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Rural Non-farm Sector in Bangladesh : Stagnating and Residual, or Dynamic and Potential ?

by

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The new piece of evidence culled from household expenditure surveys of BBS as well as 62-village panel surveys of BIDS indicates that the expansion of the rural non-farm sector (RNF) during the period since early eighties through mid-nineties can no longer be viewed as the persistence of a "residual" sector phenomenon. Such characterisation, if true, would have predicted declining output and higher incidence of poverty in this sector. The evidence presented in the paper suggests that the shift to non-farm occupations has been, on balance, pro-poor in nature. This is seen both in terms of greater potentials for poverty alleviation in these activities, and in respect of their potentials for moderating overall rural income inequality. The other view, favouring a "dynamic" characterisation, is also found to be wanting in that it fails to recognize the lack of improvement in labour productivity in many RNF activities—and the consequent overcrowding at the lower end of the productivity scale—affecting the long-term sustainability of the sector.

I. THE DEBATE

Two themes constitute the central focus of this paper. The first relates to the growth performance of the rural non-farm (RNF) sector[1] since the early eighties and the second focusses on the distributive implications of the rural non-farm growth. Both the issues have been the subject of considerable debate in the Bangladesh literature.[2]

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[1] The term "RNF" sector used here includes various non-agricultural sources of income such as trade, transport, construction, rural industry, community and personal services, remittance, transfers, and non-classifiable "others". The terms "RNF" and rural "non-agricultural" sectors have been used interchangeably throughout the paper.

[2] See, for instance, Rahman and Haque 1988; Osmani 1990a; Osmani 1990b; Osmani 1993a; Osmani 1993b; Khan 1990; Chawdhury 1992; Chawdhury 1993; Hossain et al. 1993; Saith 1992. Except for Hossain *et al.* (1993) which looks at the evidence of the late eighties and early nineties, most of the debate centered around the nature of rural non-farm growth that had occurred in the 1973/74-1983/84 decade.

The debate was triggered by the publication of 1984/85 Labour Force Survey which suggested a dramatic decline in agriculture's share in rural labour force—from 85 per cent in 1974 to 66 per cent in 1984/85.[3] There are two strong views expressed in this debate. While recognizing that part of this shift to non-agricultural sectors must be in the nature of statistical artifact,[4] one approach tends to view the RNF sector as the persistence of a "residual" sector phenomenon. The negative image associated with such characterisation predicts declining output and higher incidence of poverty in this sector. The evidence used by the proponents of this view was restricted to the data (culled from national accounts, HES, Labour Force Surveys) covering the period between the mid-seventies and early eighties. Four major contentions discernible in this line of reasoning are as follows :

(1) The increasing shift of labour force to non-farm activities since the mid-seventies is associated with growing work-sharing and the consequent decline in average productivity per worker;

(2) The non-farm workers belonged to the poorest segment of the rural population in the mid-seventies, poorer than even the agricultural labourers who are traditionally believed to be the worst-segment of the rural economy;

(3) Declining productivity in the non-farm sector led to an increase in extreme poverty;

(4) In overall terms, the shift of labour from farm to non-farm sectors and the consequent development of the latter is to be termed as "non-progressive".

The other, opposite, view which tends to uphold the thesis of a dynamic non-farm sector (the beginning of a "Lewisian transition") exaggerates the presence of the positive features and attribute the development to the strong stimulus created by the Green Revolution in agriculture through "consumption linkages". The expansion of various micro-credit programmes for non-farm self-employment, rapid urbanization are also cited among the factors contributing to this process.

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[3] Sectoral share of incremental national labour force during 1974-1984/85 is estimated as follows : agriculture (-1.7%), small manufacturing (16.6%), large manufacturing (5.4%), trade (32.5%), transport (9.9%), construction (7.1%), others(30. 2%).

[4] Given the definitions of BBS, a person previously classified as an agriculturist can subsequently turn into non-agriculturist simply by devoting a little bit of extra time to non-agricultural pursuits. In this way, a small shift in terms of labour-time would be translated into a large shift in terms of labour force.

Which of these two views comes closer to the description of the development of the RNF sector since the early eighties? While an exhaustive analysis of all the issues mentioned above is beyond the scope of present discussion, we shall argue that none of these extreme views presents the true picture.[5] To that end, we present below some new evidence based on special tabulations generated by Bangladesh Bureau of Statistics (BBS).[6] The BBS data are, however, restricted to the period between 1983/84 and 1991/92. In order to form an idea about the performance of the RNF sector during the first half of the nineties, we need to use other sources of information. The supplementary evidence mainly relates to rural household surveys carried out by Bangladesh Institute of Development Studies (BIDS).[7] The BIDS survey data for 1987, 1989/90 and 1994 have been used for the purpose.

II. GROWTH IN RURAL INCOMES

What has been the growth performance of various sectors of the rural economy? How does the growth varies by different sub-sectors

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[5] It may be noted that, as such, we are not concerned here with the task of resolving the above debate as applied to the earlier period. It is possible that the stagnation-oriented view of RNF sector may better describe the situation prevailing during the decade preceding 1983/84. The expansion of RNF sector was severely constrained by both demand and supply-side factors during that period. For instance, the spread of new HYV technology (such as modern irrigation) in agriculture acting on the demand side, was still restricted to only a quarter of the cultivated land. Similarly, on the supply side, the targeted programmes for delivering non-farm credit, technology, training, and information did not emerge in a major way during that period. The question that concerns us here is whether the same view can explain the events characterising the development of RNF sector during the subsequent decade starting from 1983/84.

[6] Like in many other countries, national accounts data for Bangladesh do not provide separate estimates of income generated in various sub-sectors of the rural economy. The official publication of HES Report also does not provide income growth and income distribution data suitably disaggregated by sources of income and occupation. As a result, these reports have not been useful either to shed light on the trend in rural non-farm income or its likely impact on poverty and income distribution. The new piece of evidence is based on additional special tables of Household Expenditure Surveys (HES) generated by BBS and relate to all the comparable survey years since the early eighties, i.e., 1983/84, 1985/86, 1988/89, and 1991/92. On the general issue of comparability among these surveys, there appears a broad consensus (see, Khan 1990, GOB 1991, Hossain and Sen 1992, Ravallion and Sen 1994). The scope and coverage of the new tables, however, vary across the survey years. The question on landownership has been included only in the last two surveys; there are also differences in the coding of several income items between the first two and the last two surveys which do not permit generation of identical tables for all disaggregated sources of income and occupation. Hence, only the strictly comparable tables are considered for the analysis.

[7] We shall mainly use the data collected through the Analysis of Poverty Trends Project of BIDS which has been engaged in the monitoring of rural poverty since 1987. The APT survey is based on a nationally representative rural sample of 62 villages comprising about 1300 households. On the methodology of sampling and representativeness, see Rahman and Hossain (1995).

within the non-farm activities? What has been the trend in labour productivity in agricultural and non-agricultural sectors? Is there any variation in the growth of incomes by poverty status? We shall review these issues in this section in the light of BBS and BIDS data.

Trend in Average Income by Major Sectors

Table I summarises the per capita rural income growth by source of income during 1983-91 as per the HES data of BBS. Household income sources are broadly categorised into three groups: agriculture (including crop, livestock, fisheries, and forestry, but excluding agricultural wage), wages and salaries (including agricultural and non-agricultural wages), and non-agricultural income (excluding non-agricultural wages, but including remittances)[8]. The most significant message emerging from the Table is that the growth in average per capita non-farm income has been positive throughout the period. Average per capita non-farm income (excluding non-agricultural wages) has grown at a rate of 2.8 per cent per annum which is higher than the growth in per capita agricultural income (-0.2%), and much higher than the matched figure for wage income (-0.8%). The conclusion about higher income growth in the RNF sector compared to the agricultural sector is also upheld by the BIDS survey which provides more recent data (see, Table II). The annual growth rate of non-agricultural income per household during 1987-1994 has been about 3.7 times higher than the matched figure for agricultural income.

The negative growth rate observed for the per capita agricultural income (with and without wages) during 1983-91 appears to be sensitive to the choice of the terminal year. Considered over a longer term period, the matched figure would be higher. Thus, agricultural GDP grew at 2.6 per cent per annum during the period between 1980 and 1994/95. i.e., at a time when rural population was growing at an annual rate of 1.5 per cent.[9] However, there is a broad consensus about the slow growth of the overall agricultural sector, particularly over the first half of the nineties (Abdullah *et al.* 1996).

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[8] Some of the remittance incomes, of course, originate in the farm sector, given the rising importance of rural-rural migration (BIDS 1990) and migratory agricultural wage income. However, the latter would most likely be recorded in the agricultural wage income category. Most of the remittances are still supported by incomes earned in non-farm(and often, non-rural) sectors.

[9] The growth rate figure for agricultural output is from Hossain *et al.* (1996), and that for rural population refers to inter-censal growth observed during 1981-91.

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TABLE I

TREND IN RURAL INCOME GROWTH BY SOURCES, 1983-91

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(Per capita annual taka income in 1983/84 prices)

	Sources	1983/84	1985/86	1988/89	1991/92	Annual Growth Rate Over 1983-91(%)
1.	Total agriculture (excluding agricultural wage)[1]	1661	1712	1524	1511	-1.2
2.	Wages and salaries (both agricultural and non-agricultural)	972	957	1053	777	-2.8
3.	Total non-agriculture (excluding wages and salaries)[2]	1149	1186	1288	1438	2.8
4.	Total income (1+2+3)	3782	3855	3865	3726	-0.2
5.	Total consumption[3]	3418	3814	3448	3242	-0.7

Notes:
1. Includes assets rental income. crop, fishery, forestry and livestock,
2. Includes incomes from trade, commerce, industry, services, remittances, transfers, and "other" incomes.
3. Represents per capita annual consumption in 1983/84 prices. Nominal mean consumption obtained from HES has been deflated by rural CPI.

Source: Computed from *HES Special Tables*, generated by BBS.

The decline in per capita wage income is particularly noteworthy. About 50 per cent of total rural wage income is earned through agricultural wages as per 1988/89 and 1991/92 HES, the rest being non-agricultural wages and salaries. For the component of agricultural wage (as well as non-agricultural wage and salary) income, comparison is only possible between 1988/89 and 1991/92, and it shows a decrease for both the components. The negative growth in agricultural wage income is revealed in the BIDS data as well. The trend is consistent with the declining real agricultural wage rate (deflated by rural CPI) since 1985/86 observed in earlier studies (Ravallion and Sen 1995; see, also Table VI). The concomitant drop in non-agricultural wages and salaries is mainly due to the decline in non-agricultural wage, since the salary component is usually fixed in the formal sector and less likely to change drastically during the period. The level and

TABLE II
STRUCTURE AND GROWTH OF RURAL HOUSEHOLD INCOMES, 1987-94

Components of Income	Average Household Income at Current Prices (Taka)			Share of Total Household Income (in per cent)			Annual Rate of Growth (per cent/ year at constant 1994 prices)	
	1987	1989/90	1994	1987	1989/90	1994	1987-94	1989-94
Agriculture	16627	20152	28636	62.9	59.0	54.3	1.9	1.0
Crop	9652	13075	18124	36.5	38.3	34.3	3.1	0.5
Non-crop activities	3774	4738	7606	14.3	13.9	14.4	4.2	3.8
Wages	3201	2339	2906	12.1	6.8	5.6	-7.1	-2.0
Non-agriculture	9809	13975	24131	37.1	41.0	45.7	7.2	5.5
Services	3287	6448	11751	12.4	18.9	22.3	13.0	6.7
Trade & otheres*	6522	7527	12380	24.7	22.1	23.4	3.3	4.3
Total household income	26436	34127	52767	100.0	100.0	100.0	4.0	2.9
Per capita income	4391	5513	8883	–	–	–	4.2	3.8

*Includes processing, repairs, transport, construction and non-agricultural wages.

Source: Hossain *et al.* (1996). For 1989/90 and 1994, household survey undertaken under the Analysis of Poverty Trend Project of BIDS; for 1987, household survey under the "Differential Impact of Modern Rice Technology" of BIDS.

trend in non-agricultural wage in rural areas is determined principally by the level and trend in agricultural wage.[10]

Growth Performance within the RNF Sector

Given the declining trend in non-agricultural wages and the rising overall trend in non-farm income (excluding wages and salaries), we can say that the improvement in RNF growth performance is located mainly in the self-employment opportunities, and not so much in wage-employment opportunities. But, self-employment activities are diverse in nature, and growth opportunities may expand in one part of the RNF sector, while it may stagnate or decline in other part of it. On the basis of available data, however, we can at best draw some inferences about the differential performance within the RNF sector.

Let us first review the evidence available from the BBS data (Annex Table A. 1). Direct comparison is not possible for all the sub-categories

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[10] For some non-agricultural wage activities such as unskilled construction labour, "helpers" in rural industry, the wage rate is generally lower than the on-going agricultural wage rate. For other categories such as skilled construction labour and production worker in rural enterprises along more "modern" lines, it is higher than in agriculture.

within RNF sector since such information is lacking for the first two surveys. Second, many of the service sector activities are not demarcated in these surveys as separate entities and merged with the category of "others". One comparison that is possible for the whole period relates to per capita income derived from "trade, commerce, and industry". As the Table shows, there is considerable variability over time: it has declined during 1984-86, increased during 1986-89, and declined again in the 1989-91 period. Over the period between 1983/84 and 1988/89, per capita non-farm income from these sources alone increased by 1.47 per cent per annum. The rather big drop in the average income from these sources during 1988-91 period (77 per cent of this decline is explained by the fall in per capita trade income) is difficult to explain and is possibly overstated.[11]

The available evidence from the BIDS surveys is not strictly comparable to the BBS data when it comes to matching the various sub-sectors within the non-farm economy (Table II). But, the underlying message is worth emphasizing. The service sector has grown at a rate of 13 per cent per annum during 1987-94, much higher than the corresponding rate observed for "trade and others". We interpret the evidence of both BBS and BIDS surveys as indicating higher growth in service, transport, and remittance compared to trade, industry, and "other" miscellaneous activities. While none of these sources are singularly important, together they contributed favourably to the overall positive growth in the RNF sector.

The income growth in non-crop agricultural sector does not constitute a controversial issue. The poultry and livestock sector is long recognized as a high growth sector, particularly since the mid eighties (the decline in 1988/89 evidenced in BBS data is due to severe flooding). Similar trend is indicated by the BIDS data which suggest that incomes from non-crop activities have grown at a rate of 4.2 per cent per year during 1987-94. The trend is consistent with the relatively high demand for livestock loans in the targeted credit programmes including the Grameen Bank.

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[11] From annex Table A. 1, it can be estimated that the share of trade income in total rural income has declined from 11.6 per cent to 8 per cent during 1988-91. The latter estimate is particularly low compared to the matched figure obtained from alternative source of information such as the 62-village surveys carried out by BIDS. According to the latter, the share of trade income in total rural income in 1989/90 was 14 per cent (Hossain 1995a). Besides, such a drastic decline (by about 30 per cent) in per capita trade income during the period would have meant considerable drop in the profitability in this sector and led to a decline in the demand for trade loans from the major credit programmes for the poor. However, this has not happened. The trade loan's share has actually, increased during the late eighties and early nineties, and they still constitute the bulk share of the loan portfolio in these programmes. The latter include government programmes such as BRDB (BSS) and URDEP, and NGOs such as BRAC, Proshika, etc. (for BRAC's Rural Credit Programme, the corresponding figure is over 60 per cent).

So far we have reviewed the growth performance of agricultural and non-agricultural sectors. The immediate question that springs up is: whether the observed growth in RNF income is sustainable in the backdrop of recent performance of the agricultural sector? Agricultural income growth matters because of its various linkages (consumption demand, employment) with the RNF sector. It is difficult to project a scenario where a "dynamic" RNF sector would continue to thrive for long amidst a "stagnant" agriculture. But, can we say that the overall performance of the agricultural sector resembles something closer to a "stagnant" situation? It is quite possible that, at a time when the total agricultural income has been growing at about 2 per cent during 1983-91 (as per national accounts), the number of workers employed in agriculture has been declining in absolute terms. If true, this would imply some positive growth in labour productivity in agriculture, even though the trend in per capita agricultural income (estimated at household level) may show stagnation. From that perspective, the agricultural growth estimate based on *per capita* terms may be quite deceptive about the underlying dynamics. We have no direct way of testing this hypothesis from the BBS data, and for that, we need a survey that combines information on income and employment. The 62-village BIDS repeat panel surveys for 1987 and 1994 provides that opportunity.

Growth in Labour Productivity by Major Sectors

As may be seen from Table III, there has been an absolute decline in the number of workers employed in agriculture during 1987-94. The agricultural labour force declined by about 0.4 per cent per year, while agricultural income (including agricultural wages) grew at about 2 per cent (Table II). This suggests that agricultural labour productivity has increased over the period. However, the increase in agricultural labour productivity has been mainly achieved due to productivity growth in crop agriculture. In non-crop agricultural activities such as livestock, poultry, and fisheries, it has declined.[12] The growth in labour productivity in crop agriculture (a sector which accounted for about 43 per cent of economically active population of rural areas in 1988) has provided the scope for releasing workers at household level for carrying out other activities outside crop agriculture, particularly in the non-agricultural sector. As a result, there has been a substantial increase in RNF employment. Table III shows that the total non-agricultural employment has increased at 5.9 per cent per year over the 1987-94 period with the result that the share of non-agriculture in total employment has risen from 35 to 45 per cent

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[12] This can be seen by comparing the figures for output and employment growth in these sectors, as presented in Tables II and III.

in seven year period. We argue that this growth in RNF employment could not have been possible without the favourable effects of intensification process in crop agriculture in the first place, and cannot be seen as originating merely in the crisis or stagnancy in the traditional agriculture.

TABLE III
CHANGES IN THE OCCUPATIONAL STRUCTURE OF ADULT (16+) POPULATION

Occupation	Primary Occupation			Primary or Secondary Occupation			% of Economically Active Population	
	1987	1994	% Increase	1987	1994	% Increase	1987	1994
Agriculture	1271	1235	-0.4	1821	1767	-0.4	65.6	55.3
Crop cultivation	832	826	-0.1	1203	1167	-0.4	42.9	37.0
Agricultural wage labour	424	375	-1.7	569	531	-1.0	21.9	16.8
Livestock & poultry farming	6	19	17.9	24	28	2.3	0.5	0.9
Fisheries	9	15	7.6	25	41	7.3	0.3	0.7
Non-agriculture	668	997	5.8	975	1221	3.3	34.5	44.6
Rural	78	152	10.0	128	186	5.5	4.0	6.8
Trade	178	262	5.7	306	380	3.1	9.2	11.7
Transport	60	85	5.1	71	100	5.0	3.1	3.8
Construction	29	30	0.5	91	33	-13.5	1.5	1.3
Services	315	457	5.5	371	508	4.6	16.2	20.5
Economically active population	1939	2232	2.0	2796	2988	1.0	100.0	100.0
Economically inactive	2135	2398	1.7	–	–	–	–	–
Total population	4074	4630	1.8	–	–	–	–	–

Source: Hossain *et al.* (1996).

The BIDS panel survey also throws some light on the issue of labour productivity in the non-agricultural sector. It appears that there has not been any sustained growth of labour productivity in the RNF sector.[13] There are, however, differences in the trend in labour productivity between specific sub-periods and sectors. Thus, if one

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[13] Underprovision of the supply-side factors such as skill, capital, technology, etc. (which may emerge as principal constraints in raising the labour productivity in non-agricultural activities) may be cited here as one explanation. The BIDS survey, however, does not contain information on these aspects.

focusses on the entire period of 1987-94, a small gain in labour productivity in the non-agricultural sector can be noted. The annual growth in non-agricultural employment (5.9 per cent) has been accompanied by a slightly higher growth (7.2 per cent) in total non-agricultural income (Tables II and III). However, this small gain has been achieved mainly because of the productivity increase in the service sector; in "trade and other" activities, it has declined. In contrast, a more recent data for 1989-94 suggests that the labour productivity in non-agricultural sector has remained virtually unchanged. Non-agricultural income grew at 5.5 per cent per year during the latter period, i.e., at about the same rate as the growth in non-agricultural employment (Hossain et al. 1996). The weight of the overall evidence is thus suggestive of the "extensive" pattern of growth (output growth with little change in labour productivity) in the RNF sector, while the (crop) agricultural sector is more characterised by the "intensive" pattern (output growth with rising labour productivity).

Apart from creating the scope for releasing workers for RNF activities, growth in labour productivity in agriculture has strong implications for the expansion of RNF activities through consumption demand-induced linkages. With increase in agricultural income, the household demand for RNF goods and services typically increases. According to a 1982 survey, non-farm goods and services account for about 47 per cent of the incremental expenditure, and have average expenditure elasticity of 1.5 (Hossain 1988). For some non-farm goods and services, the elasticity is much higher (see, annex Tables 3 and 4).

It is, however, important to keep in view that the issue of sustainability of RNF activities cannot be reduced to the discussion of consumption linkages of the technological progress in agriculture alone. Agriculture is but only one source of demand for the RNF sector. Three other potential sources are demand originating from urbanisation, intra-sectoral demand, and foreign demand. Some of the core RNF activities, for instance, will be benefitted by the urbanisation process. With urbanisation, the need for marketable surplus from agriculture increases substantially, leading to greater volume of trade, transport and service activities. Urbanisation also encourages migration (both temporary and permanent), thus reducing surplus labour in agriculture and RNF activities. All these processes will benefit those who participate in these activities.[14]

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[14] An indication of the growing role of urbanisation is provided by the rapid increase in the share of urban population over the period under consideration (from about 15% in 1981 to 20% in 1991) with average per capita urban consumption growing at a rate of 2 per cent per annum during 1983-91 compared to just 0.3 per cent recorded for rural areas.

Change in Sectoral Composition of Rural Income

The BBS data show considerable change in the composition of rural household income (Table IV). The share of agricultural income (excluding wages) has declined from 43 per cent in 1983/84 to 40 per cent 1991/92. The weight of wages and salaries income has also declined by about 5 percentage points. This has been matched by a parallel rise in the weight of non-agricultural income (excluding wages and salaries)—from 31 to 39 per cent within the eight year period. Similar trend can be observed from the BIDS data (Table II). During the seven year period starting from 1987, the share of non-agricultural income has increased from 37 to 46 per cent. Much of this increase has come from the rising share of service incomes. Table II additionally reveals that the decline in the share of agricultural incomes has come mainly at the expense of crop agriculture and wage sector; the share of non-crop argiculture has remained unchanged at 14 per cent during the period.

The BBS data show that the growth in RNF incomes was not restricted to a particular income class only. It was important for both the poor and non-poor households.[15] Per capita non-agricultural income (excluding wages) grew at a rate of 2.9 per cent per annum for the poor vis-a-vis 2.3 per cent for the non-poor (Table V). For the poor households, the share of non-farm sector in total household income has increased from 26.3 to 34.6 per cent. The increase in the non-farm sector's share was accompanied by near-matched decline in the share of wage income (Table IV).[16]

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[15] The classification of households into "poor" and "non-poor" categories has been done by using an income cut-off mark ("poverty line"). The poverty lines used for the successive BBS surveys are noted in Table VI.

[16] The importance of RNF activities for poor and non-poor households is also revealed when one considers the relative share of major occupations among various land-size categories (Annex Tables 5 and 6).

TABLE IV
SHARE OF AGRICULTURAL AND NON-AGRICULTURAL INCOME IN TOTAL
RURAL INCOME BY POVERTY STATUS, 1983-91

				(% of current income)
Income Sources	1983/84	1985/86	1988/89	1991/92
Bottom 40%				
Agricultural income	32.3	35.4	32.5	33.9
Non-agricultural income	27.5	24.6	28.9	34.0
Wages and salaries[a]	40.2	40.0	38.6	32.1
Total	100	100	100	100
Middle 40%				
Agricultural income	42.7	42.8	41.4	41.3
Non-agricultural income	30.0	32.3	32.2	39.5
Wages and salaries	27.3	24.9	26.4	19.2
Total	100	100	100	100
Top 20%				
Agricultural income	51.7	51.1	40.2	42.6
Non-agricultural income	34.1	34.6	35.9	41.4
Wages and salaries	14.2	14.3	23.9	16.0
Total	100	100	100	100
Poor				
Agricultural income	37.1	36.5	35.2	36.9
Non-agricultural income	26.3	24.6	29.0	34.6
Wages and salaries	36.6	38.9	35.8	28.5
Total	100	100	100	100
Non-poor				
Agricultural income	47.4	46.8	40.8	41.7
Non-agricultural income	33.9	34.0	36.0	41.9
Wages and salaries	18.7	19.2	23.2	16.4
Total	100	100	100	100
All Rural				
Agricultural income	43.1	43.8	38.9	40.1
Non-agricultural income	30.8	31.1	33.6	38.9
Wages and salaries	26.1	25.1	27.5	21.0
Total	100	100	100	100

Note : [a] Wages and salaries include both agricultural and non-agricultural salaries. Both
     "agricultural income" and "non-agricultural income" exclude wages and salaries.

Source: Computed from *HES Special Tables*, generated by BBS.

TABLE V
**TREND IN RURAL INCOME GROWTH BY POVERTY
STATUS AND BY SOURCES, 1983-91·**

(Per capita annual income in 1983/84 prices)

Sources	1983/84	1985/86	1988/89	1991/92	Annual Growth Rate Over 1983-91 (%)
Poor					
1. Agricultural income	951	900	887	909	-0.6
(Non-crop agriculture)[1]	(256)	(278)	(211)	(788)	(14.1)
2. Non-agricultural income	675	608	731	851	2.9
3. Wages and salaries	936	960	900	701	-3.6
4. Total income (1+2+3)	2562	2468	2518	2461	-0.5
Non-poor					
1. Agricultural income	2564	2394	2134	2189	-2.0
(Non-crop agriculture)[1]	(464)	(582)	(374)	(1162)	(11.5)
2. Non-agricultural income	1833	1740	1883	2202	2.3
3. Wages and salaries	1017	981	1214	859	-2.1
4. Total income (1+2+3)	5414	5115	5231	5250	-0.4
All					
1. Agricultural income	1661	1712	1524	1511	-1.2
(Non-crop agriculture)[1]	(345)	(434)	(289)	(983)	(13.1)
2. Non-agricultural income	1149	1186	1288	1438	2.8
3. Wages and salaries	972	957	1053	777	-2.8
4. Total income (1+2+3)	3782	3855	3865	3726	-0.2

Notes:
1. Incomes from non-crop agriculture relate to "gross" income earned from fishery, forestry, poultry and livestock sectors, while incomes under all other sources represent "net" income.

Source: Computed from *HES Special Tables*, generated by BBS.

III. SOCIAL PROFILE OF PARTICIPANTS IN THE RNF SECTOR

The preceding sections reviewed the growth performance of the RNF sector. It has been observed that both poor and non-poor households participate in the RNF activities the importance of which is increasing over time. How heterogenous are the principal actors in the RNF sector? There may be differences not only in the level of income, but also in the socio-economic background and type of activity. This can be seen from the BIDS data. In one classification, the non-farm households are identified in terms of main occupation of the household head and the differences in terms of asset holding proxied by landholding, and skill levels proxied by education (Tables VII and VIII). In another classification, we used the information on the share of particular source of income in total household income to identify the farm/non-farm status of a household[17] (Tables IX and X).

Considerable variation appears to exist within the non-farm occupations in terms of asset holding and skill levels (which are major determinants of rural income earning capacity). About one tenth of the traders belong to the larger landownership group (Tables VII and IX). The proportion rises to 15 per cent for informal services and 26 per cent in case of formal services. Distribution of landownership is very similar among those who have reported rural industry, transport, and construction activities as their major occupation and, in that, they display similar asset-endowment position as the agricultural labourers. Thus, the share of functionally landless group is disproportionately high among these occupations (ranging from 79 to 86 per cent) which is comparable to the share observed for the agricultural labour (87 per cent). However, once the skill level is taken into consideration, non-farm households engaged in these occupations come out well ahead of the agricultural labourers. As may be seen from Table VIII, 50 per cent of the households engaged in rural industry have some exposure to formal schooling compared to only 21 per cent for agricultural labourers; the matched figures for those engaged in transport and construction sectors are 30 and 38 per cent, respectively. Contrast in the skill levels is particularly revealing in trade and service sectors. About 26 per cent of traders have at least secondary level education; 10 per cent of them have higher education. Most of the service sector households have at least secondary level education (68 per cent); about 31-38 per cent of them have higher education. This pattern is also discernible in the rural industrial sector.

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[17] In the rural Bangladesh context, only a small proportion of households will fall under the "pure" category of farm and non-farm households. The prevalent pattern points to the preponderance of two or more occupations in a household (see, annex Table 6).

As per the criterion of major occupation of household head, about 17 per cent of the households engaged in rural industry have at least secondary level education; the corresponding figure rises to 24 per cent when the criterion of main source of income is considered.[18]

The upshot of the above is to point out the presence of heterogeneity in the economic background of actors in the RNF sector. A sizeable proportion of them have land and, more importantly, better quality of human resources. Dualism in terms of economic background exists in service, trade, rural industry, and transport sectors. Thus, the rural non-farm workers do not represent only people being pushed out of agriculture.

So far the discussion has focussed on the growth performance of the RNF sector. The issue of distributive implications of the RNF growth has remained unaddressed. In the next two sections, we shall analyze the likely impact of RNF growth on poverty and inequality.

TABLE VI
SUMMARY STATISTICS ON GROWTH, POVERTY AND INEQUALITY
IN RURAL BANGLADESH, 1983/84-1991/92

		1983/84	1985/86	1988/89	1991/92
A.	**Growth**				
	Nominal mean consumption (Tk/person/month)	284.84	373.93	435.39	509.67
	Poverty line (Tk/person/month)	268.92	319.06	379.08	469.13
	Mean/poverty line (%)	106	117	115	109
B.	**Poverty (consumption measure)**				
	Head-count (%)	53.8	45.9	49.7	52.9
	Poverty gap (%)	15.0	10.9	13.1	14.6
	Squared poverty gap (%)	5.9	3.6	4.8	5.6
C.	**Agricultural wage rate (index)**	100	128	104	103
D.	**Inequality**				
	Gini-index for consumption	24.6	24.6	26.5	25.5

Source: Ravallion and Sen (1994).

[18] Within each sub-sector there is considerable difference in economic background according to the type of activity. Shopkeepers and wholesalers are generally better educated than the petty traders, so are mechanized boat owners compared to the rickshaw and rickshaw van operators (Hossain et al. 1993). Social dualism in the handloom sector (the largest employer within the rural industry) has been discussed in another BIDS study (Sobhan 1989).

TABLE VII

DISTRIBUTION OF NON-FARM HOUSEHOLDS (AS DEFINED BY THE MAIN OCCUPATION OF THE HOUSEHOLD HEAD) BY THE SIZE OF LANDHOLDING, 1994

(% of households)

Landholding Size (acres)	Cultivator	Agr. labour	Rural Industry	Trade	Trans-port	Construc-tion	Informal Service	Formal Service
Landless and Functionally Landless (less than 0.5)	19.0	87.3	83.3	67.2	86.4	79.1	23.0	36.8
Marginal and Small (0.5-2.49)	50.3	12.3	14.6	23.4	13.6	20.9	61.6	36.8
Medium and Large (2.5+)	30.7	0.4	2.1	9.4	-	-	15.4	26.4
Total	100.0	100.0	100.0	100. 0	100.0	100.0	100.0	100.0

Source: Calculated from the primary data collected through the 1994 BIDS re-survey of 62-villages.

TABLE VIII

DISTRIBUTION OF NON-FARM HOUSEHOLDS (AS DEFINED BY THE MAIN OCCUPATION OF THE HOUSEHOLD HEAD) BY LEVEL OF EDUCATION OF THE HOUSEHOLD HEAD, 1994

Level of Education	Cultivator	Agri Labour	Rural Industry	Trade	Trans-port	Cons-truction	Informal Service	Formal Service
No formal schooling	45.3	78.6	50.0	46.0	69.5	62.5	23.0	11.2
Up to Primary	26.7	16.1	33.3	27.7	25.4	29.2	7.7	20.0
Secondary	18.1	4.5	14.6	16.8	5.1	8.3	38.5	31.2
Above Secondary	9.9	0.8	2.1	9.5	-	-	30.8	37.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Calculated from the primary data collected through the 1994 BIDS re-survey of 62-villages.

TABLE IX

DISTRIBUTION OF NON-FARM HOUSEHOLDS BY THE SIZE OF LANDHOLDING, 1994

Landholding Size (acres)	Trader		Transport Operator		Rural Industry Owner/Worker		Service-holder (all types)		Formal Service-holder		Informal Service-holder		Non-crop Agriculturist	
	Category I	Category II	Category I	Category II	Category I	Category II	Category I	Category II	Category I	Category II	Category I	Category II	Category I	Category II
Landless and functionally landless (less than 0.5)	54.3	63.6	75.7	79.7	70.0	70.6	44.4	51.0	33.8	38.9	72.0	81.1	32.9	35.7
Marginal and small (0.5-2.49)	32.2	26.4	20.0	15.3	25.0	29.4	39.5	35.9	46.5	46.0	25.4	17.0	42.4	35.7
Medium & large (2.5+)	13.5	10.1	4.3	5.1	5.0	–	16.1	13.0	19.7	15.0	2.7	1.9	24.7	28.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Households are classified under "Category I" if the share of respective source-income exceeds one-third of the total household income. "Category II" is used to define households where the share of source-income exceeds more than half of the total household income.

Source: Calculated from primary data collected through the 1994 BIDS re-survey of 62-villages.

TABLE X

DISTRIBUTION OF NON-FARM HOUSEHOLDS BY LEVEL OF EDUCATION
OF THE HOUSEHOLD HEAD, 1994

Level of Education	Trader		Transport Operator		Rural Industry Owner/Worker		Service-holder (all types)		Formal Service-holder		Informal Service-holder		Non-crop Agriculturist	
	Cate-gory I	Cate-gory II	Cate-gory I	Cate-gory II	Cate-gory I	Cate-gory II	Cate-gory I	Cate-gory II	Cate-gory I	Cate-gory II	Cate-gory I	Cate-gory II	Cate-gory I	Cate-gory II
No formal schooling	43.0	48.1	71.4	71.2	45.0	41.2	35.6	37.0	29.9	32.7	62.7	62.3	49.3	46.4
Up to Primary	28.0	26.4	20.0	18.6	30.0	35.3	23.0	21.9	26.1	23.9	21.3	24.5	19.2	25.0
Secondary	22.0	20.2	8.6	10.2	25.0	23.5	21.1	21.9	26.8	26.5	6.7	5.7	19.2	17.9
Above Secondary	7.0	5.4	-	-	-	-	20.3	19.3	17.2	16.8	9.3	7.5	12.3	10.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Households are classified under "Category I" if the share of respective source-income exceeds one-third of the total household income. "Category II" is used to define households where the share of source-income exceeds more than half of the total household income.

Source: Calculated from primary data collected through the 1994 BIDS re-survey of 62-villages.

IV. INCIDENCE OF POVERTY BY MAJOR OCCUPATION

Is the movement to rural non-farm occupations poverty-reducing? To answer this question, we perform analysis in two stages. First, we examine the link between occupation and poverty as evidenced from the BBS and BIDS data. At the second stage of analysis, we shall draw upon results (based on a typical household income determination model) to show how and to what extent the participation in non-farm activities contribute to rural poor's income.

The standard Foster-Greer-Thorbecke (FGT) class of poverty measures is estimated for each of the major occupational categories.[19] Here the attention is given primarily to the comparison of poverty across various occupations for a given survey year, rather than to make comparison over time.

Poverty estimates based on the BBS surveys are reported in Table XI. The relative ranking of major rural occupations in terms of incidence of poverty is fairly stable over the four survey periods conducted between early eighties and early nineties.[20] The poverty ranking of the occupations varies little when one switches from one type of poverty measure (such as head-count) to another (such as poverty gap or squared poverty gap). Here we discuss the results of the last two surveys. The highest incidence of poverty is recorded in case of agricultural labourers (the head-count measure ranging from 67 to 71 per cent). The lowest incidence is reported by the formal sector serviceholders (ranging from 14 to 18 per cent). The incidence of poverty among fishermen is also very high, next to that for agricultural labourers (varying from 52 to 60 per cent). Within the

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[19] Three poverty measures are used here; together they capture three aspects of poverty: its incidence, its depth, and its severity (for details see Revallion 1994). The first of these measures is the head-count index (H) and given by the percentage of population who live in households with a per capita income less than the poverty line. This is the measure for "incidence" of poverty. The measure is easy to interpret, but it does not inform us about the depth or severity of poverty. The second measure is the poverty gap index (PG) which is defined by the mean distance below the poverty line as a proportion of that line (where the mean is formed over the entire population, counting the non-poor as having zero poverty gap). This is the measure for poverty "depth". However, it is insensitive to changes in distribution among the poor. The last of these measures is the squared poverty-gap index (SPG), introduced by Foster, Greer and Thorbecke, defined as the mean of the squared proportionate poverty gaps (again the mean is formed over the entire population, counting the non-poor as having zero poverty gap). Since the poverty gaps are weighted here in aggregation, with higher weight being given to larger gaps (and where the weights are simply the poverty gaps themselves), this index is sensitive to inequality among the poor. This allows to reflect the "severity" of poverty. In that it is similar to Sen's index, but it has the added advantage of having additive decomposability.

[20] There is some difference in the poverty ranking of occupations between the first two and last two surveys. However, they do not affect the broad conclusions derived in the subsequent discussion.

category of farmers, poverty is higher for the tenant farmers than in the owner farmers group (37-38 vis-a-vis 19-24 per cent).[21]

The households engaged in non-farm occupations occupy an intermediate position between the farmers and agricultural labourers. This suggests that the non-farm sector considered as a whole can no longer be viewed as a "residual" category. For the land-poor, the movement to non-farm occupations has favourable poverty alleviating implications, as indicated by much lower incidence of poverty in the RNF sector (ranging from 40 to 50 per cent) compared to the class of agricultural labourers (67-72 per cent). This is true not only for non-farm self-employment, but also for rural non-agricultural wage-employment. Thus, the incidence of poverty among the non-agricultural wage labourers is much lower than the agricultural labourers (41-50 per cent compared to 67-71 per cent).

The BIDS evidence further reinforces the above results. As may be seen from Table XIII, the highest incidence of poverty is found in the case of the wage labourers, while it has been the lowest for the cultivators. The "intermediate" position is held by those engaged in non-farm occupations such as trade, and service activities. Within the wage labourers, the non-agricultural workers have lower incidence of extreme poverty than the agricultural workers. Table XIV additionally reveals the greater importance of non-farm occupations for the landless and functionally landless group with land-size up to 0.5 acres. Those among the latter who manage to participate in non-farm activities have lower incidence of poverty than their counterparts in farm occupations (60-77 per cent vis-a-vis 84-86 per cent).[22]

What is the implication of the above finding regarding the lower poverty in the households typically engaged in the RNF sector vis-a-vis the class of agricultural labourers? It shows that, at least for the land-poor group, a shift from farm to non-farm occupations will most likely be poverty-reducing. And, such shift cannot be characterised now mainly as an expression of increase in extreme poverty (as may have been the case in the seventies). Based on 1976/77 HES, Osmani (1990a) earlier concluded that the households involved primarily in informal rural non-farm activities are the worst-

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[21] Access to land rental market offers considerable scope to the land-poor (defined as households owning land up to 2.5 acres) for poverty alleviation, the potentials being higher than in the case of switch to non-farm occupations. However, such access is limited for the bulk of the land-poor.

[22] It may be noted that the households from this land-size group form the usual clientele of the Grameen Bank like targeted programmes.

off among all groups, worse than even the landless farm workers. This no longer seems to be the typical case in rural Bangladesh.

If one considers the trend in poverty by major occupations over the entire eight year period, some additional features are noticeable. The incidence of poverty among the agricultural labourers has increased (from 63 to 71 per cent). Similar deterioration may be observed in case of fishermen (the matched figure increased from 43 to 60 per cent). In contrast, the poverty has declined (almost by all three measures[23]) in the case of those engaged in service and rural industry, tenant farmers, and traders. However, except for the serviceholders, the declining trend in poverty in these occupations is not stable over all four surveys. Another point is that the fluctuation in poverty rates within each group is closely tracked by the movement in real mean (Table XII). Poverty declined with increase in the real mean, and it rose when the real mean dropped.

The poverty-alleviating effect of RNF sector can be further shown by estimating a suitable household income determination model. Such model was previously applied, using the 1989/90 survey data of BIDS (Hossain and Sen 1992). The model was estimated for the entire sample as well as for the farm and non-farm households (defined by occupation status), and for the poor and non-poor[24] (Table XV). We shall summarize here only the key results pertinent to the present discussion. As the Table shows, the workers engaged in non-farm activities contribute more to the household income than agricultural workers. The regression coefficient of the variable representing non-agricultural occupation is found positive and statistically highly significant in all the income equations. The return for workers employed in RNF activities is about 13 per cent higher compared to an average worker for poor household. The matched figure for the non-poor households is still higher (29 per cent). The higher positive effect of the movement from agriculture to

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[23] The trader category is one exception to this. The distributionally sensitive squared poverty gap measure fo traders had increased slightly from 2.51 to 2.66 over 1983-91.

[24] The regression equations are estimated in log linear forms. Natural logarithms are taken for the dependent variable income as well as for total land owned and total number of workers. The tenancy and technology variables are measured in the ratio form, i.e., by the proportion of cultivated land rented-in from others, and by the proportion of cultivated area under high-yielding varieties. The differential earnings of the workers engaged in non-agricultural activities, and of the female workers, is captured by measuring these variables in ratio forms, i.e., as a proportion of total workers. Since the level of education may not have linear effect, dummy variables have been used to estimate the effect of different levels of education of the household head, using "no formal education" as control. The two infrastructural variables relating to electricity and transport have been measured as village-level dummies (villages with "good transport" and with "access to electricity" have been assigned 1, and those without such, the value "0"). The household level dummy has been used for the remittance variable (households receiving remittances have been assigned 1, and 0 otherwise).

TABLE XI
POVERTY BY MAJOR OCCUPATIONAL CATEGORY, 1983/84-1991/92 : PER CAPITA EXPENDITURE CLASSIFICATION

Major Occupationl Category	Head-count				Poverty-gap				Squared Poverty-gap			
	1983/84	1985/86	1988/89	1991/92	1983/84	1985/86	1988/89	1991/92	1983/84	1985/86	1988/89	1991/92
Owner farmer	25.20	32.03	19.19	24.06	4.67	5.46	2.91	4.01	1.41	1.39	0.78	1.06
Tenant farmer	53.20	35.21	36.47	37.33	13.71	7.57	6.33	7.56	5.25	2.43	1.61	2.46
Agricultural labourer	62.50	n.c	66.82	71.04	17.19	n.c	18.55	21.23	6.95	n.c	6.93	8.54
Trader	43.73	34.80	37.63	41.44	9.06	6.99	6.85	8.95	2.51	2.03	1.63	2.66
Non-agricultural labourer	58.67	39.94	40.73	50.42	12.38	7.92	10.64	14.11	3.76	2.43	3.45	5.55
Formal sector service-holder	32.52	24.84	17.63	13.77	7.02	5.12	3.97	3.45	2.12	1.65	1.40	1.27
Rural industry worker	52.37	36.20	47.94	40.42	15.32	8.32	10.46	9.04	5.90	2.75	3.03	3.41
Fisherman	43.36	35.25	52.06	60.07	12.03	9.22	12.46	15.04	5.37	3.45	4.08	5.11
Others	52.95	57.04	56.86	51.73	16.62	10.70	15.11	11.99	7.61	2.77	4.94	4.15

Source : Computed from *HES Special Tabulation* generated by BBS.

TABLE XII
TRENDS IN INCOME BY MAJOR OCCUPATIONAL CATEGORY

Major or Occupational Category	Nominal Mean				Nominal Mean/Poverty Line (%)			
	1983/84	1985/86	1988/89	1991/92	1983/84	1985/86	1988/89	1991/92
Owner farmer	388.07	444.90	550.84	664.84	144.31	130.03	145.31	141.72
Tenant farmer	271.95	420.05	464.80	545.16	101.13	131.65	122.61	116.21
Agricultural labourer	255.33	388.89	363.38	415.81	94.95	121.89	95.86	88.63
Trader	339.45	436.32	525.65	591.51	126.23	136.75	138.66	126.30
Non-agricultural labourer	273.20	360.01	476.41	517.28	101.59	112.83	125.68	110.26
Formal sector service-holder	356.62	488.29	673.59	825.74	132.61	153.04	177.69	176.02
Rural industry worker	310.58	387.66	413.62	562.03	115.49	121.50	109.11	119.80
Fisherman	316.61	449.86	412.97	466.42	117.73	140.99	108.94	99.40
Others	287.62	323.05	395.39	517.80	106.95	101.25	104.30	110.37

Note: Nominal mean represents per person per month income in current price. Nominal mean has been normalized by poverty line to derive index of real mean ("real" in terms of specific basic-need bundle of goods).

Source: Computed from *HES Special Tabulation* generated by BBS.

TABLE XIII
INCIDENCE OF POVERTY: BY OCCUPATION, 1989/90

Principal Occupation	Extreme Poverty		Extreme and Moderate Poverty	
	Incidence of Poverty (per cent)	Share of the Poor (per cent)	Incidence of Poverty (per cent)	Share of the Poor (per cent)
Agricultural wage labour	54.5	30.6	84.5	23.6
Non-agricultural wage labour	42.8	16.6	85.6	15.4
Cultivator	16.1	28.1	40.9	35.4
Trader	19.9	6.9	53.2	9.2
Services	27.8	10.9	47.1	9.2
Others	38.5	6.9	61.5	7.2
Total	27.5	100.0	55.4	100.0

Source: Hossain (1995b).

TABLE XIV
**INCIDENCE OF POVERTY BY OCCUPATION, CONTROLLING
LANDHOLDING SIZE, 1989/90**

Occupation	Landholding Size (acres)							
	Extreme Poverty				Extreme and Moderate Poverty			
	Less than 0.50	0.5-2.49	2.5-4.99	5.00 & Above	Less than 0.50	0.5-4.99	2.5-4.99	5.00 & Above
Cultivator	54.1	18.9	7.5	3.0	83.4	55.6	31.2	8.8
Wage labour	57.9	39.9	*	*	85.9	80.5	*	*
Traders	25.6	13.6	12.2	14.6	60.0	58.4	12.2	14.6
Service	35.8	20.5	17.1	16.4	76.8	51.4	17.1	16.4
Others	49.5	25.5	21.8	4.3	76.5	42.1	47.3	4.3

Source: Hossain (1995b).

TABLE XV
DETERMINANTS OF RURAL HOUSEHOLD INCOME:
REGRESSION ESTIMATES

Descriptions	All Households		Farm Households		Non-Farm Households		Poor Households		Non-Poor Households	
	Regression Coefficient	't' Value	Regression Coefficient	't' Value	Regression Coefficient	't' Value	Regression Coefficient	't' Value	Regression Coefficient	't' Value
Land owned (acres)	0.257	20.0**	0.274	14.03*	0.153	6.20**	0.139	9.10*	0.203	11.52
Proportion of cultivated land under tenancy	0.159	2.7**	0.109	1.50	—	—	0.218	3.50**	0.043	0.52
Proportion of cultivated land under modern variety	0.033	2.5**	0.023	1.80*	—	—	0.043	1.84*	0.020	1.68*
No. of earning members	0.460	11.15**	0.456	9.62**	0.342	4.14**	0.375	7.35**	0.489	10.44**
Proportion of female earning members	-0.586	-5.43**	-0.178	-1.14	-0.667	-4.24**	-0.520	-4.38*	-0.437	-3.08*
Proportion of non-agricultural earners	0.256	5.19**	0.265	4.28**	0.315	3.76**	0.131	2.28**	0.285	4.76**
Household head with primary education	0.073	1.28	0.052	0.78	0.098	0.92	0.121	1.87*	0.010	0.14
Household heads attending secondary school	0.080	1.47	0.082	1.35	0.034	0.32	-0.004	-0.07	0.184	2.77**

(Contd.)

TABLE XV (Contd.)
DETERMINANTS OF RURAL HOUSEHOLD INCOME:
REGRESSION ESTIMATES

Descriptions	All Households		Farm Households		Non-Farm Households		Poor Households		Non-Poor Households	
	Regression Coefficient	't' Value	Regression Coefficient	't' Value	Regression Coefficient	't' Value	Regression Coefficient	't' Value	Regression Coefficient	't' Value
Household heads having higher certificate or higher degrees	0.365	6.74**	0.344	5.83**	0.434	3.69**	0.150	2.03**	0.301	5.07**
Household receiving remittance	0.041	0.69	0.080	1.15	0.038	0.35	0.029	0.38	0.112	1.70*
Village with access to electricity	0.272	5.40**	0.227	3.81**	0.333	3.64**	0.140	2.18**	0.171	3.12**
Village with good transport facilities	0.110	2.48**	0.104	2.02**	0.138	1.70*	0.131	2.39**	0.060	1.18
R^2	0.49		0.48		0.30		0.29		0.49	
No. of cases	1112		759		353		591		521	

Note : * Denotes significance at less than 10 per cent. The dependent variable is measured in logarithms of household income. The variables of total land owned and number of workers are also measured in logarithm forms.

       ** Denotes that the regression coefficient is significant at less than 5 per cent probability error.

Source : Hossain and Sen (1992).

non-agriculture on non-poor's income may be due to their better capital and human resource endowment. On the whole, these findings are suggestive of the important role of the development of RNF activities in the alleviation of rural poverty.

V. NON-FARM SECTOR AND RURAL INCOME INEQUALITY

Does participation in RNF sector helps income mobility of the land-poor and acts in the direction of moderating overall rural income inequality? To address this question, the households are first ranked on the basis of per capita income, and the income share of the bottom 40% is estimated. The similar exercise is done by ranking households with respect to per capita landownership. The land-poor group is defined by the bottom 40% of population along the landownership scale. How the income share of bottom 40% varies between the two scales is then analyzed to see which sources help the land-poor to move along the income ladder.[25] The results are summarized in Table XVI.

As is known, land-distribution in rural Bangladesh is highly skewed. According to the BIDS 62-village survey of 1989/90, the bottom 40 per cent owned only 3 per cent of the total land (the Gini ratio for landownership was estimated at 0.65). The distribution of rural income is, however, less unequal than the distribution of land (the Gini ratio for total rural income was 0.36 in 1991/92[26]). What are the factors behind the moderation of income inequality? We discuss the issue by referring to the 1991/92 results (similar trend is observed for 1988/89).

The inequality of agricultural income is moderated by the operation of agricultural labour and tenancy markets. In the tenancy market, land is transferred from land-rich to land-poor farmers. As a result, the share of bottom 40% in total agricultural income increases to 19 per cent, even though they account for only 3 per cent of total land. Through the operation of the agricultural labour market, the share of bottom 40% in total agricultural income increases further to 26 per cent.

However, the most important factor behind the moderation of rural income inequality lies in the nature of functioning of RNF sources. Land-poor households who manage to participate in the non-agricultural activities such as trade, commerce, industry and

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[25] For a previous application of this method, see Hossain (1995a).

[26] The Gini estimates for total rural income are done by BBS and taken from World Bank (1995).

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TABLE XVI

**SHARE OF BOTTOM 40% IN THE DISTRIBUTION OF INCOME:
PER CAPITA INCOME AND LANDOWNERSHIP SCALES, 1988/89-1991/92**

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	(in %)	
	1988/89	1991/92
1. Non-crop agriculture (fishery, forestry, poultry, livestock)		
per capita income scale	26.91	30.04
per capita land scale	22.08	27.52
2a. Total agriculture (excluding agricultural wage)		
per capita income scale	19.32	19.41
per capita land scale	8.93	11.20
b. Total agriculture (including agricultural wage)		
per capita income scale	26.10	25.54
per capita land scale	21.18	20.72
c. Asset rental income		
per capita income scale	12.05	9.33
per capita land scale	12.43	7.50
3. Wages and salaries (agricultural plus non-agricultural)		
per capita income scale	32.45	35.05
per capita land scale	49.00	51.30
4. Trade, commerce, industry and services		
per capita income scale	20.11	27.80
per capita land scale	40.18	42.94
(a) Trade		
per capita income scale	19.15	25.77
per capita land scale	37.72	39.85
(b) Transport and storage		
per capita income scale	44.31	45.34
per capita land scale	78.73	65.49
(c) Rural industry		
per capita income scale	18.48	25.40
per capita land scale	41.16	41.61
5. Remittances		
per capita income scale	10.23	15.02
per capita land scale	23.35	28.11
6. Informal social transfers		
per capita income scale	39.50	36.87
per capita land scale	62.65	58.26
7. Total non-agriculture (excluding wages and salaries)		
per capita income scale	19.84	20.06
per capita land scale	34.43	33.83
8. Total non-agriculture (including wages and salaries)		
per capita income scale	23.08	22.95
per capita land scale	28.50	28.40
9. Total rural income		
per capita income scale	n.e	14.8 [1]
per capita land scale	n.e	2.8 [1]

Note: [1] Figures related to 1989/90 (Hossain (1995a)

n.e = not estimated.

Source: Cmputed from *HES Special Tables,* generated by BBS.

services move up the income ladder. This is the reason why the source Gini for non-agricultural incomes is found to be much higher when measured in the per capita income scale compared to the landownership scale. Indeed, for many of these sources of incomes, we could not estimate the source Gini as per the landownership scale.[27] But this trend can be demonstrated even by comparing just the income share of bottom 40% between the two scales. For a given source, if the income share according to the per capita landownership scale is found higher than the matched figure obtained under the per capita income scale, then the said source is to be viewed as helping the income mobility of the land-poor.

Following the above criterion, we find that access to non-farm sector in general (including particular sources such as trade, transport, rural industry, remittances) contribute to the income mobility of the land-poor, thus moderating overall rural income inequality. The income share of bottom 40% as per the landownership scale is quite substantial in these sectors (ranging from 66 per cent in case of transport to 40-42 per cent with respect to trade and rural industry). Their share is also considerable in the case of non-crop agriculture (about 28 per cent). These figures may be contrasted to only 11 per cent recorded for agricultural income (excluding agricultural wages). One implication of this finding is that the growth of these sectors will have strong trickle-down effects for the poor and, on balance, such growth is likely to be inequality-moderating.

VI. SUMMARY AND CONCLUSIONS

The review of the performance of the RNF sector over the decade since 1983/84 undertaken in this paper points to several findings:

First, there has been positive growth in RNF sector. Per capita non-farm income (excluding non-agricultural wages) has grown at a rate of 2.8 per cent during 1983-91.

Second, the rising importance of RNF sector for both poor and non-poor households is particularly revealing. For the poor households, the share of non-farm income in total household income has increased from 26.3 to 34.6 per cent in eight year period. This increase in the non-farm sector's share was accompanied by near-matched decline in the share of wage income.

Third, the agricultural sector (particularly crop agriculture) displays intensive pattern of growth (i.e., growth with rising

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[27] This was also true for some of the income sources for which we tried to measure the Gini Index in the per capita income scale. Depending on the survey year, the examples of this kind relate to trade, transport, rural industry, informal social transfers, and wage income (see, annex Table 2).

labour productivity) while it is the extensive pattern which characterises the RNF growth process (i.e., whereby output grows with little change in labour productivity). The labour productivity in crop agriculture has increased according to the 62-village panel survey of BIDS. This has created the scope for releasing workers at the household level to perform non-agricultural tasks. On the whole, the BIDS survey also indicates that the labour productivity has changed little in the RNF sector during the period under consideration.

Fourth, the non-farm households no longer appear to be the worst category of the poor, and movement to rural non-farm occupations has been poverty-reducing, on balance, during this period. In terms of poverty-ranking, the RNF households occupy an intermediate position between the farmers and the agricultural labourers. According to 1988/89 and 1991/92 HES, the incidence of poverty among non-farm occupations ranges from 40-50 per cent compared to 67-72 per cent observed for the agricultural labourers.

Fifth, participation in RNF sector helps income mobility of the land-poor and acts in the direction of moderating overall inequality in rural income distribution.

The new piece of evidence assembled in this paper tends to suggest that the expansion of the RNF sector since 1983/84 cannot be viewed as the persistence of a "residual" sector phenomenon. The negative image associated with such characterisation predicts declining output and higher incidence of poverty in this sector. Another view which tends to uphold the thesis of a dynamic non-farm sector (the beginning of a "Lewisian transition") exaggerate the presence of the positive features. None of these descriptions, however, seems to give the true picture.

In this paper, we have presented evidence to argue that the characterisation of RNF as "residual" sector phenomenon with little promise for growth is no longer the typical scenario in rural Bangladesh. The shift to non-farm occupations has been, on balance, pro-poor in nature, both in terms of greater potentials for poverty alleviation in these activities and moderating overall income inequality. The land-poor who after all can manage to participate in RNF activities are certainly better off than those who remain restricted to the agricultural wage labour.

The other, "dynamic", characterisation of the sector is also an overstatement, since it fails to recognize the lack of improvement in labour productivity in many RNF activities, affecting the long-term sustainability of the sector. The consequent overcrowding at the lower end of the productivity scale can hardly be ignored.

Credit, skill development, technology, information, market access, and effective targeting are the major constraints in the way of poor's increased participation in these sectors. Some progress has been made in these areas of supply-side intervention during the eighties, but in overall terms they were clearly inadequate to the need.

'On the demand side, the sluggish growth of agricultural sector in overall terms will continue to be the major factor negatively influencing the development of the RNF sector. The consumption linkages of the technological progress in agriculture is particularly important in promoting non-farm growth. The sustainability of RNF growth as well as the possibilty of its graduation into a dynamic sector will much depend on how the technological progress is further sustained in agriculture. But, agriculture is but only one source of demand for the RNF sector. As mentioned earlier, three other sources of demand originating from urbanisation, intra-sectoral demand, and foreign demand (a recent example of which is Grameen check). Linkage effects of urbanisation have played an important role in the development of RNF sectors and in the alleviation of rural poverty, particularly since the early eighties. With growing urbanisation, the demand for marketable surpluses increased substantially, leading to greater volume of trade, transport, and service activities. Rapid urbanisation has also helped to absorb the surplus labour in agriculture and RNF activities. The role of the last two factors is less clear from the available data, but they are going to be important in the future.

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Appendix

TREND IN PER CAPITA INCOME BY SECTOR, AS ESTIMATED
BY HOUSEHOLD INCOME EXPENDITURE SURVEYS

(in 1983/84 prices)

Sources		1983/84	1985/86	1988/89	1991/92
1.	Non-crop agriculture (fishery forestry, poultry, livestock)	345	434	289	983
2a.	Total agriculture (excluding agricultural wage)	1661	1712	1524	1511
2b.	Total agriculture (including agricultural wage)	na	na	2039	1869
3a.	Total non-agriculture (excluding wages and salaries)	1149	1186	1288	1438
3b.	Total non-agriculture (including wages and salaries)	na	na	1700	1706
4.	Trade, commerce, industry, etc.	631	629	679	479
	(a) Trade	na	na	451	297
	(b) Transport and storage	na	na	26	31
	(c) Industry	na	na	71	38
	(d) Others	na	na	132	113
5.	Remittances	158	189	165	351
6.	Informal social transfers	22	22	37	39
7.	Agricultural wage	na	na	548	388
8.	Non-agricultural wage and salaries	na	na	505	389
9.	Wages and salaries	972	957	1053	777
10.	Total	3782	3855	3865	3726

Source: Computed from HES Special Tables generated by BBS.

TABLE A. 2
TREND IN GINI INDEX OF INCOME INEQUALITY, BY SOURCES:
PER CAPITA INCOME SCALE, 1988/89-1991/92

(in %)

		1988/89	1991/92
1.	Non-crop agriculture (fishery, forestry, poultry, livestock)	22.25	n a
2a.	Total agriculture (excluding agricultural wage)	34.36	32.97
b.	Total agriculture (including agricultural wage)	24.58	23.67
c.	Asset rental income	52.57	54.85
3.	Wage and salaries	18.64	na
4.	Trade, commerce, industry and services:	31.77	17.16
	(a) Trade	33.89	na
	(b) Transport and Storage	na	na
	(c) Rural industry	na	25.27
5.	Remittances	53.48	42.94
6.	Informal social transfers	na	11.17
7.	Total non-agriculture (excluding wages and salaries)	33.91	32.75
8.	Total rural income	37.0	36.0

Notes:

1.   Incomes from non-crop agriculture relate to "gross" income, while incomes from all other sources represent "net" income.

2.   na = not applicable; it means that Gini for these sources of income could not be estimated by using a parametarized Lorenz curve, the distribution of source income being "too egalitarian".

Source: Computed from HES Special Tables, generated by BBS.

TABLE A.3
**MARGINAL BUDGET SHARES AND EXPENDITURE
ELASTICITY OF DEMAND, 1982**

Commodity Group	Average Budget Share	Marginal Budget Share	Expenditure Elasticity of Demand
Crops	64.94	50.26	0.77
Forestry	3.59	2.82	0.79
Livestock	4.22	5.80	1.38
Fishery	3.95	5.01	1.27
Rural processing	9.51	11.22	1.18
Urban processing	7.51	11.21	1.49
Services	6.21	13.46	2.17

Source: Hossain (1988).

TABLE A.4
**EXPENDITURE PATTERN OF HOUSEHOLDS IN DEVELOPED AND
UNDERDEVELOPED VILLAGES, 1982**

	Underdeveloped Villages			Developed Villages		
	Average Share	Marginal Share	Expenditure Elasticity	Average Share	Marginal Share	Expenditure Elasticity
Crops	66.97	56.47	0.84	62.91	44.95	0.71
Forestry	4.12	3.21	0.78	3.08	2.72	0.88
Livestock	4.43	5.70	1.29	4.00	6.35	1.59
Fishery	3.55	4.22	1.19	4.35	5.32	1.22
Rural manufacture	9.54	12.40	1.30	9.48	11.29	1.09
Urban manufacture	7.20	10.50	1.46	7.97	12.44	1.56
Services, including:	4.20	7.50	1.79	8.21	17.93	2.18
(Transport)	0.73	0.95	1.30	0.98	1.93	1.96
(Other services)	0.53	1.30	2.44	0.86	2.83	3.28

Source: Hossain (1988).

TABLE A.5
PRINCIPAL INCOME SOURCE OF HOUSEHOLDS BY LAND
OWNERSHIP STATUS, 1989/90

(Figures represent percentages of row total)

Land Ownership Category (acres)	Principal Source of Income						
	Farm	Agri-Labour	Non-Agri-Labour	Cottage Industry	Business	Services	Total
Landless (less than 0.05)	12	38	20	2	21	7	100
Functionally landless (0.05-0.49)	17	31	22	4	14	12	100
Marginal owner (0.50-1.49)	56	10	8	2	14	10	100
Small Owner (1.50-2.49)	77	3	3	-	6	11	100
Medium owner (2.50-4.99)	80	-	-	2	8	10	100
Large owner (5.00+)	86	-	-	-	9	5	100
All households	**43**	**19**	**13**	**2**	**13**	**10**	**100**

Souce: Sen (1995).

TABLE A.6
INCIDENCE OF MULTIPLE OCCUPATION BY
LANDOWNERSHIP CATEGORIES, 1989/90

Land Ownership Group (in acres)	% Distribution of Hoseholds by No. of Income Sources				
	1	2	3	4	5
Landless (less than 0.05)	27	42	26	4	1
Functionally landless (0.05-0.49)	26	36	28	9	1
Marignal owner (0.50-1.49)	13	45	28	11	3
Small owner (1.50-2.49)	22	46	25	6	1
Medium owner (2.50-4.99)	21	55	18	6	-
Large owner (5.00+)	23	56	19	2	-

Source: Sen (1995).