 per cent of households from each village was drawn. After households in each village were stratified, the sample was drawn from every stratum randomly, with probability proportional to the proportion of households in every stratum to the total number of households. With regard to the stratum of cultivators, efforts were made to make the class representative of the land-owning structure of the village. Thus, cultivators were divided into two sub-categories, marginal and small cultivators and medium cultivators, and samples were drawn from each category in proportion to their presence in the village. There were no large cultivators in the villages.\(^\text{25}\) In each village, the household with the largest ownership holding was also included in the sample. A total of 95 households were selected for the primary survey, the sample sizes in Dalkati, Bidyanidhi and Amarsinghi being 40, 31 and 24 respectively (see Table A1.2 in appendix 1 for the number of households in each stratum and the number of sample households in the villages).

1.5.3 How the Sample Survey was Conducted

The primary survey on incomes was carried out in two phases and each household was surveyed twice. In both stages the same questionnaire was canvassed, but each survey dealt with a different agricultural season. The survey was carried out in two phases to ensure accuracy of the data collected. Recall is greatly assisted by breaking the recall period into sub-periods that roughly coincide with the agricultural seasons of the year. The survey was carried out for the first time in December 2005 and January 2006, and information was collected for the Aman season only (roughly corresponding to the months between June and December 2005). The second stage of the survey was conducted in July-August 2006.

\(^{25}\) Large cultivators are generally defined as cultivators who own or operate 25 acres of land or more.
and in this stage information pertaining to the Rabi and Boro seasons (December 2005 to June 2006) was collected.

The questionnaire was subdivided into the following major sections:

1. General information on the household
2. Demographic and educational details of household members
3. Details of ownership and operational holding of land for the agricultural year 2005-06
4. Income from cultivation
5. Income from agricultural and non-agricultural labouring out
6. Salaries, artisan earnings, remittances and incomes from business activities other than crop production
7. Rental incomes from productive assets other than land
8. Income from collection of forest products (for Dalkati only)
9. Income from livestock
10. Debt
11. Asset holdings

1.5.4 Case Study of NREGA

In February 2010, I conducted a case study of the implementation of government-sponsored employment schemes in Barddhaman district to assess the impact of government schemes on rural household incomes. The case study was conducted in Bonkati gram panchayat in Kanksa block in Barddhaman district. Barddhaman district was one among the 24 districts in India that received the “Excellence in NREGA Administration” award in 2009, and Kanksa block was the best performing block in the implementation of the NREGA in the district. Bonkati gram panchayat was thus chosen to
assess the potential of NREGA and other government schemes in enhancing rural household incomes.

The case study was based on an examination of secondary data, that is, on the annual accounts of the gram panchayat, and the monthly reports of the NREGA cell, Kanksa block, and on primary data gained through detailed interviews. In the course of the case study, I interviewed the Nirman Sahayak of Bonkati gram panchayat; officer-in-charge of the Hariyali scheme, Bonkati gram panchayat; the Nirman Sahayak, Kanksa block; and the Sabhapati, Kanksa Panchayat Samiti. I interviewed the leader of a self-help group (Kalimata SHG) that benefited from the land development programmes of the gram panchayat. I interviewed three Adivasi beneficiaries of the kitchen-garden and land-development programme for an Adivasi hamlet in Bonkati. I also visited the NREGA work sites in the gram panchayat.

1.6 ORGANISATION OF THE THESIS

Chapter 2: Household incomes: concept and measurement. This chapter is a methodological enquiry into some basic issues on the concept and measurement of household incomes. It deals with two issues: first, the definition of household incomes and, secondly, the method of measurement of household incomes. The chapter describes two approaches to the measurement of household incomes, the national accounting approach and the household survey approach, and attempts to evaluate the relative merits of each approach. The various large-scale income surveys in India are described and critically evaluated. The final section describes the components and measurement of household incomes from the primary data that are used in the thesis.

26 The panchayats in West Bengal maintain detailed records of various development works in the villages (see Bakshi and Okabe 2008). The panchayat-level records were used for the case study.
27 Nirman Sahayak is the Technical Assistant. Sabhapati is the chairperson of panchayat samiti.
Chapter 3: *Introduction to the study villages.* The major statistical analysis in this thesis is based on data collected from three villages in West Bengal, and this chapter provides an introduction to the economy of each of the study villages.

Chapter 4: *Levels of Income and Income Inequality.* This chapter describes the levels and distribution of household income in the three villages. It assesses income deprivation in the three villages and explores the association between income deprivation and caste. The second objective of this chapter is to describe income inequalities in the villages and analyse how social inequality and inequality in household endowment of human and material capital contribute to income inequality.

Chapter 5: *Sources of Income.* This chapter deals with the sources of income in the study villages and the sectoral composition of household income, that is, the share of farm and non-farm incomes in total income.

Chapter 6: *Income Inequality and Sources of Income.* Rural households earn incomes from various sources, and these yield different rates of return. In this chapter I explore how the differential returns from different sources of income and unequal access to different sources of income contribute to household income inequality in the villages. Total income inequality is decomposed by source of income. In the second part of the analysis, a regression exercise is used to decompose each source of income by household characteristics.

Chapter 7: *Household Income Diversification.* This chapter deals with the patterns of household income diversification. In this chapter, I analyse how households and individuals across
income and asset groups diversify with respect to sources of incomes and employment. I also explore the question of whether non-farm incomes increase household incomes. The second part of this chapter is a case study of the National Rural Employment Guarantee Scheme (NREGS) in a gram panchayat in Barddhaman district that I conducted in order to assess the potential of recent government programmes in household income generation.

Chapter 8: Conclusions and Discussion. The final chapter is in two parts. The first is a summary of the specific findings of the chapters of the thesis. The second is a discussion of some implications of my analysis for the current literature, including aspects of development of the rural economy of West Bengal.
Appendix 1

Table A1.1 District-wise exponential trend growth rates of area, production and yield of rice in West Bengal

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Note: * estimates are not significant at even 10 per cent level of confidence; all other estimates are highly significant. Estimates are based on three year moving averages.

Source: Ramachandran, Swaminathan and Bakshi (2009)
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