Smallholder Characteristics Assessed by Household Welfare differences

Analysis of the Agricultural Sample Census 2002-2003

Presented to the Research and Analysis Working Group's Open Seminar on 6 July 2006

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23rd of June 2006

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Summary

Based on the 2002/03 Agricultural Sample Census a poverty analysis was carried out, using information obtained through the smallholders' questionnaire. In total 48,345 households were included from 3,221 villages/enumeration areas. Information from the poverty module that was included in the smallholder questionnaire was used to construct a household poverty index. Households were ranked according to this index score and divided into 5 equal size groups, the first group including the poorest 20% of households and the fifth group containing the richest 20% of households.

The main findings of the study are:

- Children and elderly show higher representation in poorer compared to wealthier households
- Strong positive correlation between years of education and wealth. Moving of the older to younger generations it seems that the education gap between the poorest and richest narrowed when comparing elderly and the age group 15 to 59 and widened again comparing 15 to 59 and children below the age of 15.
- In about 13 percent of the richest households wages/salaries are the main form of smallholder household income compare to less than 1 percent in the poorest households. About 60 percent of heads of the poorest households earn some kind of off-farm income compared to 70 percent of the heads of the richest households.
- Access to piped water strongly increases with wealth from less than 1 percent in the poorest households to close to 50 percent in the richest households. Seasonal variations in access to drinking water have a high impact on the poor, shown by the increase in time needed to fetch drinking water.
- Around 19 percent of the poorest smallholder households do not have any kind of toilet facility, compared to only 1 percent of the wealthiest households.
- Metal sheet roofing is for the wealthier and wealthiest the most common type of roofing; grass and leaves is most common among the poorest, poorer and middle quintile households.
- Poorer households are more crowded than the better-off households. In the poorest households one room is shared by 2.8 household members compared to 1.8 people per room in the wealthiest households.
- Households form the highest quintile are 7 times more likely to take 3 or more meals per day compared to households from the poorest quintiles. Differences in frequency of meat consumption show differences of the same magnitude.
- The poorest smallholder households are over 3 times more likely to be 'often' or 'always' food than the wealthiest households. There is however a strong regional component, households within the region Dodoma, Arusha, Morogoro, Pwani, Dar es Salaam, Lindi, Singida, Shinyanga and Manyara are more likely to be food insecure than household from the other region, regardless of their wealth/poverty status.
- Access to land does not show dramatic differences among the wealth quintiles, the acreage of land at the disposal of the smallholder households increases gradually from 5.3 among the poorest households to 6.7 acres among the

wealthiest households. The amount of land under certified ownership is very low, between 60 and 70 percent of land is owned under customary law. All poverty/wealth groups equally face shortage of available agricultural land; 46 to 47 percent of households find the currently available land insufficient.

- Ownership of hand hoe is common among all poverty/wealth quintiles. Other equipment shows a higher rate of ownership among the wealthier, especially the highest quintile. Livestock ownership is more common among the wealthier than the poorer households. Herd sizes however do not show the same consistent pattern; the poorest and poorer cattle owners have significantly more animals than the richest cattle owners.
- Use of improved inputs and farming techniques is two times more common among the wealthier households and among the poorest households; the practice of irrigation is 3.6 times more frequent in the wealthiest households than in the poorest households.
- Remoteness to socio-economic facilities and services decreases with increased levels of wealth/well-being. Distance to a primary school had an independent negative effect on primary school enrolment or completion. However this effect is weak.
- The wealthier smallholders are more likely to have received extension advice than the poorer households, in case in crop extension advise this was more than 2 times and in case of livestock advise almost 3 times. Among the receivers of extension services, government was the main provider regardless of the poverty status. The smallholders are satisfied with extension services provided, however the wealthier show slightly higher levels of satisfaction compared to the poorest smallholder households.
- Poverty has a negative impact on the gender balance in the performance of farm activities. The poorest women engage more frequently in typically male activities compared to the women from the richest households. Men from the poorest households participate less in typically female activities than the male from the richest households.

1. Introduction

Background on the agricultural survey
As part of the Poverty Monitoring Master Plan the Agricultural Sample Census was conducted in 2003. Objectives of the census were:

- To identify structural change in farm size holdings, crop and livestock production, use of agricultural inputs, change in infrastructure and change in the living conditions of the agricultural population.
- Provide benchmark data on production and productivity and on specific problems like gender, poverty, food security, service, etc.
- To establish baseline data for impact assessment of Agricultural Sector Development Programme (ASDP) for the National Strategy for Growth and Reduction of Poverty.

The census was conducted for Mainland Tanzania and Zanzibar and information was collected on smallholder households, large-scale farms and from communities sampled. The primary sampling units were the villages and from each sampled village, 15 households were selected. In total 48,345 smallholder households were sampled from 3,221 villages.

Poverty analysis
Since poverty reduction is one of the main objectives and targets of the Tanzanian government, insight in poverty/wealth distributions, characteristics as well as insight in equitable service delivery among the rural population is of great importance. This study will provide an overview of wealth/poverty relations with a selection of characteristics of agricultural smallholder households, making use of information provided through the 'poverty module', which was initially developed to link surveys without consumption module to surveys with a consumption module to enable the generation of consumption/expenditure based poverty estimates from the latter type of surveys, also called poverty mapping[1].

Poverty mapping provides insight in geographical, or socio-economic poverty/wealth distributions; this technique is not yet suitable to attach a poverty/wealth estimate to individual households that can be used for further analysis. However using regression analysis we could apply the betas from the survey with an income measure to the one without it and predict the individual household income.

Since the aim of this study is to analyse the impact of household's economic wealth on agricultural productive and non-productive characteristics, an alternative approach will be used. This approach is based on the ownership of assets and housing characteristics that are likely to correspond to the household's income level. Based on assets, housing and selected household characteristics, an asset index is constructed. Factor analysis weights are assigned to the normalized 'asset variables'[2,3] and using these weights the set of

[1] See for methodological explanation Elbers, Lanjouw and Lanjouw (2002) and IFPRI 2006.
[2] See Filmer and Prichett, 2001 for detailed methodological explanations.
[3] Using Principal Component analysis gives a similar pattern.

variables is reduced to one single variable, the asset index. Finally, households are ranked according to scores on the asset index and grouped into five equal sized groups, the wealth/poverty quintiles.

To take into account economies of scale, number of rooms and ownership of household assets, i.e. consumer durables were normalized for household size. In this way crowdedness in the household was measured and a 'per capita' asset was calculated, compensating for the positive effect on household size on asset ownership. Tests conducted using the HBS 2000/01 showed that, using a per capita asset in the construction of the asset index improved the relationship with household size as well as the correlation with per adult equivalent consumption[4]. In the agricultural survey, a strong positive relationship between household size and poverty/wealth status changed to a slight negative one, after the introduction of 'per capita' assets. The lists of household variables used as well as weights assigned are displayed in Annex 1.

Estimates obtained in the above-described way are robust. The Factor analysis and Principal component analysis resulted in identical quintile distributions. Reducing or increasing the number of household characteristics used in the variable reduction technique resulted in similar distribution of the households.

Following the background and introduction this report will focus on the following areas:

- Household and housing characteristics
- Productive assets
- Improved farming techniques
- Access to services
- Involvement of men and women in farm activities

Since the main objective is the poverty/wealth analysis, all tables will follow the same basic layout. The poverty/wealth quintiles are labelled as poorest 20%, poorer 20%, middle 20%, richer 20% and richest 20%. For each quintile the following information is included:

- The un-weighted sample size
- The mean
    - In case of continuous variables the actual weighted mean
    - In case of categorical variables: transformation of the variable into a dummy variable and presentation of the corresponding weighted proportion times 100.
- The standard error, adjusted for cluster sampling and stratification.

In the descriptive chapters the tables will only include the means and percentages. Sample sizes and standard errors are provided in corresponding tables in Appendix A.

[4] Using the HBS 2000/01 a similar asset index was constructed and tested against the per adult equivalent consumption. The correlation coefficient of per adult equivalent expenditure (in quintiles) with the asset index (again quintiles) improved from 0.36 (measured asset ownership) to 0.32 to 0.40 (per capita asset ownership). The correlation coefficient for household size with the above mentioned asset quintiles changed from 0.03 to –0.22.

The classification of household into groups ranging from poorest to richest is artificial. In general the majority of agricultural households can be classified as poor or very poor. However also within poverty it is always possible to differentiate. Household classified as richest are not necessarily rich in absolute terms, they are better off, according to the criteria used, than household classified as poorer and poorest. It is important to note that this classification does not indicate the current levels of household income and related levels of income poverty. A comparable asset index constructed using Household Budget Survey data showed a 0.4 correlation with per adult equivalent household consumption.

What can be observed is that in general sample sizes differ between quintiles. The poorer households were under-sampled whereas the wealthier were over-sampled.

Table 1 provides the factor weights assigned to the normalized variables. Negative weights reduce the household poverty/wealth score and positive weights increase the poverty wealth score.

Table 1.1 Asset variables and their weights used for the construction of the asset index

Source variable	Derived variable	Variable weight	
Number of rooms	1 person per room	0.1002	
	2 persons per room	0.0841	
	3 persons per room	0.0367	
	4 persons per room	0.0169	
	5 persons per room	0.0071	
Roof material	Iron sheets	0.2018	
	Tiles	0.0184	
	Concrete	0.0054	
	Asbestos	0.0182	
	Grass/leaves	-.0565	
	Grass and mud	-.0027	
Household assets per capita	Radio/cassette, music system	0.0898	
	Telephone (landline)	0.0486	
	Telephone (mobile)	0.0877	
	Iron	0.1254	
	Wheelbarrow	0.0727	
	Bicycle	0.0649	
	Vehicle	0.0582	
	Television	0.0777	
Main energy source for lighting	Main electricity	0.1143	
	Solar	0.0224	
	Gas (biogas)	0.0097	
	Hurricane lamp	0.2095	
	Pressure lamp	0.0369	
	Wick lamp	-.0693	
	Candles	0.0114	
	Firewood	-.0011	
Main energy source for cooking	Mains electricity	0.0040	
	Solar	-.0047	
	Gas (biogas)	-.0013	
	Bottled gas	-.0027	
	Paraffin/kerosene	0.0059	
	Charcoal	0.0300	
	Firewood	-.2100	
	Crop residues	-.0171	
	Livestock dung	-.0103	
Access to drinking Water (wet and dry season	Piped water	0.0908	0.1297
	Protected well	-.0047	0.0307
	Protected/covered spring	-.0014	0.0199
	Unprotected well	-.0881	-.0422
	Unprotected spring	-.0205	0.0173
	Surface water	-.0415	-.0021
	Covered rainwater catchment	0.0060	0.0093
	Uncovered rainwater catchment	-.0229	-.0070
	Water vendor	0.0104	0.0209
	Tanker truck	0.0061	0.0162
	Bottled water	-.0038	
Access to toilet facilities	No toilet/bush	-.0507	
	Flush toilet	0.0183	
	Pit latrine – traditional	0.0067	
	Improved pit latrine	0.0695	
Number of meals household normally has per day	1 meal	-.0544	
	2 meals	-.1930	
Number of days household consumed meat last week	0 times	-.2027	
	1 time	-.0847	
	2 times	-.0381	
	3 times	-.0126	
	4 times	0.0007	

2. Household and Housing Characteristics

Population characteristics
In this chapter information on household demographics, education, economic activity of household members will be presented, separately reporting for head of household and spouse of the household head. In addition tables will be presented by sex and different age groups; i.e. children and the elderly.

Table 2.1 displays general household demographics. The use of per capita weighted assets resulted in an almost flat distribution of household size by poverty/wealth status. The average household size in the poorest quintile is 5.2 compared to 5.1 in the richest quintile. Female-headed households show a two times higher representation among the poorest than among the richest households, 33 percent versus 16 percent. The age composition shows that children and elderly dominated within the poorest households (just over 50 percent) whereas the richest households these two groups constitute the minority, about 43 percent. The poorest households both show large shares of children as well as elderly people.

Table 2.1 General Household Demographics, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Household size	5.2	5.2	5.1	5.2	5.1
Male headed household (%)	76.9	78.8	79.7	82.5	83.8
Age composition (%)					
Below 15 years of age	39.3	39.3	37.4	38.0	36.1
Between 15 and 60 years	49.7	51.3	53.0	53.8	56.5
Aged 60 and above	10.9	9.4	9.6	8.3	7.4

Source: Authors' calculation using NBS, 2006

Heads from the poorest 20 percent of households are slightly older (46.1 years) than the heads from the richest 20 percent of households (44.4 years), as indicated in Table 2.2. This corresponds with the observation made for Table 2.1 that the elderly in the poorest household have a larger share of the household population compared to the richest households. This may partly be due to the disintegration of extended family structures; younger adult migrate and leave elderly parents behind, reducing productive power within these households.

Educational attainment shows a strong correlation with poverty/wealth levels. 48 percent of the household heads belonging to the poorest households did not have any form of education compared to 14 percent in the richest households. Mean years of education are almost double (6.1) for heads from the richest quintiles, compared to heads belonging to the poorest quintile (3.1). Over 14 percent of heads from the richest quintile had some form of secondary or higher education compared to only 1 percent in the poorest quintile.

For around 60 percent of all heads of household it was stated that they were full-time engaged in farm work. Looking at the distribution by poverty/wealth status, this percentage is quite stable from poorest to the richer quintiles (64 percent to 61 percent)

and drops for the richest quintile to 51 percent. The above-observed 10 percent differences are reflected in the percentage of household heads earning off-farm income (last line of the table). Head from the richest 20 percent of households are substantially more working in government/parastatal and in the private (ngo/mission, etc) sector.

Table 2.2 Head of household characteristics, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Age	46.1	45.4	45.3	44.8	44.4
Education					
No education (%)	47.9	41.5	35.6	26.9	14.2
At least some years of primary (%)	51.1	56.9	62.3	69.2	71.3
At least some years of secondary (%)	1.0	1.4	1.9	3.5	10.8
At least some years of post secondary (%)	0.0	0.2	0.2	0.4	3.6
Years of education	3.1	3.6	4.0	4.6	6.1
Intensity of farm employment (%)					
Full-time working on farm	63.7	61.3	60.5	61.1	51.0
Part-time working on farm	6.7	7.6	7.6	8.3	13.9
Rarely working on farm	28.0	29.4	30.0	28.9	32.2
Never working on farm	1.6	1.8	1.9	1.7	2.8
Economic activity (%)					
Crop/seaweed farming	79.7	79.4	78.6	77.5	65.0
Livestock keeping/herding	4.0	4.1	3.6	3.1	3.1
Livestock pastoralists	0.2	0.3	0.1	0.1	0.2
Fishing	1.7	1.7	1.9	1.7	1.1
Government/parastatal	0.2	0.3	0.6	1.8	9.2
Private - NGO/mission/etc.	3.1	3.6	4.4	5.2	7.9
Self employed - non farming with employees	1.2	1.0	1.4	1.9	4.1
Self employed - non farming no employees	6.3	6.1	6.1	5.6	6.2
Unpaid family worker (non farming)	0.6	0.6	0.5	0.6	0.8
Not working and available for work	0.1	0.1	0.0	0.1	0.1
Not working and unavailable for work	0.0	0.1	0.1	0.1	0.0
House maker/housewife	0.0	0.1	0.1	0.1	0.2
Student	0.0	0.0	0.1	0.0	0.0
Unable to work -too old/retired/sick/disabled	2.4	2.4	2.3	2.0	1.8
Other	0.3	0.2	0.3	0.2	0.3
Earning non-farm income (%)	60.3	61.7	62.0	62.8	70.2

Source: Authors' calculation using NBS, 2006

Table 2.3 clearly shows that smallholder household heads tend to marry downward, where spouses are on average 8.4 years younger and less educated; the overall difference in mean years of education is 0.8 years in favour of the head of household. The observed age-gap slightly decreases by increase in poverty/wealth level (from 8.7 years to 8.0 years in the poorest and richest quintiles respectively). The gap in mean years of education goes in the opposite direction, an increase from 0.7 years in the poorest quintiles to 1.0 year in the richest quintile.

Differences in percentage of spouses full-time engaged in farm work as well as differences in the percentage of spouses earning off-farm income between the

poverty/wealth groups are less pronounced compared to differences observed between the head of households from the different groups. Four out five (81 percent) spouses belonging to the poorest quintile are full-time engaged in farm work compared to three-quarters (74 percent) of the spouses from the richest quintiles. Off-farm income is generated by 32 percent of the spouses from the poorest quintile and by 35 percent of the spouses from the richest quintile.

Table 2.3 Spouse of head of household characteristics, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Age	35.6	35.2	35.4	35.4	36.0
Age difference between head and spouse	8.7	8.6	8.5	8.5	8.0
Education					
No education (%)	55.1	48.5	43.0	34.3	19.9
At least some years of primary (%)	45.7	52.2	57.7	65.8	76.2
At least some years of secondary (%)	0.2	0.3	0.3	0.8	4.0
At least some years of post secondary (%)	0.0	0.0	0.1	0.1	0.8
Years of education	2.8	3.3	3.7	4.3	5.4
Difference in years of education between head and spouse	0.7	0.7	0.7	0.8	1.0
Intensity of farm employment (%)					
Full-time working on farm	80.8	79.8	79.3	80.8	73.7
Part-time working on farm	2.8	3.0	2.8	3.1	6.1
Rarely working on farm	15.8	16.5	17.2	15.5	19.3
Never working on farm	1.1	1.0	1.0	0.8	1.5
Economic activity (%)					
Crop/seaweed farming	91.6	91.5	91.7	93.0	83.7
Livestock keeping/herding	2.1	1.9	1.7	1.0	2.0
Livestock pastoralists	0.2	0.2	0.0	0.1	0.1
Fishing	0.1	0.2	0.1	0.1	0.1
Government/parastatal	0.0	0.1	0.1	0.3	2.8
Private - NGO/mission/etc.	0.6	0.7	1.1	1.0	1.7
Self employed - non farming with employees	0.2	0.3	0.4	0.3	1.3
Self employed - non farming no employees	1.3	1.3	1.1	1.2	1.6
Unpaid family worker (non farming)	0.3	0.3	0.3	0.3	0.5
Not working and available for work	0.1	0.1	0.1	0.1	0.1
Not working and unavailable for work	0.0	0.1	0.1	0.0	0.0
House maker/housewife	2.1	2.1	2.1	1.9	5.3
Student	0.2	0.3	0.3	0.2	0.4
Unable to work -too old/retired/sick/disabled	1.4	1.2	1.1	0.8	0.9
Other	0.1	0.1	0.2	0.0	0.1
Earning non-farm income (%)	31.5	31.0	32.3	32.1	35.3

Source: Authors' calculation using NBS, 2006

The following tables describe the male and female population aged 15 to 59, the children population below the age of 15 and the male and female elderly population aged 60 years and above.

Differences in characteristics of the male household members show similar patterns as already described for the head of household and spouse. Males belonging to the poorest

households are 4 times more likely not to be educated (31 percent) compared males from the richest household (7 percent). The percentage males belonging to the richer household (4th quintile) without education is almost double (14 percent) of that of the earlier mentioned richest households (see Table 2.4).

Full-time engagement in farm work decreases steadily from 62 percent among men from the poorest households to 57 percent for men from richer household, after which this percentage steeply drops to 55 percent in the male population in the richest households. At the same time, the proportion of males earning off-farm income increases from 46 percent in the poorest households to 54 percent in the richest households.

Table 2.4 Characteristics of the Male Population Aged 15 to 59, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Education					
No education (%)	30.6	25.2	20.0	13.9	7.0
At least some years of primary (%)	68.3	72.9	77.4	81.8	77.5
At least some years of secondary (%)	1.1	1.8	2.3	3.8	12.5
At least some years of post secondary (%)	0.1	0.2	0.3	0.5	3.1
Years of education	4.2	4.6	5.1	5.6	6.7
Intensity of farm employment (%)					
Full-time working on farm	62.1	59.8	58.4	57.2	44.4
Part-time working on farm	6.1	7.4	7.4	7.7	12.3
Rarely working on farm	27.5	29.1	29.4	29.8	34.6
Never working on farm	4.3	3.7	4.8	5.2	8.7
Economic activity (%)					
Crop/seaweed farming	73.1	72.1	71.6	69.3	55.2
Livestock keeping/herding	4.5	4.8	3.9	3.5	3.2
Livestock pastoralists	0.3	0.4	0.2	0.1	0.2
Fishing	2.1	2.0	2.1	1.9	1.1
Government/parastatal	0.2	0.3	0.6	1.4	6.6
Private - NGO/mission/etc.	2.7	3.0	3.7	4.7	7.6
Self employed - non farming with employees	1.1	1.2	1.6	2.0	3.9
Self employed - non farming no employees	4.6	5.0	4.7	4.5	5.3
Unpaid family worker (non farming)	0.8	0.7	0.6	0.7	1.3
Not working and available for work	0.3	0.3	0.3	0.4	0.8
Not working and unavailable for work	0.2	0.2	0.2	0.2	0.1
House maker/housewife	0.0	0.0	0.1	0.1	0.1
Student	8.4	8.8	9.3	10.0	13.2
Unable to work -too old/retired/sick/disabled	1.4	0.9	0.9	0.9	1.0
Other	0.3	0.3	0.4	0.2	0.5
Earning non-farm income (%)	46.0	47.2	48.0	48.5	54.0

Source: Authors' calculation using NBS, 2006

Educational levels of females aged 15 to 59 in all poverty/wealth groups are below the educational levels of men belonging to the same poverty/wealth groups. Differences in the poorest group are however larger than in the richest group, for example the difference in percentage of at least some years of primary education in the poorest group is around 17 percentage points compared to only 2 percentage points in the richest quintile.

As Table 2.5 shows, 75 percent of the women from the poorest households are full-time engaged in farm employment; this remains more or less the same up to the richer group (73 percent) and drop to 63 percent for women belonging to the richest smallholder households. The difference in full-time farm employment with male counterparts is slightly higher in the richest quintile (18 percentage points) compared to the poorest quintile (13 percentage points). The poorest women show about the same levels of off-farm income earning (31 percent) compared to women from the richest quintile (34 percent). The male-female gap is again largest in the richest quintile (20 percent in favour of men compared to 15 percent).

Table 2.5 Characteristics of the Female Population Aged 15 to 59

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Education					
No education (%)	48.2	41.7	36.5	27.6	15.0
At least some years of primary (%)	51.3	57.6	62.5	70.3	75.6
At least some years of secondary (%)	0.5	0.7	0.9	2.0	8.3
At least some years of post secondary (%)	0.0	0.0	0.1	0.1	1.1
Years of education	3.2	3.7	4.0	4.7	5.9
Intensity of farm employment (%)					
Full-time working on farm	75.2	74.3	73.4	72.8	62.6
Part-time working on farm	3.7	3.9	3.7	4.0	6.5
Rarely working on farm	18.3	18.8	20.1	19.7	24.5
Never working on farm	2.8	3.0	2.8	3.5	6.4
Economic activity (%)					
Crop/seaweed farming	85.3	85.0	85.3	83.9	71.7
Livestock keeping/herding	2.3	2.2	1.8	1.2	1.8
Livestock pastoralists	0.2	0.2	0.1	0.1	0.1
Fishing	0.2	0.2	0.1	0.1	0.1
Government/parastatal	0.1	0.1	0.1	0.5	2.8
Private - NGO/mission/etc.	0.9	1.3	1.6	1.9	2.9
Self employed - non farming with employees	0.3	0.4	0.6	0.6	1.6
Self employed - non farming no employees	2.1	1.7	1.7	1.8	2.1
Unpaid family worker (non farming)	0.5	0.5	0.6	0.4	1.1
Not working and available for work	0.2	0.3	0.3	0.3	0.7
Not working and unavailable for work	0.1	0.1	0.1	0.1	0.1
House maker/housewife	1.4	1.4	1.4	1.3	3.5
Student	4.9	5.2	5.3	6.6	10.0
Unable to work -too old/retired/sick/disabled	1.2	1.3	1.1	1.0	1.1
Other	0.2	0.1	0.2	0.3	0.4
Earning non-farm income (%)	30.9	30.2	31.5	30.5	33.8

Source: Authors' calculation using NBS, 2006

Given the assumption that there are no significant differences in age distribution of children belonging to households in the different poverty/wealth quintiles, Table 2.6 clearly shows the differences in educational attainment between the poorest (46 percent with at least some years of primary education) and the richest quintiles (66 percent of children with at least some years of primary education). Figure 2.1 confirms these findings, showing the potential years of primary education missed at different ages for the

five poverty/wealth quintiles. It should be mentioned that during the period of the survey, the Primary Education Development Program (PEDP) was in its first and second year, so the impact of this intervention was still limited.

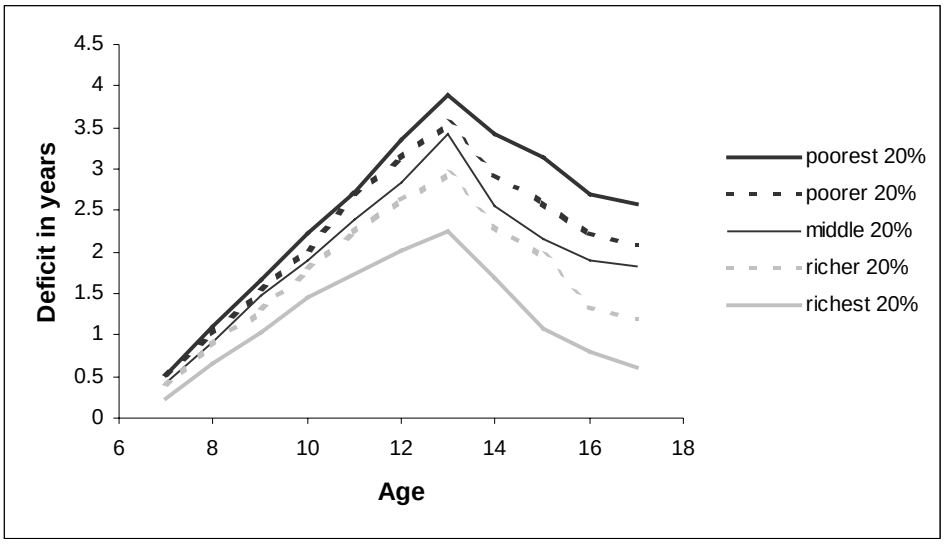
Though percentages are low, full-time farm work is more common for children from the poorest households (8 percent) compared to children from the richest household (3 percent). The percentage of children earning off-farm income is almost identical in all poverty/wealth groups (2 percent).

Table 2.6 Characteristics of the Child Population Below the Age of 15, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Education					
No education (%)	54.1	50.2	46.0	41.9	34.4
At least some years of primary (%)	46.0	49.8	54.0	58.1	65.6
Years of education	1.1	1.2	1.3	1.5	1.9
Intensity of farm employment (%)					
Full-time working on farm	8.2	5.9	5.1	4.8	2.9
Part-time working on farm	5.7	6.2	6.6	6.1	6.6
Rarely working on farm	38.5	38.4	39.1	41.4	41.2
Never working on farm	47.5	49.5	49.1	47.7	49.3
Economic activity (%)					
Crop/seaweed farming	8.9	6.4	6.0	5.0	3.0
Livestock keeping/herding	2.0	1.7	1.0	0.9	0.3
Livestock pastoralists	0.2	0.1	0.1	0.1	0.1
Fishing	0.1	0.0	0.0	0.0	0.0
Government/parastatal	0.0	0.0	0.0	0.0	0.0
Private - NGO/mission/etc.	0.1	0.0	0.0	0.1	0.1
Self employed - non farming with employees	0.0	0.0	0.0	0.0	0.0
Self employed - non farming no employees	0.0	0.0	0.1	0.1	0.1
Unpaid family worker (non farming)	1.1	0.9	0.7	0.7	0.6
Not working and available for work	0.2	0.1	0.2	0.2	0.1
Not working and unavailable for work	0.2	0.2	0.1	0.1	0.1
House maker/housewife	0.2	0.3	0.3	0.3	0.6
Student	63.9	66.9	71.8	75.1	82.5
Unable to work -too old/retired/sick/disabled	20.6	20.2	17.4	14.9	10.9
Other	2.6	3.0	2.3	2.4	1.7
Earning non-farm income (%)	2.2	2.3	2.3	3.0	2.3

Source: Authors' calculation using NBS, 2006

Figure 2.1 Potential Years of Primary Education Missed[5], 2002/03



Source: Authors' calculation using NBS, 2006

The elderly population, aged 60 years and older are characterized by low levels of education; the proportion of elderly male without any education in the poorest quintile is more than twice the proportion observed for the younger adult males. In the richest quintile the difference goes up to almost 5 times. Table 2.7 shows that also in the elderly population levels of education increase with increasing wealth/poverty levels. Except for education, employment characteristics hardly seem to differ by poverty/wealth status. The percentage full-time engaged in farm work is around 60 percent for all quintiles. The percentage of the elderly that are considered unable to work, most likely due to old age only is only slightly higher among the poorest (14 percent) compared to the richest group (12 percent).

[5] The number of potential years of primary education missed shows an increased accumulation up to the age of 13. This is a combined effect on non-enrolment, late enrolment, drop-out and repetition. The high enrolment of over-aged children in primary education causes the decline; the number of potential years i.e. 7 reached its maximum, which means that actual and successful enrolment of children 14 and above is responsible of decline in number of years of primary education missed.

Table 2.7 Characteristics of the Elderly Male Population Aged 60 and above, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Education					
No education (%)	69.6	63.4	59.9	50.1	33.5
At least some years of primary (%)	27.8	32.9	36.6	42.3	49.3
At least some years of secondary (%)	2.6	3.4	3.3	6.8	13.5
At least some years of post secondary (%)	0.0	0.4	0.3	0.8	3.7
Years of education	1.3	1.6	1.8	2.5	3.8
Intensity of farm employment (%)					
Full-time working on farm	58.5	57.9	58.3	60.4	60.4
Part-time working on farm	5.5	5.3	4.7	5.1	6.9
Rarely working on farm	25.1	26.5	26.5	25.8	23.0
Never working on farm	10.9	10.3	10.6	8.8	9.7
Economic activity (%)					
Crop/seaweed farming	72.0	73.5	72.8	74.5	71.3
Livestock keeping/herding	4.8	5.0	5.0	4.3	4.2
Livestock pastoralists	0.4	0.3	0.0	0.3	0.2
Fishing	0.9	0.9	0.8	1.0	0.9
Government/parastatal	0.1	0.3	0.2	0.6	1.1
Private - NGO/mission/etc.	1.3	1.5	2.5	3.2	3.2
Self employed – non farming with employees	0.7	0.8	0.5	0.7	2.6
Self employed – non farming no employees	4.6	3.8	3.8	3.1	3.7
Unpaid family worker (non farming)	0.9	0.3	0.4	0.3	0.6
Not working and available for work	0.0	0.1	0.0	0.1	0.0
Not working and unavailable for work	0.1	0.0	0.0	0.0	0.0
House maker/housewife	0.0	0.2	0.2	0.0	0.0
Student	0.0	0.1	0.2	0.1	0.0
Unable to work –too old/retired/sick/disabled	14.2	13.0	13.4	11.5	11.9
Other	0.1	0.1	0.3	0.3	0.3
Earning non-farm income (%)	48.0	47.4	45.3	46.6	45.1

Source: Authors' calculation using NBS, 2006

Differences in levels of education between the elderly female and the younger adults are of the same magnitude as observed among the males. However, difference over the wealth/poverty quintiles is different; the percentage of elderly female with no education is extremely high in the poorest households (93 percent) and only gradually declines up to the 4th quintile, the poorer households with 87 percent of the elderly women not educated. The difference between these four groups and the richest group is around 20 percentage points; in richest group the percentage of women with no education dropped to 69 percent, which of course is still very high (see Table 2.8).

Looking at full-time farm employment, it is clear that differences between the poverty/wealth groups are minor. Also differences between elderly males and females are small. What can be observed is that the poorest elderly women more frequently earn off-farm income (34 percent) compared to the elderly women belonging to the richest households (24 percent). Contrary to observations in the elderly males, poorest females

are slightly less likely to be classified as unable to work, due to old age than women from the richest households (31 percent). However there is no clear trend visible.

Table 2.8 Characteristics of the Elderly Female Population Aged 60 and above, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Education					
No education (%)	93.1	92.6	89.6	87.1	69.2
At least some years of primary (%)	6.7	7.0	10.0	12.3	28.4
At least some years of secondary (%)	0.1	0.3	0.4	0.5	2.2
At least some years of post secondary (%)	0.1	0.0	0.0	0.1	0.2
Years of education	0.3	0.3	0.4	0.6	1.5
Intensity of farm employment (%)					
Full-time working on farm	57.4	53.1	53.2	56.9	56.5
Part-time working on farm	2.9	2.4	3.2	2.8	2.7
Rarely working on farm	22.4	23.9	23.3	21.7	17.1
Never working on farm	17.3	20.6	20.3	18.6	23.7
Economic activity (%)					
Crop/seaweed farming	70.0	67.7	67.8	69.4	63.0
Livestock keeping/herding	1.5	1.0	1.2	0.9	1.3
Livestock pastoralists	0.2	0.1	0.0	0.1	0.1
Fishing	0.4	0.0	0.0	0.1	0.1
Government/parastatal	0.0	0.1	0.0	0.0	0.2
Private - NGO/mission/etc.	0.9	1.2	1.1	0.9	0.5
Self employed - non farming with employees	0.1	0.1	0.4	0.6	0.3
Self employed - non farming no employees	1.4	1.8	1.3	1.6	0.6
Unpaid family worker (non farming)	0.3	0.2	0.3	0.3	0.3
Not working and available for work	0.3	0.2	0.1	0.1	0.1
Not working and unavailable for work	0.0	0.1	0.1	0.1	0.0
House maker/housewife	1.0	1.0	0.8	1.4	2.6
Student	0.1	0.0	0.1	0.0	0.1
Unable to work -too old/retired/sick/disabled	23.5	26.0	26.6	24.2	30.6
Other	0.2	0.3	0.2	0.6	0.3
Earning non-farm income (%)	33.5	32.2	32.4	28.9	23.7

Source: Authors' calculation using NBS, 2006

Looking once more at the poverty/wealth differences for the different age categories discussed in the previous tables it is evident that over the generations there are large differences in percentages of the population without education between the poorest and the richest 20 percent of households. However, moving from older ages to the younger ages it seems the gap widened from elderly to younger adults and is narrowing again from younger adults moving to children. When comparing the different populations from the poorest and richest households, the relative risks[6] for the elderly men and women are 2.1 and 1.3 respectively, for the younger adults (15 to 59) the relative risks go up to 4.4 and 3.2 and for children below the age of 15 the relative risk is 1.6, at about the same level as in the elderly.

[6] Relative risk is calculated as the percentage without education in the poorest divided by the percentage without education in the richest 20% of households.

Household cash income

The three main sources of smallholders' household cash income are obtained from the sale of food and cash crops, and income generated through other casual cash earning activities, with 38, 17 and 15 percent respectively.

As Table 2.9 shows, the importance of food crop sales does not consistently differ by wealth/poverty status. Though the percentages are low, the poorest households seem to depend more frequently on livestock as source of income than the richest households (6 and 4 percent respectively). Dependency on cash crop sales is more frequently mentioned for the richest households (18 percent) than for the poorest households (14 percent), however differences are small with no definite pattern by poverty/wealth status. Household dependency on wages/salaries and 'other casual cash earnings' show opposite patterns; the importance of wages/salaries increases from less than 1 to 13 percent as the poverty/wealth status of the household increases. Income from 'other casual cash earnings' on the other hand decreases in importance from almost 20 to 9 percent with increasing poverty/wealth levels. Finally, cash remittances are slightly more important to the poorest households than to the richest households, with 5 and 3 percent respectively, but overall play a minor role in terms of source of household income.

Table 2.9 Main source of household cash income, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Food crop (%)	38.2	36.9	37.6	40.0	36.3
Livestock (%)	6.0	6.7	5.5	4.5	3.6
Livestock products (%)	0.7	0.8	0.8	1.1	1.8
Cash crops (%)	13.5	16.2	18.5	20.2	17.7
Forest products (%)	5.0	4.3	3.4	2.8	1.7
Business income (%)	7.6	8.5	8.8	9.5	12.3
Wages/salaries (%)	0.7	0.9	1.3	2.8	12.8
Other casual cash earnings (%)	19.8	18.0	16.6	12.8	8.7
Cash remittances (%)	4.9	4.2	3.7	2.9	2.6
Fishing (%)	2.4	2.6	2.8	2.2	1.4
Other (%)	1.2	0.8	0.9	1.0	1.0

Source: Authors' calculation using NBS, 2006

Water and sanitation

Being the most responsible for obtaining drinking water, access to water is very important to women and also children. For the household as a whole cleanness and safety are important aspects of drinking water. Relatively safe and clean sources of drinking water are considered to be piped water and different types of protected water sources, like wells and springs.

In the agricultural survey information was collected on distance to the main source of drinking water, time needed to go and come back from the water source as well as type of water source used. This information was obtained for both wet and dry seasons.

The sources of drinking water used by the smallholder households show higher accessibility among the better-off households compared to the worse-off households. During the wet season the poorest households have on average to bridge distance of 1.0 km. to reach their main source of drinking water, which takes about 42 minutes to go, wait and come back. As Table 2.10 shows, at the other end of the poverty/wealth spectrum distance and time are reduced to an average of 700 meters that takes in total 34 minutes.

Table 2.10 Access to Drinking Water during Wet Season, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Distance (in km.)	1.0	1.0	1.0	0.9	0.7
Time to and from (in min.)	42	42	41	40	34
Time to and from:					
Within 15 min. from (%)	22.2	24.2	26.1	28.4	38.1
Within 15 - 30 min. from (%)	38.2	38.6	37.9	36.8	32.3
Within 30 - 60 min. from (%)	28.8	26.1	25.9	24.8	22.5
Within 60 - 90 min. from (%)	4.1	4.1	3.8	3.8	2.4
Within 90 - 120 min. from (%)	3.7	3.8	3.5	3.2	2.2
More than 120 min. from (%)	3.0	3.2	2.8	2.9	2.4
Type of water source in wet season (%)					
Piped water	0.3	7.8	20.9	31.7	49.0
Protected well	8.4	14.9	15.5	14.3	12.6
Protected spring	2.1	3.7	4.1	4.4	4.3
Unprotected well	53.0	32.1	22.6	17.6	10.3
Unprotected spring	12.0	16.3	14.9	14.5	11.0
Surface water	18.0	18.0	15.5	12.0	7.8
Covered rain catchment	0.2	0.5	0.7	1.0	1.2
Uncovered rain catchment	5.7	6.0	4.5	3.1	2.5
Water vendor	0.0	0.0	0.1	0.2	0.2
Water truck	0.0	0.1	0.1	0.2	0.2
Bottled water	0.0	0.0	0.0	0.0	0.0
Other source	0.4	0.6	1.0	1.1	1.0

Source: Authors' calculation using NBS, 2006

During the dry season for the poorest households the average distance to the main source of drinking water increases with around 600 meters, due to this and most likely due to more congestion at the water source, an additional 24 minutes are needed to go and come back. At the same time the increase in distance to and time needed to and from source of drinking water for the richest 20 percent of households was 300 meters and 13 minutes (see also Table 2.11). Whereas the percentage of households residing more than 2 hours away from the main source of drinking water (go and come back) among the poorest and richest quintiles (3.0 versus 2.4 percent), during the dry season the respective percentages increase to 11 and 6 percent, showing a widening gap between the poorest and richest households. Figure 2.2 displays the changes in time needed to go and come back to fetch

drinking water[7]. During the dry season the slope of the line becomes much steeper also indicating that the poorest are more heavily affected during the dry season than the better off.

Turning to poverty/wealth status differences of use of different types of sources of drinking water one has to bear in mind that this variable was used in the construction of the poverty/wealth index, which means that observed differences are also induced by the variable itself making the relationship between source of drinking water and poverty/wealth status to some extend dependent (see also Table 1.1).

Table 2.11 Access to Drinking Water during Dry Season, 2002/03

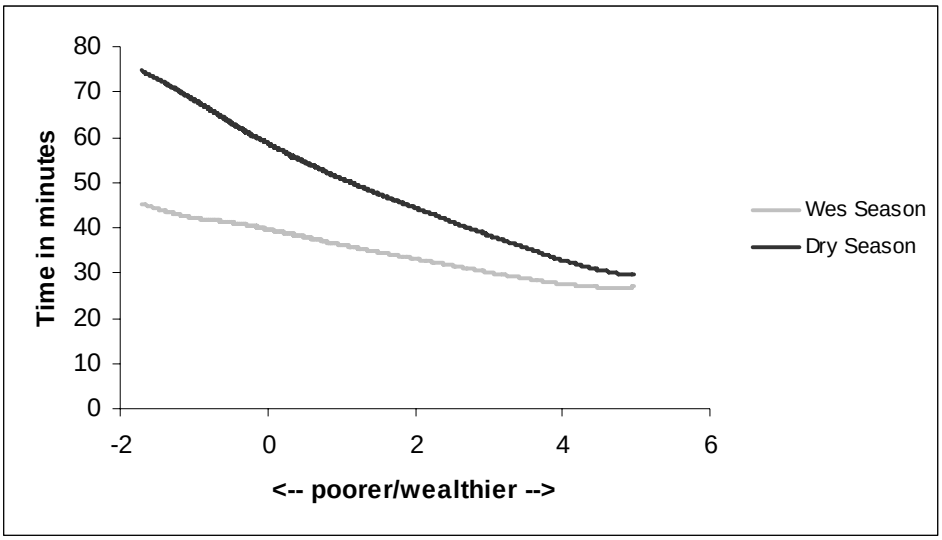
	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Distance to (in km.)	1.6	1.5	1.4	1.3	1.0
Time to (in min.)	66.2	63.1	59.2	55.5	47.0
Time to and from:					
Within 15 min. (%)	16.1	18.1	20.1	22.4	31.4
Within 15 - 30 min. (%)	30.0	30.9	32.2	32.1	29.9
Within 30 - 60 min. (%)	28.7	27.1	26.7	26.5	24.5
Within 60 - 90 min. (%)	6.1	6.5	5.5	5.5	3.7
Within 90 - 120 min. (%)	8.0	7.6	6.9	5.8	4.4
More than 120 min. (%)	11.0	9.8	8.6	7.7	6.1
Type of water source in dry season (%)					
Piped water	0.9	9.6	22.4	32.4	48.5
Protected well	9.0	15.4	16.1	14.5	13.1
Protected spring	2.1	3.8	4.3	4.7	4.9
Unprotected well	53.6	32.4	22.3	17.5	10.2
Unprotected spring	12.5	16.8	15.6	15.7	12.4
Surface water	19.4	19.6	17.2	13.2	9.2
Covered rain catchment	0.1	0.3	0.4	0.4	0.5
Uncovered rain catchment	2.0	1.8	1.3	0.9	0.4
Water vendor	0.0	0.0	0.2	0.2	0.4
Water truck	0.0	0.0	0.1	0.2	0.4
Bottled water	0.0	0.0	0.0	0.0	0.0
Other source	0.3	0.3	0.3	0.3	0.1

Source: Authors' calculation using NBS, 2006

Striking is the lack of access by the poorest to a piped water source, which during the wet season was less than 1 percent rapidly increasing with increase in wealth/poverty status to almost 50 percent for households belonging to the richest quintile. Most important source of drinking water for the poorest and poorer poverty/wealth groups registered during the dry season is the unprotected well (54 and 32 percent). For the other, wealthier groups piped water is the main source of drinking water during the dry season (22, 32 and 49 percent for the middle, richer and richest quintiles respectively).

[7] The figure displays the smoothed unweigthed relationship between the household poverty/wealth index (continuous variable) and reported time needed (transferred to minutes) to go to and come back from main source of drinking water.

Figure 2.2 Time Needed to Fetch Drinking Water during Dry and Wet season, 2002/03



Source: Authors' calculation using NBS, 2006

Table 2.12 displays the use/ownership of toilet types by poverty /wealth status. The main toilet type for all poverty/wealth groups is the traditional pit latrine. A substantial proportion of households from the poorest quintile do not have access to any type of toilet facility (19 percent) compared to only 1 percent in households ranked among the richest.

Table 2.12. Use of toilet facilities, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
No toilet facilities/bush (%)	19.4	9.5	5.4	3.0	1.1
Flush toilet (%)	1.9	2.7	2.6	2.3	2.4
Pit latrine (traditional) (%)	78.6	87.5	91.4	93.8	90.1
Ventilated pit latrine (VIP) (%)	0.0	0.2	0.4	0.8	6.3

Source: Authors' calculation using NBS, 2006

Roofing

Metal sheets, grass, leaves and mud are the main materials used for roofing. As Table 2.13 shows, grass and leaves dominate roofs in the poorest, poorer and middle quintiles, with 80, 64 and 47 percent respectively, whereas metal sheet is dominant material used for roof construction on top of the dwellings of the richer and richest 20 percent of household (56 and 84 percent).

Table 2.13. Type of roofing materials, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Metal sheets (%)	1.1	12.1	32.4	55.8	84.2
Tiles (%)	0.2	0.9	0.9	1.0	0.9
Concrete (%)	0.1	0.4	0.3	0.3	0.1
Asbestos sheets (%)	0.0	0.3	0.3	0.7	0.7
Grass/Leaves (%)	80.0	64.4	46.7	32.2	10.8
Mud (%)	18.3	21.7	19.2	9.9	3.1
Others (%)	0.4	0.3	0.2	0.1	0.1

Source: Authors' calculation using NBS, 2006

Household asset ownership

Table 2.14 shows that the major part of assets included in the Agricultural Census fail to discriminate strongly between the different quintiles. Ownership of assets like telephones, motor vehicles and television sets is more related to the upper-class urban population,. Only radios and bicycles are owned by a substantial proportion of households in each poverty/wealth group. As to be expected, household assets being used in the construction of the poverty/wealth asset index, the proportion of households owning a specific asset by definition increases as the household poverty/wealth status increases.

Table 2.14. Ownership of Household Assets, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Radio (%)	27.9	41.6	51.9	66.4	85.0
Landline telephone (%)	0.0	0.0	0.1	0.3	1.6
Mobile telephone (%)	0.1	0.2	0.4	1.1	8.1
Iron (%)	2.4	5.7	10.7	22.2	55.4
Wheel barrow (%)	0.7	2.2	3.0	5.4	17.7
Bicycle (%)	26.2	36.0	41.2	50.1	61.1
Vehicle (%)	0.1	0.2	0.5	0.9	4.1
Television (%)	0.0	0.1	0.3	0.6	4.4

Source: Authors' calculation using NBS, 2006

Household crowdedness

On average within smallholder households 2.3 persons have to share one room. As Table 2.15 shows, this is 0.5 persons per room higher in the poorest households (2.8) and 0.5 persons per room lower in the richest households (1.8). In almost 16 percent of the poorest households there is no need to share rooms (1 person per room), which is almost double (31 percent) in the richest 20 percent of households.

Table 2.15. Number of persons per room, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Average number of persons per room	2.8	2.5	2.3	2.1	1.8
Number of persons per room (%)					
One	15.8	16.9	22.2	23.8	31.1
Two	30.6	37.2	38.6	40.2	43.2
Three	26.0	24.4	21.5	21.2	17.6
Four	13.2	11.2	9.6	8.7	5.4
Five	5.8	4.6	4.0	3.1	1.6
Six or more	8.6	5.6	4.0	3.0	1.1

Source: Authors' calculation using NBS, 2006

Household feeding practices and food security

Since the number of daily meals and the frequency of meat consumption are included in the construction of the poverty/wealth index, the poverty/wealth correlations are to be expected. The average number of daily meals is just 2 in the poorest households and just under 3 in the richest households. The population from the richest smallholder households are 7 times more likely to take 3 meals per day compared to the population belonging to the poorest smallholder households (see Table 2.16).

As Table 2.16 shows, in the richest 20 percent of households meat consumption is 4.5 more often than in the poorest households. But also in the wealthiest household meat is not consumed daily. Only 22 percent of the wealthiest households eat 3 or more times meat, and only 8 percent do so 4 times or more.

Table 2.16. Number of daily meals and meat consumption, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Number of meals per day	2.0	2.3	2.3	2.5	2.7
1 meal per day (%)	5.5	4.2	3.7	2.6	1.5
2 meals per day (%)	84.8	64.1	58.2	47.3	26.9
Three or more meals per day (%)	9.7	31.7	38.2	50.1	71.6
Weekly meat consumption	0.4	0.8	1.1	1.3	1.8
less than 1 time per week (%)	71.7	47.3	35.2	26.0	10.7
1 time per week (%)	19.5	31.4	36.1	38.6	35.6
2 times per week (%)	6.6	15.3	19.1	23.1	31.8
3 times per week (%)	1.6	4.3	6.5	8.2	14.0
4 times per week (%)	0.3	1.0	1.7	2.3	4.8
5 times or more per week (%)	0.3	0.7	1.4	1.7	3.1

Source: Authors' calculation using NBS, 2006

Food security, as Table 2.17 shows is more of an issue for the poorest and poorer households than for the better-off households. About 64 percent of the households belonging to the poorest quintile seldom or never face any form of food insecurity, compared to almost 90 percent of the households belonging to the highest quintile. At the other end, around 28 percent of the poorest households are often or always confronted with food insecurity compared to only 6 percent in the highest quintile. Since food

insecurity is very much driven by incidences of draught, there is most likely a location factor overlaying the impact of poverty. In a multi-variate analysis on the prevalence of combined 'often or always' food insecure, the regions listed in Table 2.18 showed an increased risk of food insecurity after controlling for household poverty levels. The highest access risks can be observed in Arusha, Singida and Dodoma, with odds-ratios[8] of 1.80, 1.52 and 1.49 respectively.

Table 2.17 Household Food Insecurity, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Never	32.0	36.7	41.1	48.1	62.6
Seldom	31.5	33.5	33.8	33.4	26.1
Sometimes	8.0	7.7	7.8	6.5	5.1
Often	17.6	14.0	10.0	7.1	3.7
Always	10.9	8.1	7.3	4.9	2.5

Source: Authors' calculation using NBS, 2006

Table 2.18 Region with increased risk of household food insecurity after control for Household Poverty Levels

	Odds-ratio
Dodoma	1.49
Arusha	1.80
Morogoro	1.03
Pwani	1.38
Dar es Salaam	1.21
Lindi	1.15
Singida	1.52
Shinyanga	1.24
Manyara	1.08

Source: Authors' calculation using NBS, 2006

[8] Odds-ratio gives the ratio of the probability of food insecurity in a specific region divided the probability of not facing food insecurity in the specific region and probability of food insecurity in all divided the probability of not facing food insecurity in all other region.

3 Productive Assets

As shown in previous sections and as expected, smallholder households heavily depend on agricultural production. The following sections will focus on the productive assets at their disposal, starting with the main productive asset - land.

Agricultural land
All agricultural land at disposal of smallholder households is not necessarily owned by these households. As Table 3.1 shows there are many different ways land may have been made available. Total land available to smallholder households increases with increasing poverty/wealth status. On average the poor own 1.3 acres less compared to the wealthiest households, a differences that gradually decreases as household wealth increases.

There are no major differences between the wealth/poverty quintiles when it comes to type of ownership; between 60 and 70 percent of the land area is owned under customary law. Customary law seems to be slightly less common among the richest households that own 62% of the acreage under customary law, which is below the level of customary law ownership in the other four poverty/wealth groups (67 to 70 percent). Buying land from others is the second most important way for acquiring agricultural land, with little difference in relative importance for the different quintiles.

Table 3.1. Access to Agricultural land, by type of ownership, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Total land in acres	5.3	5.8	6.1	6.6	6.7
Leased/certified ownership	0.3	0.3	0.3	0.4	0.4
Owned under customary law	3.7	4.1	4.3	4.4	4.2
Bought from others	0.8	0.8	0.9	1.1	1.3
Rented from others	0.2	0.2	0.2	0.3	0.4
Borrowed from others	0.2	0.2	0.2	0.2	0.2
Share-cropped from others	0.0	0.0	0.0	0.0	0.1
Under other form of tenure	0.2	0.2	0.2	0.2	0.2

Source: Authors' calculation using NBS, 2006

Table 3.2 shows that not all land owned or entitled to through lease, borrowing or other forms of land ownership/tenure were at the households' disposal during the year of the survey. Between roughly 40 and 30 percent of the land was not available to the households. This was slightly higher for the poorest (41 percent) and lowest for the wealthiest quintile (32 percent). The amount of land available was perceived to be sufficient in just of 50 percent of the households, with no real differences between the poverty/wealth quintiles. The increase in rural population with a no increase in land availability over the past decade has resulted in an increased population pressure that is felt by all segments of the smallholder community.

Customary land rights for women are not poverty/wealth dependent, variations are probably more geographically and culturally determined than socio-economically. Regions showing the highest percentages in female customary land rights are almost all located in the coastal areas, with Mtwara showing the highest percentage of female

customary land rights (30 percent). Region located in the Northwest show the lowest percentages, the lowest observed in Shinyanga (10 percent).

Table 3.2. Availability of Agricultural Land, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
All land available during 2002/03 (%)	59.4	61.5	62.0	64.0	68.4
Was land sufficient (%)	53.9	53.6	53.2	54.4	52.6
Female customary land rights (%)	19.3	19.2	20.3	19.1	17.8

Source: Authors' calculation using NBS, 2006

Equipment

Level of mechanization in smallholder agriculture is still extremely low. Less than 3 percent of the smallholder households were owning/using a tractor or tractor plough. Human power and to a lesser extent animal power are mainly used.

Except for the hand hoe that is owned by close to 100 percent of the smallholder households, ownership/rent of other agricultural equipment shows differences by poverty/wealth status of the households. Least pronounced are differences in ownership/rent of oxen and ox plough, ranging from 19 and 18 percent among the poorest households to 24 and 24 percent in the richest households respectively. More capital-intensive investments like tractors are owned/rented by almost 9 percent of the richest households and by less than 1 percent in the poorest quintiles. Details on frequency of ownership/rent as well as the differences by poverty/wealth status are displayed in Table 3.3

Table 3.3. Ownership or Rent of Agricultural Equipment, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Hand hoe (%)	98.2	98.6	98.9	99.2	98.9
Hand powered sprayer (%)	5.8	9.6	11.1	16.1	28.7
Oxen (%)	19.1	24.8	25.1	25.8	24.2
Ox plough (%)	18.4	23.9	24.3	24.8	23.5
Ox seed planter (%)	0.1	0.2	0.3	0.3	0.3
Ox cart (%)	2.5	4.5	5.0	5.8	6.3
Tractor (%)	0.6	0.9	1.1	2.4	8.7
Tractor plough (%)	0.5	0.7	1.0	2.1	7.5
Tractor harrow (%)	0.0	0.0	0.1	0.3	1.1
Sheller/threshers (%)	0.1	0.3	0.8	1.5	4.7

Source: Authors' calculation using NBS, 2006

Investments in agricultural equipment are generally made through income directly generated from farming. Table 3.4 provides an overview of the financing modalities for investing in productive equipment/animals by poverty/wealth status. Of all equipment bought/rented, on average 72 percent was financed through the sale of farm products and an additional 21 percent was financed through off-farm income. Formal and informal credit hardly plays a role when it comes to smallholder investment in productive capital.

Use of direct farm income is the dominant financing strategy in all groups, with little and no systematic differences between the groups. The wealthiest quintile uses slightly more off-farm income as a source of financing agricultural equipment (26 percent), compared to just below 20 percent for the other four wealth/poverty groups. Reliance on remittances is low, and shows a gradual decline with increase in wealth, from 5 percent in the poorest quintile to 2 percent in richest quintile. For the poorest and poorer households the importance of remittances increases slightly, but not significantly.

As mentioned above, bank loans and credit play an insignificant role in the finance of capital investments. Even after excluding investments in hand hoe and hand powered sprayer, the proportion of investment financed by loans or credit remains below 0.5 percent.

Table 3.4 Financing of Agricultural Equipment, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Sales of farm products (%)	70.6	72.1	73.0	74.8	68.5
Other income generating activities (%)	19.8	19.1	19.5	18.9	25.6
Remittances (%)	4.9	3.8	3.3	2.9	2.1
Bank loan (%)	0.2	0.2	0.3	0.2	0.3
Credit (%)	0.1	0.1	0.2	0.1	0.3
Others (%)	4.4	4.6	3.7	3.1	3.3

Source: Authors' calculation using NBS, 2006

Ownership of livestock

Just over a quarter of all smallholder households owns cattle, while for goats this is slightly higher, 29 percent. Keeping sheep (10 percent) and pigs (7 percent) is much less popular. Ownership of livestock is very much regionally or climatically determined, with low ownership rates for all animals (included in Table 3.5) in Pwani, Lindi, Mtwara and Morogoro. High rates of ownership, in most of the cases excluding pigs can be found in Arusha, Kilimanjaro and Manyara.

Table 3.5 shows that livestock ownership is more prevalent among the better-off than among the poorest households, which holds true for all animal types included in the table, with rates that gradually increase with wealth. From the poorest to the richer households, goats show the highest rates of ownership. In the richest quintile cattle in slightly more often owned.

Table 3.5. Livestock ownership, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Cattle (%)	18.8	23.5	24.2	27.7	35.1
Goats (%)	24.7	28.4	27.9	30.4	31.9
Sheep (%)	7.7	10.4	10.1	10.9	12.9
Pigs (%)	4.1	4.8	5.8	8.7	13.0

Source: Authors' calculation using NBS, 2006

Table 3.6 provides some insights into sizes of animal herds kept, for the different kinds of animals. Table 3.5 showed lower levels of livestock ownership among the poorer households. Evidence from Table 3.6 suggests that for those households that keep livestock the herd sizes do not show the same consistent pattern as observed in the previous table. Average numbers of cows and sheep are higher among the poorest cattle and goat keepers and among the livestock keepers from the richest quintile: the poorest cattle keepers owning about four more cows than the wealthiest cattle keepers. It is important to mention that the number of animals owned was not used in the weighing of the household asset index. In particular pastoralists like the Masaai live under relatively poor conditions but own large herds of cattle.

Table 3.6. Herd size for different types of animals, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Average herd size (household with animals)					
Cattle	14.3	17.7	13.5	12.7	10.3
Sheep	9.8	9.8	8.8	6.4	7.3
Goats	8.1	9.6	8.8	8.0	8.1
Pigs	2.3	2.6	4.4	2.8	3.7
Poultry	7.1	7.8	8.1	9.0	10.4

Source: Authors' calculation using NBS, 2006

Table 3.7 assesses to what extend multiple types of animals are kept. The table shows some differences in mix of animals kept by the poorest and the wealthiest households; less than 1 percent of the poorest smallholder households keep cattle together with sheep, goats and pigs, while in the richest households this is almost 2 percent, so in absolute terms the difference is minimal. Around 50 percent of households keep just one type of animal; this was in 57 percent of the poorest households and 49 percent in the richest households. Data show that among livestock keepers the extent to which poor and wealthy households are able to differentiate their herds does not seem to differ very much.

Table 3.7. Herd differentiation, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Cattle with 3 other animal types (%)	0.9	0.6	1.0	1.2	1.8
Cattle with 2 other animal types (%)	15.2	18.6	16.9	14.9	15.8
Cattle with 1 other animal type (%)	21.1	22.4	22.0	24.6	25.6
Cattle only (%)	17.4	17.3	19.2	18.6	21.3
No cattle with 3 other types of animals (%)	0.2	0.3	0.3	0.5	0.8
No cattle with 2 other types of animals (%)	5.6	6.0	6.2	7.3	6.6
No cattle with 1 other type of animals (%)	39.6	34.7	34.4	32.8	28.1

Source: Authors' calculation using NBS, 2006

Improved farming techniques

Improved farming techniques are used in less than 48 percent of the smallholder households. Overall, farmyard manure is the most frequently used type of input, followed by improved seeds and pesticides/fungicides.

There are substantial poverty/wealth differences in the use of improved farming techniques. Smallholders from the richest quintile are over 2 times more likely to use an improved farming technique than smallholders from the poorest quintile (69 versus 32 percent). The richest households use chemical fertilizers 6 times more frequently than the poorest households (see Table 3.8). On average the households belonging to the richest quintile used 2.1 different types of improved inputs/techniques compared to 1.4 different types in households from the poorest quintile.

Within all poverty/wealth groups, more households than at the time of survey plan to use improved inputs/techniques in the next year, showing a substantial increase from two out five households in poorest quintile to four out of five households in the richest quintile.

Table 3.8. Use of Improved Farming techniques, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Any type of improved technique used (%)	31.8	41.0	45.0	55.1	68.7
Chemical fertilisers (%)	4.2	6.0	8.1	13.6	25.6
Farm yard manure (%)	14.7	20.4	23.4	30.5	41.6
Compost (%)	3.7	5.1	6.1	6.9	7.6
Pesticide/fungicide (%)	9.2	12.8	13.4	19.6	27.7
Herbicide (%)	0.5	0.8	1.1	1.5	4.0
Improved seeds (%)	9.9	13.5	15.2	20.1	32.7
Other (%)	2.1	2.6	2.3	2.1	1.5
Plan to use inputs next year (%)	54.6	63.0	65.5	71.8	81.1

Source: Authors' calculation using NBS, 2006

Irrigation

Use of irrigation water primarily depends on availability of irrigation water sources, and secondly on households accessibility to irrigation water. Overall the use of irrigation is little, only 8 percent of the smallholder households apply any kind of irrigation technique. Table 3.9 shows the poverty/wealth relationship with the use of irrigation, which is almost 4 percent among the poorest households and 14 percent in the wealthiest households. Among those that use irrigation there is little difference in the source of irrigation water; almost 50 percent of the households in all quintiles use water from rivers. The use of water from wells is more common among the poorest up to middle quintile households, whereas water from canals is a more frequent source of irrigation water for the richer and richest households.

Gravity, both for obtaining irrigation water as well as method for irrigation is most common among all irrigation users, rates for richest quintile exceed the rates observed in the other quintiles with around 10 percentage points. Only the use of bucket shows some differences between the richest and the other four poverty/wealth quintiles. Use of bucket, shows just the opposite relationship from gravity irrigation, higher rates in the poorest to richer quintiles and about 10 percent lower rate in the richest irrigation users.

Area under irrigation ranges from 1.2 acres for the poorest households to 1.7 acres for the richest households, with 1.9 acres under irrigation in the middle quintile.

The last line of Table 3.9 shows the percentage of households using erosion control. Erosion control is applied at a limited scale, but is substantially more common among richest households (almost 17 percent) than among the poorest households (5 percent) only.

Table 3.9 Use of irrigation and erosion control, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Use of irrigation (%)	3.9	5.5	6.9	9.3	14.1
Source of irrigation water (%)					
River	47.7	48.4	48.9	49.7	49.4
Lake	1.0	1.8	1.6	1.4	1.8
Dam	5.2	8.3	5.3	5.5	3.2
Well	20.9	17.4	17.6	14.7	10.0
Borehole	2.1	0.5	0.8	0.5	0.5
Canal	23.1	23.2	25.3	27.6	32.5
Piped water	0.0	0.5	0.4	0.6	2.6
Method used for obtaining irrigation water (%)					
Gravity	52.1	54.3	53.5	57.8	65.6
Bucket	44.3	43.9	43.6	40.0	29.1
Hand pump	0.2	0.1	0.7	0.4	1.4
Motor pump	1.2	0.7	0.6	0.4	1.2
Other	1.8	0.6	1.4	0.9	1.3
Irrigation method (%)					
Gravity	51.0	53.6	50.8	54.0	64.5
Sprinkler	1.5	2.4	2.2	1.6	1.3
Water hose	0.9	0.4	0.9	0.6	2.3
Bucket	46.6	43.6	46.1	43.8	31.9
Area under irrigation (in acres)	1.2	1.3	1.9	1.4	1.7
Area under irrigation during past year (in acres)	0.8	0.9	0.9	1.0	1.3
Erosion control (%)	5.3	6.5	8.4	11.7	17.2

Source: Authors' calculation using NBS, 2006

4. Access to services

Distance to public services and service centres

The poor are considered to have limited access to social services, partly due to lack of financial resource to make use of services, and partly due to larger physical distances to the services and facilities. The latter statement is confirmed by Table 4.1, which displays the distance in kilometres to a number of social services or service centres. All services included in the table show a negative relationship between poverty/wealth levels and distance to a particular service or service centre; increased wealth is associated with a reduced distance to services. The distance to primary schools decreases from 3.0 km. for the poorest quintile to 1.9 km. for the richest quintile; distance to a primary health care centre decreases from 8.7 km. to 5.1 km, again from poorest to richest quintile. Also distances to markets gradually decline with increased poverty/wealth, from 11 km. to 7.8 km. to primary markets and from 23.3 to 19.6 km to secondary markets. Figures 4.1 and 4.2 clearly demonstrate the inverse relationship between poverty and proximity to public services.

These findings contradict to some extent findings from the IFPRI 2006 study that found 'surprisingly' weak relationships between poverty and remoteness. Figures 4.1 to 4.4 show the poverty distance - relationship for a number of services

Table 4.1 Distances to General Public Services or Service Centres, 2002/03

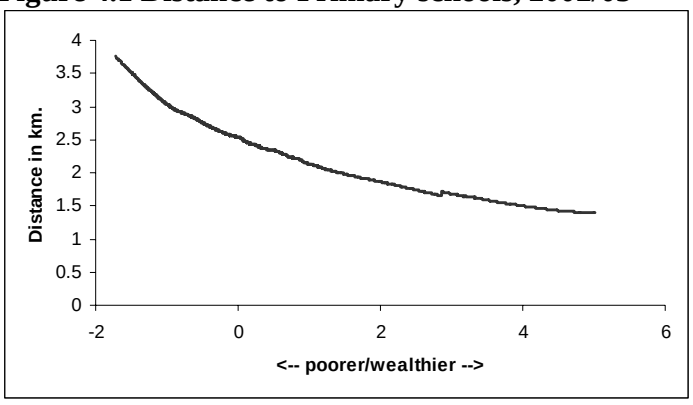
	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Primary school	3.0	2.8	2.8	2.2	1.9
Secondary school	22.7	20.5	18.4	15.9	12.5
Health centre/dispensary	8.7	7.8	6.8	6.3	5.1
Hospital	47.1	43.5	41.3	37.2	31.9
District capital	57.2	53.1	50.1	47.1	41.0
Regional capital	137.7	127.9	122.1	122.3	106.2
Feeder road	2.1	1.9	1.5	1.8	1.3
All weather road	7.7	6.7	5.8	5.2	3.5
Tarmac road	72.3	67.2	63.9	58.9	47.6
Primary market	11.0	10.4	9.6	9.1	7.8
Secondary market	23.3	21.8	21.2	20.9	19.6
Tertiary market	47.5	43.4	41.0	39.2	35.4

Source: Authors' calculation using NBS, 2006

Testing the impact of distance to a primary school on primary school enrolment or school completion it was found that increased distance had an independent negative impact on actual primary school enrolment or school completion, but the effect was weak[9]. Surprisingly, the effect was slightly stronger for boys than for girls.

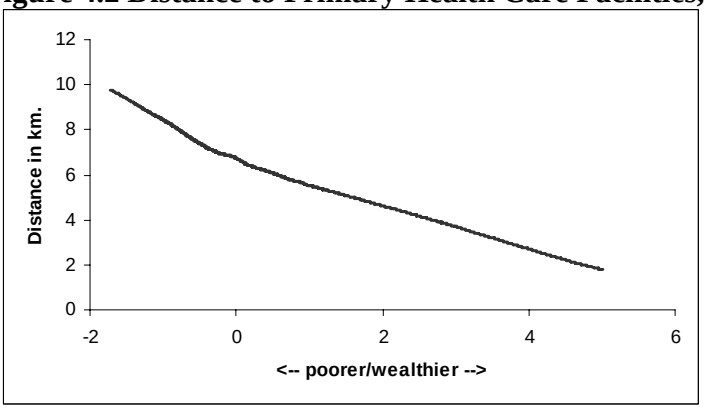
[9] The impact of distance to a primary school was testing with control for age of the child and poverty status of the child's household for children between the age of 7 and 18.

Figure 4.1 Distance to Primary schools, 2002/03



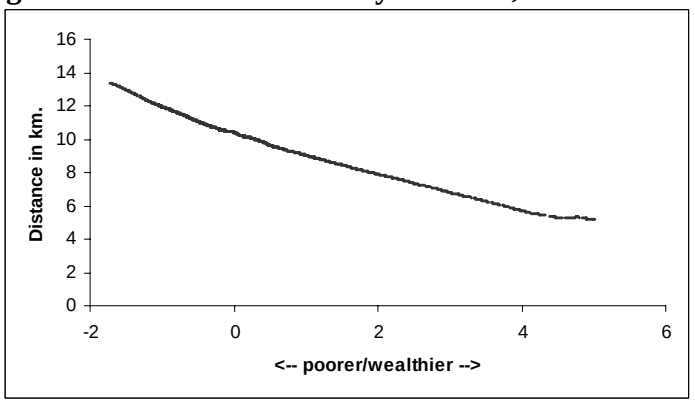
Source: Authors' calculation using NBS, 2006

Figure 4.2 Distance to Primary Health Care Facilities, 2002/03



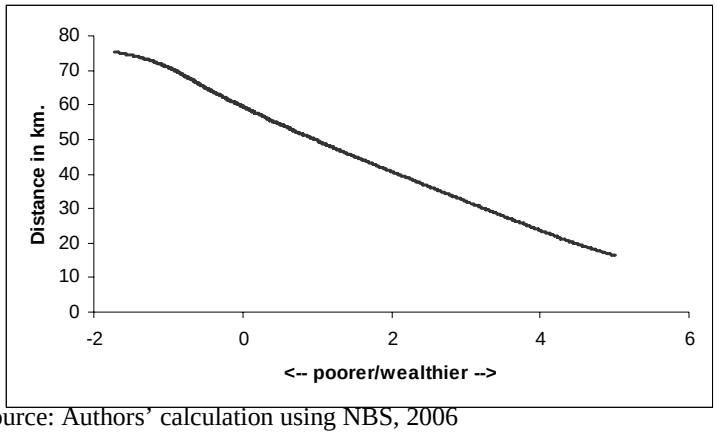
Source: Authors' calculation using NBS, 2006

Figure 4.3 Distance to Primary Markets, 2002/03



Source: Authors' calculation using NBS, 2006

Figure 4.4 Distance to the Nearest Tarmac Roads, 2002/03



Source: Authors' calculation using NBS, 2006

In addition to the previous table, Table 4.2 shows more detail on distances to livestock markets. It is again clear that remoteness in accessing livestock markets is more a problem for the poorest than for the wealthiest households.

Table 4.2 Distance to Livestock markets, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Distance to primary market (in km.)	15.9	14.0	13.4	12.5	10.4
Distance to secondary market (in km.)	24.4	20.8	18.9	16.4	14.1

Source: Authors' calculation using NBS, 2006

Use of extension services

The main function of extension services is to provide advice to farmers and livestock keepers aimed at improving productivity. Each district is supposed to have extension services, and sometimes these services exist at ward or village levels. This is supposed to reduce the distance between the service provider and the recipients.

When interpreting the information on use and quality of extension services one has to bear in mind that interviews were conducted by extension officer, which may have biased the responses to questions concerning extension services.

Despite the relative proximity of extension officer to those demanding services, the services do not seem to reach the entire smallholder community. On average, only 35 percent of the crop growers and almost 32 percent of the livestock keepers received any extension advice. As Table 4.3 displays this was substantially less for the poorest households (23 and 16 percentage) and more for the richest smallholder households (50 and 49 percent).

Table 4.3. Extension Advice Received

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
On crop production	23.3	28.8	33.2	39.4	50.1
On livestock keeping	16.4	24.4	26.2	32.6	49.0

Source: Authors' calculation using NBS, 2006

Over 90 percent of smallholder households received extension advice from government extension services, with very little difference by poverty/wealth status. The second largest provider of extension services is NGO/development projects, again with no substantial differences by poverty/wealth quintile. Cooperatives and large-scale farmers hardly play a role when it comes to provision of extension services. Data on use of extension services by type of extension service is provided in Table 4.4

Table 4.4. Use of Crop Extension Services by Type of Extension Provider, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Government (%)	93.0	94.8	93.7	94.5	95.7
Ngo/development project (%)	15.2	11.6	14.8	15.3	16.6
Cooperative (%)	3.3	2.9	2.5	3.7	5.6
Large-scale farmer (%)	4.6	3.3	3.5	3.7	4.3
Other (%)	3.8	2.9	2.6	3.4	2.8

Source: Authors' calculation using NBS, 2006

The lower frequency of use of extension services by the poorest and poorer is combined with less number of extension messages adopted by those that received advice, except for messages provided by large-scale farmers, which shows no consisted difference by poverty/wealth status. Differences are not large, and range for government extension services from 4 messages adopted by the poorest households to 5 messages adopted by the richest households. Though results should be taken with caution, it seems that government extension officers do get more messages adopted than the other providers of extension services.

Table 4.5. Number of Crop Extension Messages Adopted by Type of Extension Provider, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Government	4.1	4.1	4.3	4.7	5.1
Ngo/development project	2.9	3.1	3.1	3.6	3.5
Cooperative	2.4	1.7	2.6	3.3	3.6
Large scale farmer	2.5	3.3	2.5	2.5	2.4
Other	2.3	4.4	2.9	3.0	5.8

Source: Authors' calculation using NBS, 2006

Level of satisfaction with extension services provided is high, with highest appreciation for government and NGO/development project offered extension services. Though differences are small, the poorest seem less satisfied with the quality of services provided than the richest households, this applies to all service providers evaluated in Table 4.6.

Highest levels of dissatisfaction for services provided by cooperatives are expressed by the poorest and poorer smallholder farmers, while the poorest also show dissatisfaction for the large-scale farmer. However, as shown in Table 4.4 the importance of these institutions as extension service provider is limited.

Table 4.6. Appreciation of the Quality of Crop Extension Services by Type of Extension Provider, 2002/03

		Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Government	Good (%)	76.4	78.0	78.1	80.8	81.7
	Poor (%)	2.6	2.3	2.2	2.5	1.8
Ngo/development project	Good (%)	72.3	82.1	73.9	77.7	78.3
	Poor (%)	6.0	2.6	2.0	3.2	3.2
Cooperative	Good (%)	63.2	58.1	69.9	62.4	74.3
	Poor (%)	16.2	17.5	4.5	6.8	3.3
Large scale farmer	Good (%)	63.2	71.2	60.8	72.6	69.2
	Poor (%)	11.0	2.6	3.0	2.5	3.2
Other	Good (%)	64.6	59.4	66.7	71.0	85.2
	Poor (%)	5.2	6.8	0.0	4.6	5.2

Source: Authors' calculation using NBS, 2006

Livestock extension services

As observed with crop extension services, also government extension officers predominantly provide livestock extension services. Differences between poverty/wealth quintiles are small. NGO/development projects are the next largest livestock extension service providers with 7 percent of the poorest and 10 of the richest livestock keepers being serviced. As Table 4.7 clearly demonstrates the other service providers hardly play a role.

Table 4.7. Use of Livestock Extension Services by Type of Extension Provider, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Government	96.9	97.8	97.5	96.5	97.7
Ngo/development project	7.0	5.9	6.8	8.9	10.0
Cooperative	0.5	0.5	0.7	1.0	1.2
Large scale farmer	1.2	1.6	1.8	1.9	1.7
Other	1.5	2.6	2.2	3.3	3.1

Source: Authors' calculation using NBS, 2006

Among livestock extension message adopters, number of messages adopted among the poorest households is 2.3 less compared to the number of government extension

messages adopted by households from the richest quintile. The gap is even larger when it comes to messages adopted from NGO/development projects as displayed in Table 4.8.

Table 4.8. Number of Livestock Extension Messages Adopted by Type of Extension Provider, 2002/03

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Government	3.6	4.4	4.3	5.1	5.9
Ngo/development project	3.2	3.9	3.8	4.5	6.7
Cooperative	6.7	3.0	3.6	3.4	5.0
Large scale farmer	2.5	2.0	4.9	4.0	4.1
Other	2.4	2.5	3.3	4.8	6.2

Source: Authors' calculation using NBS, 2006

Table 4.9 shows the levels of appreciation of livestock extension services offered by government and the largest provider, the NGO/development project. In case of government services, over 80 percent of the clients appreciate government livestock extension services, the poorest being less positive (79 percent) and the wealthiest livestock keepers showing the highest degree of satisfaction (88 percent). Among the bottom three quintile livestock keepers, satisfaction levels with services provided by NGO/development projects are lower, and the proportion of these households appreciating NGO/development project services as poor or very poor is substantially higher, 14, 8 and 5 percent among the poorest, poorer and middle quintile households respectively.

Table 4.9. Appreciation of the Quality of Livestock Extension Services by Type of Extension Provider, 2002/03

		Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Government	Good (%)	78.9	81.9	81.3	85.7	87.7
	Poor (%)	1.8	2.1	1.9	1.0	0.8
NGO/development project	Good (%)	77.1	73.6	70.2	86.3	90.0
	Poor (%)	14.1	8.4	4.8	0.8	1.5

Source: Authors' calculation using NBS, 2006

5. Gender division of labour

The final section deals with gender division of labour. The agricultural census collected information on labour use for 28 farm activities for which the main responsible person was indicated. Main responsibility however does not necessarily mean sole responsibility, but through this question it is possible to get some insight in the division of labour between the sexes. The main purpose of this analysis is to assess whether gender roles differ by poverty/wealth status of the household, without distinguishing between different age groups. Details on each activity are presented in Table 5.1. The most cases the involvement of men, women and both sexes does not add-up to 100 percent. The remainder is the share of externally hired help involved in the activities.

There are specific activities that are typically male and activities that are typically female. Crop processing, milking, collection of firewood and water and making beer are predominantly female activities. Animal marketing, cutting and building activities, bee keeping and fishing are predominantly male activities. Poverty/wealth levels of the household have an impact on labour burden on men and women. In 24 out of the 28 included activities the poorest women take a larger part in the activity compared to women from the wealthiest households. Activities for which the increased participation of the poorest women shows largest differences with the wealthiest households are activities with high male or involvement of both sexes, with overall low levels of female involvement. Higher involvement among the poorest male compared to wealthiest male can be observed in 13 out of the 28 activities.

Table 5.1 clearly demonstrates that burden of poverty is put on the shoulders of women. Their participation in non-typical female activities is higher among poorest women than among the women belonging to the richest households. Participation of men in typically female activities tends to be lower in the poorest compared to the wealthiest households.

Table 5.1 Male and Female involvement in Farm Activities

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Land clearing (%)					
Male	43.6	42.6	43.8	42.2	37.1
Female	12.6	11.2	10.4	8.9	8.2
Both sexes	41.9	43.8	43.4	45.2	43.9
Soil preparation by hand (%)					
Male	16.2	17.3	18.1	17.9	17.3
Female	13.5	12.1	10.8	9.7	9.0
Both sexes	68.8	68.6	68.7	68.8	63.4
Soil preparation with oxen/tractor (%)					
Male	47.7	46.5	45.4	44.9	42.8
Female	5.7	4.7	5.2	5.0	4.7
Both sexes	36.7	38.7	39.6	37.8	31.4
Planting (%)					
Male	5.7	5.2	6.0	6.1	6.6
Female	17.0	14.7	13.6	11.8	10.8
Both sexes	76.6	79.0	79.0	80.0	75.9
Weeding (%)					
Male	4.9	4.4	4.4	5.0	5.1
Female	13.2	11.0	10.8	8.7	8.6
Both sexes	80.7	82.8	82.5	82.7	74.4
Crop protection (%)					
Male	14.2	12.9	15.8	15.1	15.4
Female	12.7	11.4	10.3	9.6	9.9
Both sexes	72.2	74.6	72.6	73.5	67.1
Harvesting (%)					
Male	4.8	4.2	4.9	4.7	5.0
Female	14.6	12.4	11.7	10.1	9.6
Both sexes	79.8	82.3	82.1	82.8	77.4
Crop processing (%)					
Male	7.9	6.8	7.6	7.9	7.6
Female	68.6	67.4	64.5	63.0	60.7
Both sexes	23.1	25.3	27.4	28.2	28.9
Crop marketing (%)					
Male	51.7	53.5	52.1	53.2	50.3
Female	20.2	17.8	17.7	15.6	17.1
Both sexes	28.0	28.6	30.1	30.9	32.2
Cattle rearing (%)					
Male	61.7	59.0	56.2	52.5	34.2
Female	7.0	6.9	7.6	7.1	10.4
Both sexes	30.7	33.8	36.0	39.6	52.4
Cattle herding (%)					
Male	56.3	51.8	51.5	51.1	43.1
Female	3.6	3.9	3.9	3.1	3.7
Both sexes	37.2	41.2	40.1	39.4	35.7

Table 5.1 Male and Female involvement in Farm Activities (continued)

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Cattle marketing (%)					
Male	80.6	82.1	76.0	77.6	73.4
Female	9.6	6.6	8.3	7.0	7.1
Both sexes	9.6	11.1	15.4	15.3	19.1
Goat/sheep rearing (%)					
Male	53.8	53.3	49.9	47.9	34.5
Female	10.3	8.4	7.9	7.7	8.8
Both sexes	35.7	38.1	41.9	44.0	55.1
Goat/sheep herding (%)					
Male	47.9	43.9	43.8	43.2	38.5
Female	6.9	6.2	5.3	4.2	5.3
Both sexes	43.3	46.8	48.0	48.5	45.2
Goat/sheep marketing (%)					
Male	74.7	75.2	72.8	74.4	68.3
Female	12.0	9.3	9.1	7.4	9.2
Both sexes	13.0	15.3	18.0	18.1	21.6
Milking (%)					
Male	34.3	35.0	35.6	33.5	22.3
Female	48.8	42.8	40.4	41.6	52.3
Both sexes	16.3	21.0	22.0	22.9	20.7
Pig rearing (%)					
Male	29.5	24.5	23.5	19.5	21.5
Female	22.6	17.3	23.2	16.2	19.5
Both sexes	47.5	57.9	53.1	63.6	57.3
Poultry keeping (%)					
Male	18.5	16.4	16.3	14.5	12.4
Female	25.9	26.3	27.4	25.7	28.4
Both sexes	55.5	57.1	56.2	59.8	58.7
Collecting water (%)					
Male	5.7	5.3	5.8	6.0	6.3
Female	78.1	75.4	73.1	70.0	64.3
Both sexes	16.0	19.1	21.0	23.7	28.0
Collecting firewood (%)					
Male	9.9	8.7	9.4	9.0	8.9
Female	75.1	74.2	72.7	71.9	66.9
Both sexes	14.8	16.7	17.5	18.4	21.5
Pole cutting (%)					
Male	80.8	81.3	82.6	82.8	78.6
Female	8.6	8.6	7.0	5.9	5.6
Both sexes	5.8	5.9	6.0	6.7	8.7

Table 5.1 Male and Female involvement in Farm Activities (continued)

	Poorest 20%	Poorer 20%	Middle 20%	Richer 20%	Richest 20%
Timber wood cutting (%)					
Male	86.3	81.4	82.0	81.3	76.1
Female	4.8	5.1	6.8	4.4	3.0
Both sexes	5.3	7.2	4.7	4.7	7.5
Building/maintaining houses (%)					
Male	76.2	76.7	77.3	77.3	75.2
Female	9.2	7.7	6.6	6.2	5.7
Both sexes	8.8	10.0	10.5	10.0	9.6
Making beer (%)					
Male	13.4	13.6	14.7	16.3	14.1
Female	78.3	74.8	73.4	72.9	68.2
Both sexes	7.4	10.8	11.0	9.8	16.5
Bee keeping (%)					
Male	88.0	87.1	87.5	88.0	85.0
Female	7.4	6.2	8.0	6.4	4.8
Both sexes	3.7	3.9	3.1	5.6	8.7
Fishing (%)					
Male	90.9	89.2	92.8	92.9	90.8
Female	3.2	6.5	2.5	3.3	2.9
Both sexes	4.8	3.5	3.6	2.7	2.5
Fish farming (%)					
Male	61.4	62.8	58.0	55.8	61.2
Female	16.8	11.8	10.2	19.6	5.7
Both sexes	16.1	22.0	29.6	24.6	33.1
Off-farm income (%)					
Male	49.8	52.6	51.1	53.6	58.0
Female	20.4	18.9	17.6	16.6	15.2
Both sexes	29.6	28.4	31.1	29.6	26.4

Source: Authors' calculation using NBS, 2006

Appendix A.

Table A2.1. General Household Demographics, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Household size	9,391	5.2	0.0	9,466	5.2	0.0	9,464	5.1	0.0	9,681	5.2	0.0	10,343	5.1	0.0
Male headed household (%)	9,391	76.9	0.5	9,466	78.8	0.5	9,464	79.7	0.5	9,681	82.5	0.5	10,343	83.8	0.5
Age composition (%)															
below 15 years of age	9,391	39.3	0.3	9,466	39.3	0.3	9,464	37.4	0.3	9,681	38.0	0.3	10,343	36.1	0.3
between 15 and 60 years	9,391	49.7	0.3	9,466	51.3	0.3	9,464	53.0	0.3	9,681	53.8	0.3	10,343	56.5	0.3
aged 60 and above	9,391	10.9	0.3	9,466	9.4	0.2	9,464	9.6	0.2	9,681	8.3	0.2	10,343	7.4	0.2

Source: Authors' calculation using NBS, 2006

Table A2.2. Head of household characteristics, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Age	9,391	46.1	0.2	9,466	45.4	0.2	9,464	45.3	0.2	9,681	44.8	0.2	10,343	44.4	0.2
Education															
No education (%)	9,391	47.9	0.6	9,466	41.5	0.6	9,464	35.6	0.6	9,681	26.9	0.5	10,343	14.2	0.4
At least some years of primary (%)	9,391	51.1	0.6	9,466	56.9	0.6	9,464	62.3	0.6	9,681	69.2	0.5	10,343	71.3	0.5
At least some years of secondary (%)	9,391	1.0	0.1	9,466	1.4	0.1	9,464	1.9	0.1	9,681	3.5	0.2	10,343	10.8	0.4
At least some years of post secondary (%)	9,391	0.0	0.0	9,466	0.2	0.0	9,464	0.2	0.1	9,681	0.4	0.1	10,343	3.6	0.2
Years of education	9,391	3.1	0.0	9,466	3.6	0.0	9,464	4.0	0.0	9,681	4.6	0.0	10,343	6.1	0.0
Intensity of farm employment (%)															
Full-time working on farm	9,391	63.7	0.8	9,466	61.3	0.7	9,464	60.5	0.7	9,681	61.1	0.7	10,343	51.0	0.8
Part-time working on farm	9,391	6.7	0.4	9,466	7.6	0.4	9,464	7.6	0.4	9,681	8.3	0.4	10,343	13.9	0.5
Rarely working on farm	9,391	28.0	0.7	9,466	29.4	0.7	9,464	30.0	0.7	9,681	28.9	0.7	10,343	32.2	0.7
Never working on farm	9,391	1.6	0.2	9,466	1.8	0.1	9,464	1.9	0.2	9,681	1.7	0.1	10,343	2.8	0.2
Economic activity (%)															
Crop/seaweed farming	9,391	79.7	0.6	9,466	79.4	0.6	9,464	78.6	0.6	9,681	77.5	0.6	10,343	65.0	0.7
Livestock keeping/herding	9,391	4.0	0.3	9,466	4.1	0.3	9,464	3.6	0.2	9,681	3.1	0.2	10,343	3.1	0.2
Livestock pastoralists	9,391	0.2	0.1	9,466	0.3	0.1	9,464	0.1	0.0	9,681	0.1	0.0	10,343	0.2	0.0
Fishing	9,391	1.7	0.2	9,466	1.7	0.2	9,464	1.9	0.2	9,681	1.7	0.2	10,343	1.1	0.1
Government/parastatal	9,391	0.2	0.0	9,466	0.3	0.1	9,464	0.6	0.1	9,681	1.8	0.2	10,343	9.2	0.4
Private – NGO/mission/etc.	9,391	3.1	0.3	9,466	3.6	0.3	9,464	4.4	0.3	9,681	5.2	0.3	10,343	7.9	0.4
Self employed - non farming with employees	9,391	1.2	0.1	9,466	1.0	0.1	9,464	1.4	0.1	9,681	1.9	0.2	10,343	4.1	0.3
Self employed - non farming no employees	9,391	6.3	0.4	9,466	6.1	0.4	9,464	6.1	0.4	9,681	5.6	0.3	10,343	6.2	0.4
Unpaid family worker (non farming)	9,391	0.6	0.1	9,466	0.6	0.1	9,464	0.5	0.1	9,681	0.6	0.1	10,343	0.8	0.1
Not working and available for work	9,391	0.1	0.0	9,466	0.1	0.0	9,464	0.0	0.0	9,681	0.1	0.0	10,343	0.1	0.0
Not working and unavailable for work	9,391	0.0	0.0	9,466	0.1	0.0	9,464	0.1	0.0	9,681	0.1	0.0	10,343	0.0	0.0
House maker/housewife	9,391	0.0	0.0	9,466	0.1	0.0	9,464	0.1	0.0	9,681	0.1	0.0	10,343	0.2	0.0
Student	9,391	0.0	0.0	9,466	0.0	0.0	9,464	0.1	0.0	9,681	0.0	0.0	10,343	0.0	0.0
Unable to work -too old/retired/sick/disabled	9,391	2.4	0.2	9,466	2.4	0.2	9,464	2.3	0.2	9,681	2.0	0.2	10,343	1.8	0.2
Other	9,391	0.3	0.1	9,466	0.2	0.1	9,464	0.3	0.1	9,681	0.2	0.1	10,343	0.3	0.1
Earning non-farm income (%)	9,391	60.3	0.8	9,466	61.7	0.7	9,464	62.0	0.7	9,681	62.8	0.7	10,343	70.2	0.7

Source: Authors' calculation using NBS, 2006

Table A2.3 Spouse of head of household characteristics, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Age	6,740	35.6	0.2	7,039	35.2	0.2	7,110	35.4	0.2	7,476	35.4	0.2	8,044	36.0	0.2
Age difference between head and spouse	6,740	8.7	0.1	7,039	8.6	0.1	7,110	8.5	0.1	7,476	8.5	0.1	8,044	8.0	0.0
Education															
No education (%)	6,740	55.1	0.7	7,039	48.5	0.7	7,110	43.0	0.7	7,476	34.3	0.7	8,044	19.9	0.4
At least some years of primary (%)	6,740	45.7	0.7	7,039	52.2	0.7	7,110	57.7	0.7	7,476	65.8	0.6	8,044	76.2	0.5
At least some years of secondary (%)	6,740	0.2	0.1	7,039	0.3	0.1	7,110	0.3	0.1	7,476	0.8	0.1	8,044	4.0	0.4
At least some years of post secondary (%)	6,740	0.0	0.0	7,039	0.0	0.0	7,110	0.1	0.0	7,476	0.1	0.0	8,044	0.8	0.2
Years of education	6,740	2.8	0.0	7,039	3.3	0.0	7,110	3.7	0.0	7,476	4.3	0.0	8,044	5.4	0.0
Difference in years of education between head and spouse	6,740	0.7	0.0	7,039	0.7	0.0	7,110	0.7	0.0	7,476	0.8	0.0	8,044	1.0	0.0
Intensitity of farm employment (%)															
Full-time working on farm	6,740	80.8	0.7	7,039	79.8	0.7	7,110	79.3	0.7	7,476	80.8	0.6	8,044	73.7	0.8
Part-time working on farm	6,740	2.8	0.3	7,039	3.0	0.3	7,110	2.8	0.2	7,476	3.1	0.2	8,044	6.1	0.5
Rarely working on farm	6,740	15.8	0.7	7,039	16.5	0.6	7,110	17.2	0.6	7,476	15.5	0.6	8,044	19.3	0.7
Never working on farm	6,740	1.1	0.1	7,039	1.0	0.1	7,110	1.0	0.2	7,476	0.8	0.1	8,044	1.5	0.2
Economic activity (%)															
Crop/seaweed farming	6,740	91.6	0.5	7,039	91.5	0.4	7,110	91.7	0.4	7,476	93.0	0.4	8,044	83.7	0.7
Livestock keeping/herding	6,740	2.1	0.3	7,039	1.9	0.2	7,110	1.7	0.2	7,476	1.0	0.1	8,044	2.0	0.2
Livestock pastoralist	6,740	0.2	0.1	7,039	0.2	0.1	7,110	0.0	0.0	7,476	0.1	0.0	8,044	0.1	0.0
Fishing	6,740	0.1	0.1	7,039	0.2	0.1	7,110	0.1	0.0	7,476	0.1	0.0	8,044	0.1	0.1
Government/parastatal	6,740	0.0	0.0	7,039	0.1	0.0	7,110	0.1	0.0	7,476	0.3	0.1	8,044	2.8	0.4
Private – NGO/mission/etc.	6,740	0.6	0.1	7,039	0.7	0.1	7,110	1.1	0.2	7,476	1.0	0.2	8,044	1.7	0.4
Self employed - non farming with employees	6,740	0.2	0.1	7,039	0.3	0.1	7,110	0.4	0.1	7,476	0.3	0.1	8,044	1.3	0.3
Self employed - non farming no employees	6,740	1.3	0.2	7,039	1.3	0.2	7,110	1.1	0.1	7,476	1.2	0.1	8,044	1.6	0.4
Unpaid family worker (non farming)	6,740	0.3	0.1	7,039	0.3	0.1	7,110	0.3	0.1	7,476	0.3	0.1	8,044	0.5	0.1
Not working and available for work	6,740	0.1	0.0	7,039	0.1	0.0	7,110	0.1	0.1	7,476	0.1	0.0	8,044	0.1	0.0
Not working and unavailable for work	6,740	0.0	0.0	7,039	0.1	0.0	7,110	0.1	0.0	7,476	0.0	0.0	8,044	0.0	0.0
Housemaker/housewife	6,740	2.1	0.3	7,039	2.1	0.3	7,110	2.1	0.2	7,476	1.9	0.2	8,044	5.3	0.0
Student	6,740	0.2	0.1	7,039	0.3	0.1	7,110	0.3	0.1	7,476	0.2	0.1	8,044	0.4	0.0
Unable to work -too old/retired/sick/disabled	6,740	1.4	0.2	7,039	1.2	0.1	7,110	1.1	0.2	7,476	0.8	0.1	8,044	0.9	0.2
Other	6,740	0.1	0.0	7,039	0.1	0.1	7,110	0.2	0.1	7,476	0.0	0.0	8,044	0.1	0.1
Earning non-farm income (%)	6,740	31.5	0.8	7,039	31.0	0.8	7,110	32.3	0.7	7,476	32.1	0.7	8,044	35.3	0.7

Table A2.4 Characteristics of the Male Population Aged 15 to 59, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Education															
No education (%)	10,976	30.6	0.6	11,479	25.2	0.6	11,500	20.0	0.5	12,238	13.9	0.4	13,588	7.0	0.3
At least some years of primary (%)	10,976	68.3	0.6	11,479	72.9	0.6	11,500	77.4	0.5	12,238	81.8	0.4	13,588	77.5	0.5
At least some years of secondary (%)	10,976	1.1	0.1	11,479	1.8	0.1	11,500	2.3	0.2	12,238	3.8	0.2	13,588	12.5	0.4
At least some years of post secondary (%)	10,976	0.1	0.0	11,479	0.2	0.0	11,500	0.3	0.1	12,238	0.5	0.1	13,588	3.1	0.2
Years of education	10,976	4.2	0.0	11,479	4.6	0.0	11,500	5.1	0.0	12,238	5.6	0.0	13,588	6.7	0.0
Intensity of farm employment (%)															
Full-time working on farm	10,976	62.1	0.8	11,479	59.8	0.7	11,500	58.4	0.7	12,238	57.2	0.7	13,588	44.4	0.7
Part-time working on farm	10,976	6.1	0.4	11,479	7.4	0.3	11,500	7.4	0.3	12,238	7.7	0.3	13,588	12.3	0.4
Rarely working on farm	10,976	27.5	0.7	11,479	29.1	0.6	11,500	29.4	0.6	12,238	29.8	0.6	13,588	34.6	0.7
Never working on farm	10,976	4.3	0.2	11,479	3.7	0.2	11,500	4.8	0.3	12,238	5.2	0.3	13,588	8.7	0.4
Economic activity (%)															
Crop/seaweed farming	10,976	73.1	0.7	11,479	72.1	0.6	11,500	71.6	0.6	12,238	69.3	0.6	13,588	55.2	0.7
Livestock keeping/herding	10,976	4.5	0.4	11,479	4.8	0.3	11,500	3.9	0.3	12,238	3.5	0.3	13,588	3.2	0.2
Livestock pastoralists	10,976	0.3	0.1	11,479	0.4	0.1	11,500	0.2	0.0	12,238	0.1	0.0	13,588	0.2	0.0
Fishing	10,976	2.1	0.2	11,479	2.0	0.2	11,500	2.1	0.2	12,238	1.9	0.2	13,588	1.1	0.1
Government/parastatal	10,976	0.2	0.0	11,479	0.3	0.1	11,500	0.6	0.1	12,238	1.4	0.1	13,588	6.6	0.3
Private – NGO/mission/etc.	10,976	2.7	0.2	11,479	3.0	0.2	11,500	3.7	0.3	12,238	4.7	0.3	13,588	7.6	0.4
Self employed - non farming with employees	10,976	1.1	0.1	11,479	1.2	0.1	11,500	1.6	0.2	12,238	2.0	0.2	13,588	3.9	0.3
Self employed - non farming no employees	10,976	4.6	0.3	11,479	5.0	0.3	11,500	4.7	0.3	12,238	4.5	0.3	13,588	5.3	0.3
Unpaid family worker (non farming)	10,976	0.8	0.1	11,479	0.7	0.1	11,500	0.6	0.1	12,238	0.7	0.1	13,588	1.3	0.1
Not working and available for work	10,976	0.3	0.1	11,479	0.3	0.1	11,500	0.3	0.1	12,238	0.4	0.1	13,588	0.8	0.1
Not working and unavailable for work	10,976	0.2	0.1	11,479	0.2	0.0	11,500	0.2	0.0	12,238	0.2	0.0	13,588	0.1	0.0
House maker/housewife	10,976	0.0	0.0	11,479	0.0	0.0	11,500	0.1	0.0	12,238	0.1	0.0	13,588	0.1	0.0
Student	10,976	8.4	0.3	11,479	8.8	0.3	11,500	9.3	0.3	12,238	10.0	0.3	13,588	13.2	0.4
Unable to work -too old/retired/sick/disabled	10,976	1.4	0.1	11,479	0.9	0.1	11,500	0.9	0.1	12,238	0.9	0.1	13,588	1.0	0.1
Other	10,976	0.3	0.1	11,479	0.3	0.1	11,500	0.4	0.1	12,238	0.2	0.0	13,588	0.5	0.1
Earning non-farm income (%)	10,976	46.0	0.8	11,479	47.2	0.7	11,500	48.0	0.7	12,238	48.5	0.7	13,588	54.0	0.7

Source: Authors' calculation using NBS, 2006

Table A2.5 Characteristics of the Female Population Aged 15 to 59, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Education															
No education (%)	11,893	48.2	0.6	12,338	41.7	0.6	12,238	36.5	0.6	12,864	27.6	0.5	14,176	15.0	0.4
At least some years of primary (%)	11,893	51.3	0.6	12,338	57.6	0.6	12,238	62.5	0.6	12,864	70.3	0.5	14,176	75.6	0.5
At least some years of secondary (%)	11,893	0.5	0.1	12,338	0.7	0.1	12,238	0.9	0.1	12,864	2.0	0.1	14,176	8.3	0.4
At least some years of post secondary (%)	11,893	0.0	0.0	12,338	0.0	0.0	12,238	0.1	0.0	12,864	0.1	0.0	14,176	1.1	0.1
Years of education	11,893	3.2	0.0	12,338	3.7	0.0	12,238	4.0	0.0	12,864	4.7	0.0	14,176	5.9	0.0
Intensity of farm employment (%)															
Full-time working on farm	11,893	75.2	0.7	12,338	74.3	0.6	12,238	73.4	0.6	12,864	72.8	0.6	14,176	62.6	0.7
Part-time working on farm	11,893	3.7	0.3	12,338	3.9	0.2	12,238	3.7	0.2	12,864	4.0	0.2	14,176	6.5	0.3
Rarely working on farm	11,893	18.3	0.6	12,338	18.8	0.5	12,238	20.1	0.6	12,864	19.7	0.6	14,176	24.5	0.6
Never working on farm	11,893	2.8	0.2	12,338	3.0	0.2	12,238	2.8	0.2	12,864	3.5	0.2	14,176	6.4	0.3
Economic activity (%)															
Crop/seaweed farming	11,893	85.3	0.5	12,338	85.0	0.4	12,238	85.3	0.4	12,864	83.9	0.4	14,176	71.7	0.7
Livestock keeping/herding	11,893	2.3	0.2	12,338	2.2	0.2	12,238	1.8	0.2	12,864	1.2	0.1	14,176	1.8	0.2
Livestock pastoralists	11,893	0.2	0.1	12,338	0.2	0.1	12,238	0.1	0.0	12,864	0.1	0.0	14,176	0.1	0.0
Fishing	11,893	0.2	0.1	12,338	0.2	0.0	12,238	0.1	0.0	12,864	0.1	0.0	14,176	0.1	0.0
Government/parastatal	11,893	0.1	0.0	12,338	0.1	0.0	12,238	0.1	0.0	12,864	0.5	0.1	14,176	2.8	0.2
Private - NGO/mission/etc.	11,893	0.9	0.1	12,338	1.3	0.1	12,238	1.6	0.2	12,864	1.9	0.2	14,176	2.9	0.2
Self employed - non farming with employees	11,893	0.3	0.1	12,338	0.4	0.1	12,238	0.6	0.1	12,864	0.6	0.1	14,176	1.6	0.1
Self employed - non farming no employees	11,893	2.1	0.2	12,338	1.7	0.2	12,238	1.7	0.2	12,864	1.8	0.2	14,176	2.1	0.2
Unpaid family worker (non farming)	11,893	0.5	0.1	12,338	0.5	0.1	12,238	0.6	0.1	12,864	0.4	0.1	14,176	1.1	0.1
Not working and available for work	11,893	0.2	0.0	12,338	0.3	0.0	12,238	0.3	0.1	12,864	0.3	0.1	14,176	0.7	0.1
Not working and unavailable for work	11,893	0.1	0.0	12,338	0.1	0.0	12,238	0.1	0.0	12,864	0.1	0.0	14,176	0.1	0.0
House maker/housewife	11,893	1.4	0.2	12,338	1.4	0.2	12,238	1.4	0.1	12,864	1.3	0.1	14,176	3.5	0.3
Student	11,893	4.9	0.2	12,338	5.2	0.2	12,238	5.3	0.2	12,864	6.6	0.3	14,176	10.0	0.3
Unable to work -too old/retired/sick/disabled	11,893	1.2	0.1	12,338	1.3	0.1	12,238	1.1	0.1	12,864	1.0	0.1	14,176	1.1	0.1
Other	11,893	0.2	0.1	12,338	0.1	0.0	12,238	0.2	0.1	12,864	0.3	0.1	14,176	0.4	0.1
Earning non-farm income (%)	11,893	30.9	0.7	12,338	30.2	0.6	12,238	31.5	0.6	12,864	30.5	0.6	14,176	33.8	0.7

Source: Authors' calculation using NBS, 2006

Table A2.6 Characteristics of the Child Population Below the Age of 15, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Education															
No education (%)	13,456	54.1	0.6	13,305	50.2	0.6	12,892	46.0	0.5	13,694	41.9	0.5	14,223	34.4	0.5
At least some years of primary (%)	13,456	46.0	0.6	13,305	49.8	0.6	12,892	54.0	0.5	13,694	58.1	0.5	14,223	65.6	0.5
Years of education	13,456	1.1	0.0	13,305	1.2	0.0	12,892	1.3	0.0	13,694	1.5	0.0	14,223	1.9	0.0
Intensitity of farm employment (%)															
Full-time working on farm	13,456	8.2	0.4	13,305	5.9	0.3	12,892	5.1	0.3	13,694	4.8	0.3	14,223	2.9	0.2
Part-time working on farm	13,456	5.7	0.4	13,305	6.2	0.4	12,892	6.6	0.4	13,694	6.1	0.4	14,223	6.6	0.4
Rarely working on farm	13,456	38.5	0.8	13,305	38.4	0.8	12,892	39.1	0.8	13,694	41.4	0.8	14,223	41.2	0.9
Never working on farm	13,456	47.5	0.9	13,305	49.5	0.8	12,892	49.1	0.8	13,694	47.7	0.8	14,223	49.3	0.9
Economic activity (%)															
Crop/seaweed farming	13,456	8.9	0.4	13,305	6.4	0.3	12,892	6.0	0.3	13,694	5.0	0.4	14,223	3.0	0.2
Livestock keeping/herding	13,456	2.0	0.2	13,305	1.7	0.2	12,892	1.0	0.1	13,694	0.9	0.1	14,223	0.3	0.1
Livestock pastoralists	13,456	0.2	0.1	13,305	0.1	0.0	12,892	0.1	0.0	13,694	0.1	0.0	14,223	0.1	0.0
Fishing	13,456	0.1	0.0	13,305	0.0	0.0	12,892	0.0	0.0	13,694	0.0	0.0	14,223	0.0	0.0
Government/parastatal	13,456	0.0	0.0	13,305	0.0	0.0	12,892	0.0	0.0	13,694	0.0	0.0	14,223	0.0	0.0
Private - NGO/mission/etc.	13,456	0.1	0.0	13,305	0.0	0.0	12,892	0.0	0.0	13,694	0.1	0.0	14,223	0.1	0.0
Self employed - non farming with employees	13,456	0.0	0.0	13,305	0.0	0.0	12,892	0.0	0.0	13,694	0.0	0.0	14,223	0.0	0.0
Self employed - non farming no employees	13,456	0.0	0.0	13,305	0.0	0.0	12,892	0.1	0.0	13,694	0.1	0.0	14,223	0.1	0.0
Unpaid family worker (non farming)	13,456	1.1	0.1	13,305	0.9	0.1	12,892	0.7	0.1	13,694	0.7	0.1	14,223	0.6	0.1
Not working and available for work	13,456	0.2	0.0	13,305	0.1	0.0	12,892	0.2	0.1	13,694	0.2	0.0	14,223	0.1	0.0
Not working and unavailable for work	13,456	0.2	0.0	13,305	0.2	0.1	12,892	0.1	0.0	13,694	0.1	0.0	14,223	0.1	0.0
Housemaker/housewife	13,456	0.2	0.0	13,305	0.3	0.0	12,892	0.3	0.1	13,694	0.3	0.1	14,223	0.6	0.1
Student	13,456	63.9	0.6	13,305	66.9	0.6	12,892	71.8	0.6	13,694	75.1	0.6	14,223	82.5	0.4
Unable to work -too old/retired/sick/disabled	13,456	20.6	0.5	13,305	20.2	0.5	12,892	17.4	0.5	13,694	14.9	0.4	14,223	10.9	0.4
Other	13,456	2.6	0.2	13,305	3.0	0.2	12,892	2.3	0.2	13,694	2.4	0.2	14,223	1.7	0.2
Earning non-farm income (%)	13,456	2.2	0.2	13,305	2.3	0.2	12,892	2.3	0.2	13,694	3.0	0.3	14,223	2.3	0.2

Source: Authors' calculation using NBS, 2006

Table A2.7 Characteristics of the Elderly Male Population Aged 60 and above, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Education															
No education (%)	1,796	69.6	1.2	1,754	63.4	1.2	1,742	59.9	1.3	1,752	50.1	1.3	1,651	33.5	1.4
At least some years of primary (%)	1,796	27.8	1.2	1,754	32.9	1.2	1,742	36.6	1.2	1,752	42.3	1.3	1,651	49.3	1.4
At least some years of secondary (%)	1,796	2.6	0.4	1,754	3.4	0.5	1,742	3.3	0.5	1,752	6.8	0.7	1,651	13.5	1.0
At least some years of post secondary (%)	1,796	0.0	0.0	1,754	0.4	0.1	1,742	0.3	0.1	1,752	0.8	0.2	1,651	3.7	0.5
Years of education	1,796	1.3	0.1	1,754	1.6	0.1	1,742	1.8	0.1	1,752	2.5	0.1	1,651	3.8	0.1
Intensitity of farm employment (%)															
Full-time working on farm	1,796	58.5	1.3	1,754	57.9	1.3	1,742	58.3	1.3	1,752	60.4	1.3	1,651	60.4	1.4
Part-time working on farm	1,796	5.5	0.6	1,754	5.3	0.6	1,742	4.7	0.6	1,752	5.1	0.6	1,651	6.9	0.7
Rarely working on farm	1,796	25.1	1.2	1,754	26.5	1.1	1,742	26.5	1.2	1,752	25.8	1.1	1,651	23.0	1.2
Never working on farm	1,796	10.9	0.8	1,754	10.3	0.8	1,742	10.6	0.9	1,752	8.8	0.7	1,651	9.7	0.8
Economic activity (%)															
Crop/seaweed farming	1,796	72.0	1.2	1,754	73.5	1.2	1,742	72.8	1.3	1,752	74.5	1.2	1,651	71.3	1.3
Livestock keeping/herding	1,796	4.8	0.5	1,754	5.0	0.6	1,742	5.0	0.6	1,752	4.3	0.6	1,651	4.2	0.6
Livestock pastoralist	1,796	0.4	0.2	1,754	0.3	0.2	1,742	0.0	0.0	1,752	0.3	0.1	1,651	0.2	0.1
Fishing	1,796	0.9	0.3	1,754	0.9	0.3	1,742	0.8	0.2	1,752	1.0	0.2	1,651	0.9	0.2
Government/parastatal	1,796	0.1	0.1	1,754	0.3	0.2	1,742	0.2	0.1	1,752	0.6	0.2	1,651	1.1	0.3
Private - NGO/mission/etc.	1,796	1.3	0.3	1,754	1.5	0.3	1,742	2.5	0.4	1,752	3.2	0.5	1,651	3.2	0.5
Self employed - non farming with employees	1,796	0.7	0.2	1,754	0.8	0.2	1,742	0.5	0.2	1,752	0.7	0.2	1,651	2.6	0.5
Self employed - non farming no employees	1,796	4.6	0.6	1,754	3.8	0.5	1,742	3.8	0.6	1,752	3.1	0.5	1,651	3.7	0.6
Unpaid family worker (non farming)	1,796	0.9	0.3	1,754	0.3	0.1	1,742	0.4	0.2	1,752	0.3	0.1	1,651	0.6	0.2
Not working and available for work	1,796	0.0	0.0	1,754	0.1	0.1	1,742	0.0	0.0	1,752	0.1	0.1	1,651	0.0	0.0
Not working and unavailable for work	1,796	0.1	0.1	1,754	0.0	0.0	1,742	0.0	0.0	1,752	0.0	0.0	1,651	0.0	0.0
Housemaker/housewife	1,796	0.0	0.0	1,754	0.2	0.1	1,742	0.2	0.1	1,752	0.0	0.0	1,651	0.0	0.0
Student	1,796	0.0	0.0	1,754	0.1	0.1	1,742	0.2	0.1	1,752	0.1	0.1	1,651	0.0	0.0
Unable to work -too old/retired/sick/disabled	1,796	14.2	1.0	1,754	13.0	0.9	1,742	13.4	0.9	1,752	11.5	0.9	1,651	11.9	0.9
Other	1,796	0.1	0.1	1,754	0.1	0.1	1,742	0.3	0.1	1,752	0.3	0.1	1,651	0.3	0.2
Earning non-farm income (%)	1,796	48.0	1.4	1,754	47.4	1.3	1,742	45.3	1.3	1,752	46.6	1.3	1,651	45.1	1.5

Source: Authors' calculation using NBS, 2006

Table A2.8 Characteristics of the Elderly Female Population Aged 60 and above, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Education															
No education (%)	1,696	93.1	0.7	1,565	92.6	0.7	1,460	89.6	0.9	1,434	87.1	0.9	1,369	69.2	1.6
At least some years of primary (%)	1,696	6.7	0.7	1,565	7.0	0.7	1,460	10.0	0.9	1,434	12.3	0.9	1,369	28.4	1.5
At least some years of secondary (%)	1,696	0.1	0.1	1,565	0.3	0.2	1,460	0.4	0.2	1,434	0.5	0.2	1,369	2.2	0.4
At least some years of post secondary (%)	1,696	0.1	0.1	1,565	0.0	0.0	1,460	0.0	0.0	1,434	0.1	0.1	1,369	0.2	0.1
Years of education	1,696	0.3	0.0	1,565	0.3	0.0	1,460	0.4	0.0	1,434	0.6	0.0	1,369	1.5	0.1
Intensitity of farm employment (%)															
Full-time working on farm	1,696	57.4	1.4	1,565	53.1	1.4	1,460	53.2	1.5	1,434	56.9	1.4	1,369	56.5	1.4
Part-time working on farm	1,696	2.9	0.5	1,565	2.4	0.4	1,460	3.2	0.5	1,434	2.8	0.4	1,369	2.7	0.5
Rarely working on farm	1,696	22.4	1.1	1,565	23.9	1.1	1,460	23.3	1.2	1,434	21.7	1.3	1,369	17.1	1.1
Never working on farm	1,696	17.3	1.1	1,565	20.6	1.1	1,460	20.3	1.2	1,434	18.6	1.1	1,369	23.7	1.3
Economic activity (%)															
Crop/seaweed farming	1,696	70.0	1.3	1,565	67.7	1.3	1,460	67.8	1.4	1,434	69.4	1.4	1,369	63.0	1.4
Livestock keeping/herding	1,696	1.5	0.3	1,565	1.0	0.3	1,460	1.2	0.3	1,434	0.9	0.3	1,369	1.3	0.4
Livestock pastoralist	1,696	0.2	0.1	1,565	0.1	0.1	1,460	0.0	0.0	1,434	0.1	0.1	1,369	0.1	0.1
Fishing	1,696	0.4	0.2	1,565	0.0	0.0	1,460	0.0	0.0	1,434	0.1	0.0	1,369	0.1	0.1
Government/parastatal	1,696	0.0	0.0	1,565	0.1	0.1	1,460	0.0	0.0	1,434	0.0	0.0	1,369	0.2	0.1
Private - NGO/mission/etc.	1,696	0.9	0.3	1,565	1.2	0.3	1,460	1.1	0.4	1,434	0.9	0.3	1,369	0.5	0.2
Self employed - non farming with employees	1,696	0.1	0.1	1,565	0.1	0.1	1,460	0.4	0.1	1,434	0.6	0.2	1,369	0.3	0.1
Self employed - non farming no employees	1,696	1.4	0.3	1,565	1.8	0.4	1,460	1.3	0.3	1,434	1.6	0.3	1,369	0.6	0.2
Unpaid family worker (non farming)	1,696	0.3	0.1	1,565	0.2	0.1	1,460	0.3	0.2	1,434	0.3	0.1	1,369	0.3	0.2
Not working and available for work	1,696	0.3	0.2	1,565	0.2	0.1	1,460	0.1	0.1	1,434	0.1	0.1	1,369	0.1	0.1
Not working and unavailable for work	1,696	0.0	0.0	1,565	0.1	0.1	1,460	0.1	0.1	1,434	0.1	0.1	1,369	0.0	0.0
Housemaker/housewife	1,696	1.0	0.3	1,565	1.0	0.3	1,460	0.8	0.3	1,434	1.4	0.3	1,369	2.6	0.5
Student	1,696	0.1	0.1	1,565	0.0	0.0	1,460	0.1	0.1	1,434	0.0	0.0	1,369	0.1	0.1
Unable to work -too old/retired/sick/disabled	1,696	23.5	1.2	1,565	26.0	1.2	1,460	26.6	1.3	1,434	24.2	1.2	1,369	30.6	1.4
Other	1,696	0.2	0.1	1,565	0.3	0.1	1,460	0.2	0.1	1,434	0.6	0.2	1,369	0.3	0.2
Earning non-farm income (%)	1,696	33.5	1.3	1,565	32.2	1.3	1,460	32.4	1.3	1,434	28.9	1.3	1,369	23.7	1.3

Source: Authors' calculation using NBS, 2006

Table A2.9 Main source of household cash income, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Food crop (%)	9,376	38.2	0.8	9,452	36.9	0.8	9,449	37.6	0.7	9,673	40.0	0.8	10,332	36.3	0.8
Livestock (%)	9,376	6.0	0.3	9,452	6.7	0.3	9,449	5.5	0.3	9,673	4.5	0.3	10,332	3.6	0.2
Livestock products (%)	9,376	0.7	0.1	9,452	0.8	0.1	9,449	0.8	0.1	9,673	1.1	0.1	10,332	1.8	0.2
Cash crops (%)	9,376	13.5	0.5	9,452	16.2	0.5	9,449	18.5	0.6	9,673	20.2	0.7	10,332	17.7	0.7
Forest products (%)	9,376	5.0	0.3	9,452	4.3	0.3	9,449	3.4	0.2	9,673	2.8	0.2	10,332	1.7	0.2
Business income (%)	9,376	7.6	0.4	9,452	8.5	0.3	9,449	8.8	0.4	9,673	9.5	0.4	10,332	12.3	0.4
Wages/salaries (%)	9,376	0.7	0.1	9,452	0.9	0.1	9,449	1.3	0.1	9,673	2.8	0.2	10,332	12.8	0.5
Other casual cash earnings (%)	9,376	19.8	0.6	9,452	18.0	0.5	9,449	16.6	0.5	9,673	12.8	0.5	10,332	8.7	0.4
Cash remittances (%)	9,376	4.9	0.3	9,452	4.2	0.2	9,449	3.7	0.2	9,673	2.9	0.2	10,332	2.6	0.2
Fishing (%)	9,376	2.4	0.2	9,452	2.6	0.3	9,449	2.8	0.3	9,673	2.2	0.2	10,332	1.4	0.2
Other (%)	9,376	1.2	0.2	9,452	0.8	0.1	9,449	0.9	0.1	9,673	1.0	0.1	10,332	1.0	0.1

Source: Authors' calculation using NBS, 2006

Table A2.10 Access to Drinking Water during Wet Season, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N	mean	std err
Distance (in km.)	9,391	1.0	0.0	9,466	1.0	0.0	9,464	1.0	0.0	9,681	0.9	0.0	10,343	0.7	0.0
Time to and from (in min.)	9,391	42.5	0.7	9,466	42.3	0.9	9,464	40.7	0.7	9,681	39.8	0.8	10,343	34.2	0.8
Time to and from:															
Within 15 min. from (%)	9,391	22.2	0.7	9,466	24.2	0.6	9,464	26.1	0.6	9,681	28.4	0.6	10,343	38.1	0.8
Within 15 - 30 min. from (%)	9,391	38.2	0.7	9,466	38.6	0.7	9,464	37.9	0.7	9,681	36.8	0.7	10,343	32.3	0.7
Within 30 - 60 min. from (%)	9,391	28.8	0.7	9,466	26.1	0.6	9,464	25.9	0.6	9,681	24.8	0.6	10,343	22.5	0.6
Within 60 - 90 min. from (%)	9,391	4.1	0.3	9,466	4.1	0.3	9,464	3.8	0.2	9,681	3.8	0.3	10,343	2.4	0.2
Within 90 - 120 min. from (%)	9,391	3.7	0.3	9,466	3.8	0.3	9,464	3.5	0.3	9,681	3.2	0.3	10,343	2.2	0.2
More than 120 min. from (%)	9,391	3.0	0.3	9,466	3.2	0.3	9,464	2.8	0.2	9,681	2.9	0.3	10,343	2.4	0.3
Type of water source in wet season (%)															
Piped water	9,391	0.3	0.1	9,466	7.8	0.5	9,464	20.9	0.8	9,681	31.7	0.9	10,343	49.0	1.0
Protected well	9,391	8.4	0.5	9,466	14.9	0.7	9,464	15.5	0.6	9,681	14.3	0.6	10,343	12.6	0.6
Protected spring	9,391	2.1	0.2	9,466	3.7	0.4	9,464	4.1	0.3	9,681	4.4	0.4	10,343	4.3	0.4
Unprotected well	9,391	53.0	1.0	9,466	32.1	0.8	9,464	22.6	0.7	9,681	17.6	0.6	10,343	10.3	0.5
Unprotected spring	9,391	12.0	0.6	9,466	16.3	0.7	9,464	14.9	0.6	9,681	14.5	0.7	10,343	11.0	0.6
Surface water	9,391	18.0	0.8	9,466	18.0	0.7	9,464	15.5	0.7	9,681	12.0	0.6	10,343	7.8	0.5
Covered rain catchment	9,391	0.2	0.1	9,466	0.5	0.1	9,464	0.7	0.2	9,681	1.0	0.2	10,343	1.2	0.2
Uncovered rain catchment	9,391	5.7	0.5	9,466	6.0	0.5	9,464	4.5	0.4	9,681	3.1	0.3	10,343	2.5	0.3
Water vendor	9,391	0.0	0.0	9,466	0.0	0.0	9,464	0.1	0.0	9,681	0.2	0.1	10,343	0.2	0.1
Water truck	9,391	0.0	0.0	9,466	0.1	0.1	9,464	0.1	0.0	9,681	0.2	0.1	10,343	0.2	0.1
Bottled water	9,391	0.0	0.0	9,466	0.0	0.0	9,464	0.0	0.0	9,681	0.0	0.0	10,343	0.0	0.0
Other source	9,391	0.4	0.1	9,466	0.6	0.1	9,464	1.0	0.2	9,681	1.1	0.2	10,343	1.0	0.2

Source: Authors' calculation using NBS, 2006

Table A2.11 Access to Drinking Water during Dry Season, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		Std err	N		std err	N		std err	N		std err	N		std err
Distance to (in km.)	9,391	1.6	0.0	9,466	1.5	0.0	9,464	1.4	0.0	9,681	1.3	0.0	10,343	1.0	0.0
Time to (in min.)	9,391	66.2	1.4	9,466	63.1	1.3	9,464	59.2	1.2	9,681	55.5	1.2	10,343	47.0	1.2
Time to and from:															
Within 15 min. (%)	9,391	16.1	0.6	9,466	18.1	0.6	9,464	20.1	0.6	9,681	22.4	0.6	10,343	31.4	0.8
Within 15 - 30 min. (%)	9,391	30.0	0.7	9,466	30.9	0.6	9,464	32.2	0.6	9,681	32.1	0.6	10,343	29.9	0.7
Within 30 - 60 min. (%)	9,391	28.7	0.7	9,466	27.1	0.6	9,464	26.7	0.6	9,681	26.5	0.6	10,343	24.5	0.6
Within 60 - 90 min. (%)	9,391	6.1	0.3	9,466	6.5	0.4	9,464	5.5	0.3	9,681	5.5	0.3	10,343	3.7	0.3
Within 90 - 120 min. (%)	9,391	8.0	0.4	9,466	7.6	0.4	9,464	6.9	0.4	9,681	5.8	0.3	10,343	4.4	0.3
More than 120 min. (%)	9,391	11.0	0.6	9,466	9.8	0.5	9,464	8.6	0.4	9,681	7.7	0.5	10,343	6.1	0.4
Type of water source in dry season (%)															
Piped water	9,391	0.9	0.1	9,466	9.6	0.6	9,464	22.4	0.8	9,681	32.4	0.9	10,343	48.5	1.0
Protected well	9,391	9.0	0.5	9,466	15.4	0.7	9,464	16.1	0.7	9,681	14.5	0.6	10,343	13.1	0.6
Protected spring	9,391	2.1	0.2	9,466	3.8	0.4	9,464	4.3	0.3	9,681	4.7	0.4	10,343	4.9	0.4
Unprotected well	9,391	53.6	1.0	9,466	32.4	0.8	9,464	22.3	0.7	9,681	17.5	0.6	10,343	10.2	0.5
Unprotected spring	9,391	12.5	0.7	9,466	16.8	0.8	9,464	15.6	0.7	9,681	15.7	0.7	10,343	12.4	0.6
Surface water	9,391	19.4	0.8	9,466	19.6	0.7	9,464	17.2	0.7	9,681	13.2	0.6	10,343	9.2	0.5
Covered rain catchment	9,391	0.1	0.0	9,466	0.3	0.1	9,464	0.4	0.1	9,681	0.4	0.1	10,343	0.5	0.1
Uncovered rain catchment	9,391	2.0	0.3	9,466	1.8	0.3	9,464	1.3	0.2	9,681	0.9	0.1	10,343	0.4	0.1
Water vendor	9,391	0.0	0.0	9,466	0.0	0.0	9,464	0.2	0.1	9,681	0.2	0.1	10,343	0.4	0.1
Water truck	9,391	0.0	0.0	9,466	0.0	0.0	9,464	0.1	0.0	9,681	0.2	0.1	10,343	0.4	0.1
Bottled water	9,391	0.0	0.0	9,466	0.0	0.0	9,464	0.0	0.0	9,681	0.0	0.0	10,343	0.0	0.0
Other source	9,391	0.3	0.1	9,466	0.3	0.1	9,464	0.3	0.1	9,681	0.3	0.1	10,343	0.1	0.1

Source: Authors' calculation using NBS, 2006

Table A2.12. Use of toilet facilities, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		Std err	N		std err	N		std err	N		std err	N		std err
No toilet facilities/bush (%)	9,391	19.4	0.7	9,466	9.5	0.5	9,464	5.4	0.3	9,681	3.0	0.2	10,343	1.1	0.1
Flush toilet (%)	9,391	1.9	0.3	9,466	2.7	0.4	9,464	2.6	0.4	9,681	2.3	0.3	10,343	2.4	0.2
Pit latrine (traditional) (%)	9,391	78.6	0.7	9,466	87.5	0.6	9,464	91.4	0.5	9,681	93.8	0.4	10,343	90.1	0.5
Ventilated pit latrine (VIP) (%)	9,391	0.0	0.0	9,466	0.2	0.1	9,464	0.4	0.1	9,681	0.8	0.1	10,343	6.3	0.4

Source: Authors' calculation using NBS, 2006

Table A2.13. Type of roofing materials, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Metal sheets (%)	9,391	1.1	0.1	9,466	12.1	0.5	9,464	32.4	0.7	9,681	55.8	0.7	10,343	84.2	0.5
Tiles (%)	9,391	0.2	0.0	9,466	0.9	0.1	9,464	0.9	0.2	9,681	1.0	0.1	10,343	0.9	0.1
Concrete (%)	9,391	0.1	0.0	9,466	0.4	0.1	9,464	0.3	0.1	9,681	0.3	0.1	10,343	0.1	0.1
Asbestos sheets (%)	9,391	0.0	0.0	9,466	0.3	0.1	9,464	0.3	0.1	9,681	0.7	0.1	10,343	0.7	0.1
Grass/Leaves (%)	9,391	80.0	0.8	9,466	64.4	0.8	9,464	46.7	0.8	9,681	32.2	0.7	10,343	10.8	0.4
Mud (%)	9,391	18.3	0.8	9,466	21.7	0.7	9,464	19.2	0.7	9,681	9.9	0.5	10,343	3.1	0.3
Others (%)	9,391	0.4	0.1	9,466	0.3	0.1	9,464	0.2	0.1	9,681	0.1	0.0	10,343	0.1	0.0

Source: Authors' calculation using NBS, 2006

Table A2.14. Ownership of Household Assets, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Radio (%)	9,391	27.9	0.6	9,466	41.6	0.7	9,464	51.9	0.7	9,681	66.4	0.7	10,343	85.0	0.5
Land line telephone (%)	9,391	0.0	0.0	9,466	0.0	0.0	9,464	0.1	0.0	9,681	0.3	0.1	10,343	1.6	0.1
Mobile telephone (%)	9,391	0.1	0.0	9,466	0.2	0.1	9,464	0.4	0.1	9,681	1.1	0.1	10,343	8.1	0.4
Iron (%)	9,391	2.4	0.2	9,466	5.7	0.3	9,464	10.7	0.4	9,681	22.2	0.5	10,343	55.4	0.7
Wheel barrow (%)	9,391	0.7	0.1	9,466	2.2	0.2	9,464	3.0	0.3	9,681	5.4	0.3	10,343	17.7	0.6
Bicycle (%)	9,391	26.2	0.6	9,466	36.0	0.7	9,464	41.2	0.7	9,681	50.1	0.7	10,343	61.1	0.8
Vehicle (%)	9,391	0.1	0.0	9,466	0.2	0.1	9,464	0.5	0.1	9,681	0.9	0.1	10,343	4.1	0.2
Television (%)	9,391	0.0	0.0	9,466	0.1	0.0	9,464	0.3	0.1	9,681	0.6	0.1	10,343	4.4	0.3

Source: Authors' calculation using NBS, 2006

Table A2.15. Number of persons per room, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Average number of persons per room	9,391	2.8	0.0	9,466	2.5	0.0	9,464	2.3	0.0	9,681	2.1	0.0	10,343	1.8	0.0
Number of persons per room (%)															
One	9,391	15.8	0.5	9,466	16.9	0.5	9,464	22.2	0.5	9,681	23.8	0.5	10,343	31.1	0.6
Two	9,391	30.6	0.6	9,466	37.2	0.6	9,464	38.6	0.6	9,681	40.2	0.6	10,343	43.2	0.6
Three	9,391	26.0	0.5	9,466	24.4	0.5	9,464	21.5	0.5	9,681	21.2	0.5	10,343	17.6	0.5
Four	9,391	13.2	0.4	9,466	11.2	0.4	9,464	9.6	0.3	9,681	8.7	0.3	10,343	5.4	0.3
Five	9,391	5.8	0.3	9,466	4.6	0.2	9,464	4.0	0.2	9,681	3.1	0.2	10,343	1.6	0.1
Six or more	9,391	8.6	0.4	9,466	5.6	0.3	9,464	4.0	0.2	9,681	3.0	0.2	10,343	1.1	0.1

Source: Authors' calculation using NBS, 2006

TableA2.16. Number of daily meals and meat consumption, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Number of meals per day	9,391	2.0	0.0	9,466	2.3	0.0	9,464	2.3	0.0	9,681	2.5	0.0	10,343	2.7	0.0
1 meal per day (%)	9,391	5.5	0.4	9,466	4.2	0.3	9,464	3.7	0.3	9,681	2.6	0.3	10,343	1.5	0.2
2 meals per day (%)	9,391	84.8	0.5	9,466	64.1	0.7	9,464	58.2	0.7	9,681	47.3	0.8	10,343	26.9	0.8
Three or more meals per day (%)	9,391	9.7	0.4	9,466	31.7	0.7	9,464	38.2	0.7	9,681	50.1	0.8	10,343	71.6	0.8
Weekly meat consumption	9,391	0.4	0.0	9,466	0.8	0.0	9,464	1.1	0.0	9,681	1.3	0.0	10,343	1.8	0.0
Less than 1 time per week (%)	9,391	71.7	0.7	9,466	47.3	0.8	9,464	35.2	0.7	9,681	26.0	0.6	10,343	10.7	0.4
1 time per week (%)	9,391	19.5	0.6	9,466	31.4	0.7	9,464	36.1	0.7	9,681	38.6	0.7	10,343	35.6	0.7
2 times per week (%)	9,391	6.6	0.3	9,466	15.3	0.5	9,464	19.1	0.5	9,681	23.1	0.5	10,343	31.8	0.6
3 times per week (%)	9,391	1.6	0.1	9,466	4.3	0.3	9,464	6.5	0.3	9,681	8.2	0.3	10,343	14.0	0.5
4 times per week (%)	9,391	0.3	0.1	9,466	1.0	0.1	9,464	1.7	0.1	9,681	2.3	0.2	10,343	4.8	0.3
5 times or more per week (%)	9,391	0.3	0.1	9,466	0.7	0.1	9,464	1.4	0.1	9,681	1.7	0.2	10,343	3.1	0.2

Source: Authors' calculation using NBS, 2006

Table A2.17 Household Food Security, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Never	9,391	32.0	0.8	9,466	36.7	0.8	9,464	41.1	0.8	9,681	48.1	0.8	10,343	62.6	0.8
Seldom	9,391	31.5	0.7	9,466	33.5	0.7	9,464	33.8	0.7	9,681	33.4	0.7	10,343	26.1	0.7
Sometimes	9,391	8.0	0.4	9,466	7.7	0.3	9,464	7.8	0.4	9,681	6.5	0.3	10,343	5.1	0.3
Often	9,391	17.6	0.6	9,466	14.0	0.5	9,464	10.0	0.4	9,681	7.1	0.3	10,343	3.7	0.3
Always	9,391	10.9	0.5	9,466	8.1	0.4	9,464	7.3	0.4	9,681	4.9	0.3	10,343	2.5	0.2

Source: Authors' calculation using NBS, 2006

Table A3.1. Access to Agricultural land, by type of ownership, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Total land in acres	9,391	5.3	0.1	9,466	5.8	0.1	9,464	6.1	0.1	9,681	6.6	0.1	10,343	6.7	0.2
Leased/certified ownership	9,391	0.3	0.0	9,466	0.3	0.0	9,464	0.3	0.0	9,681	0.4	0.0	10,343	0.4	0.0
Owned under customary law	9,391	3.7	0.1	9,466	4.1	0.1	9,464	4.3	0.1	9,681	4.4	0.1	10,343	4.2	0.1
Bought from others	9,391	0.8	0.0	9,466	0.8	0.0	9,464	0.9	0.0	9,681	1.1	0.1	10,343	1.3	0.0
Rented from others	9,391	0.2	0.0	9,466	0.2	0.0	9,464	0.2	0.0	9,681	0.3	0.0	10,343	0.4	0.0
Borrowed from others	9,391	0.2	0.0	9,466	0.2	0.0	9,464	0.2	0.0	9,681	0.2	0.0	10,343	0.2	0.0
Share-cropped from others	9,391	0.0	0.0	9,466	0.0	0.0	9,464	0.0	0.0	9,681	0.0	0.0	10,343	0.1	0.0
Under other form of tenure	9,391	0.2	0.0	9,466	0.2	0.0	9,464	0.2	0.0	9,681	0.2	0.0	10,343	0.2	0.0

Source: Authors' calculation using NBS, 2006

Table A3.2. Availability of Agricultural land, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
All land available during 2002/03 (%)	9,277	59.4	0.8	9,397	61.5	0.7	9,397	62.0	0.7	9,653	64.0	0.7	10,269	68.4	0.7
Was land sufficient (%)	9,252	53.9	0.7	9,368	53.6	0.7	9,368	53.2	0.7	9,631	54.4	0.7	10,238	52.6	0.8
Female customary land rights (%)	9,249	19.3	0.7	9,368	19.2	0.6	9,368	20.3	0.6	9,618	19.1	0.6	10,241	17.8	0.6

Source: Authors' calculation using NBS, 2006

Table A3.3 Ownership or rent of Agricultural Equipment, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Hand hoe (%)	9,391	98.2	0.2	9,466	98.6	0.2	9,464	98.9	0.1	9,681	99.2	0.1	10,343	98.9	0.1
Hand powered sprayer (%)	9,391	5.8	0.3	9,466	9.6	0.4	9,464	11.1	0.5	9,681	16.1	0.6	10,343	28.7	0.8
Oxen (%)	9,391	19.1	0.7	9,466	24.8	0.6	9,464	25.1	0.6	9,681	25.8	0.6	10,343	24.2	0.7
Ox plough (%)	9,391	18.4	0.6	9,466	23.9	0.6	9,464	24.3	0.6	9,681	24.8	0.6	10,343	23.5	0.7
Ox seed planter (%)	9,391	0.1	0.0	9,466	0.2	0.0	9,464	0.3	0.1	9,681	0.3	0.1	10,343	0.3	0.1
Ox cart (%)	9,391	2.5	0.2	9,466	4.5	0.3	9,464	5.0	0.3	9,681	5.8	0.4	10,343	6.3	0.4
Tractor (%)	9,391	0.6	0.1	9,466	0.9	0.1	9,464	1.1	0.1	9,681	2.4	0.2	10,343	8.7	0.5
Tractor plough (%)	9,391	0.5	0.1	9,466	0.7	0.1	9,464	1.0	0.1	9,681	2.1	0.2	10,343	7.5	0.5
Tractor harrow (%)	9,391	0.0	0.0	9,466	0.0	0.0	9,464	0.1	0.0	9,681	0.3	0.1	10,343	1.1	0.2
Shellers/threshers (%)	9,391	0.1	0.0	9,466	0.3	0.1	9,464	0.8	0.2	9,681	1.5	0.2	10,343	4.7	0.5

Source: Authors' calculation using NBS, 2006

Table A3.4 Financing of Agricultural Equipment, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Sales of farm products (%)	13,615	70.6	0.8	15,305	72.1	0.7	15,666	73.0	0.7	16,745	74.8	0.7	19,901	68.5	0.8
Other income generating activities (%)	13,615	19.8	0.7	15,305	19.1	0.6	15,666	19.5	0.6	16,745	18.9	0.6	19,901	25.6	0.8
Remittances (%)	13,615	4.9	0.3	15,305	3.8	0.3	15,666	3.3	0.3	16,745	2.9	0.2	19,901	2.1	0.2
Bank loan (%)	13,615	0.2	0.0	15,305	0.2	0.0	15,666	0.3	0.0	16,745	0.2	0.0	19,901	0.3	0.0
Credit (%)	13,615	0.1	0.0	15,305	0.1	0.0	15,666	0.2	0.0	16,745	0.1	0.1	19,901	0.3	0.1
Others (%)	13,615	4.4	0.3	15,305	4.6	0.4	15,666	3.7	0.3	16,745	3.1	0.2	19,901	3.3	0.3

Source: Authors' calculation using NBS, 2006

Table A3.5 Livestock ownership, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Cattle (%)	9,391	18.8	0.5	9,466	23.5	0.5	9,464	24.2	0.6	9,681	27.7	0.6	10,343	35.1	0.7
Goats (%)	9,390	24.7	0.6	9,466	28.4	0.6	9,464	27.9	0.6	9,681	30.4	0.6	10,343	31.9	0.7
Sheep (%)	9,391	7.7	0.4	9,466	10.4	0.4	9,464	10.1	0.4	9,681	10.9	0.4	10,343	12.9	0.5
Pigs (%)	9,391	4.1	0.3	9,466	4.8	0.3	9,464	5.8	0.3	9,681	8.7	0.4	10,343	13.0	0.5

Source: Authors' calculation using NBS, 2006

Table A3.6. Herd size for different types of animals, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Average herd size (household with animals)															
Cattle	1,901	14.3	0.8	2,230	17.7	1.5	2,251	13.5	0.7	2,531	12.7	0.6	3,375	10.3	0.7
Sheep	866	9.8	0.9	1,054	9.8	0.8	973	8.8	1.3	1,020	6.4	0.4	1,193	7.3	0.9
Goats	2,329	8.1	0.3	2,598	9.6	0.4	2,555	8.8	0.6	2,796	8.0	0.2	3,100	8.1	0.2
Pigs	344	2.3	0.1	406	2.6	0.2	500	4.4	1.8	763	2.8	0.2	1,217	3.7	0.1
Poultry	8,096	7.1	0.3	8,383	7.8	0.3	8,367	8.1	0.3	8,634	9.0	0.3	9,115	10.4	0.3

Source: Authors' calculation using NBS, 2006

Table A3.7. Herd differentiation, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Cattle with 3 other animal types (%)	3,250	0.9	0.2	3,650	0.6	0.1	3,754	1.0	0.2	4,283	1.2	0.2	5,322	1.8	0.2
Cattle with 2 other animal types (%)	3,250	15.2	0.7	3,650	18.6	0.8	3,754	16.9	0.7	4,283	14.9	0.6	5,322	15.8	0.6
Cattle with 1 other animal types (%)	3,250	21.1	0.8	3,650	22.4	0.8	3,754	22.0	0.8	4,283	24.6	0.7	5,322	25.6	0.7
Cattle only (%)	3,250	17.4	0.8	3,650	17.3	0.7	3,754	19.2	0.8	4,283	18.6	0.7	5,322	21.3	0.8
No cattle with 3 other type of households (%)	3,250	0.2	0.1	3,650	0.3	0.1	3,754	0.3	0.1	4,283	0.5	0.1	5,322	0.8	0.1
No cattle with 2 other type of households (%)	3,250	5.6	0.5	3,650	6.0	0.5	3,754	6.2	0.4	4,283	7.3	0.5	5,322	6.6	0.4
No cattle with 1 other type of households (%)	3,250	39.6	1.0	3,650	34.7	0.9	3,754	34.4	0.9	4,283	32.8	0.8	5,322	28.1	0.8

Table A3.8 Use of Improved Farming techniques, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Any type of improved technique used (%)	9,391	31.8	0.8	9,466	41.0	0.8	9,464	45.0	0.8	9,681	55.1	0.8	10,343	68.7	0.8
Chemical fertilisers (%)	9,391	4.2	0.3	9,466	6.0	0.3	9,464	8.1	0.4	9,681	13.6	0.5	10,343	25.6	0.8
Farm yard menure (%)	9,391	14.7	0.5	9,466	20.4	0.6	9,464	23.4	0.6	9,681	30.5	0.7	10,343	41.6	0.9
Compost (%)	9,391	3.7	0.4	9,466	5.1	0.4	9,464	6.1	0.4	9,681	6.9	0.5	10,343	7.6	0.5
Pesticide/fungicide (%)	9,391	9.2	0.5	9,466	12.8	0.5	9,464	13.4	0.5	9,681	19.6	0.6	10,343	27.7	0.8
Herbicide (%)	9,391	0.5	0.1	9,466	0.8	0.1	9,464	1.1	0.1	9,681	1.5	0.2	10,343	4.0	0.3
Improved seeds (%)	9,391	9.9	0.5	9,466	13.5	0.5	9,464	15.2	0.6	9,681	20.1	0.6	10,343	32.7	0.8
Other (%)	9,391	2.1	0.3	9,466	2.6	0.3	9,464	2.3	0.2	9,681	2.1	0.3	10,343	1.5	0.2
Plan to use inputs next year (%)	9,391	54.6	0.9	9,466	63.0	0.8	9,464	65.5	0.8	9,681	71.8	0.7	10,343	81.1	0.7

Source: Authors' calculation using NBS, 2006

Table A3.9. Use of Irrigation, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Use of irrigation (%)	9,384	3.9	0.3	9,461	5.5	0.4	9,458	6.9	0.4	9,674	9.3	0.5	10,337	14.1	0.7
Source of irrigation water (%)															
River	400	47.7	3.4	535	48.4	2.6	679	48.9	2.6	912	49.7	2.4	1,465	49.4	2.7
Lake	400	1.0	0.5	535	1.8	0.6	679	1.6	0.4	912	1.4	0.5	1,465	1.8	0.3
Dam	400	5.2	1.1	535	8.3	1.2	679	5.3	0.9	912	5.5	0.9	1,465	3.2	0.5
Well	400	20.9	2.3	535	17.4	1.8	679	17.6	1.6	912	14.7	1.4	1,465	10.0	1.1
Borehole	400	2.1	0.9	535	0.5	0.4	679	0.8	0.5	912	0.5	0.2	1,465	0.5	0.2
Canal	400	23.1	2.9	535	23.2	2.5	679	25.3	2.2	912	27.6	2.3	1,465	32.5	2.6
Piped water	400	0.0	0.0	535	0.5	0.3	679	0.4	0.1	912	0.6	0.3	1,465	2.6	0.6
Method used for obtaining irrigation water (%)															
Gravity	400	52.1	3.1	535	54.3	2.8	679	53.5	2.5	912	57.8	2.2	1,465	65.6	2.0
Bucket	400	44.3	3.1	535	43.9	2.8	679	43.6	2.4	912	40.0	2.2	1,465	29.1	1.9
Hand pump	400	0.2	0.2	535	0.1	0.1	679	0.7	0.3	912	0.4	0.2	1,465	1.4	0.4
Motor pump	400	1.2	0.5	535	0.7	0.4	679	0.6	0.3	912	0.4	0.2	1,465	1.2	0.3
Other	400	1.8	0.6	535	0.6	0.2	679	1.4	0.5	912	0.9	0.4	1,465	1.3	0.4
Irrigation method (%)															
Gravity	394	51.0	3.2	525	53.6	2.9	671	50.8	2.5	891	54.0	2.4	1,434	64.5	2.0
Sprinkler	394	1.5	0.7	525	2.4	0.7	671	2.2	0.6	891	1.6	0.5	1,434	1.3	0.3
Water hose	394	0.9	0.5	525	0.4	0.3	671	0.9	0.4	891	0.6	0.3	1,434	2.3	0.5
Bucket	394	46.6	3.3	525	43.6	2.8	671	46.1	2.5	891	43.8	2.4	1,434	31.9	1.9
Area under irrigation (in acres)	399	1.2	0.1	534	1.3	0.1	678	1.9	0.6	912	1.4	0.1	1,460	1.7	0.1
Area under irrigation during past year (in acres)	396	0.8	0.1	532	0.9	0.1	674	0.9	0.1	907	1.0	0.1	1,454	1.3	0.1
Erosion control (%)	9,391	5.3	0.4	9,465	6.5	0.4	9,464	8.4	0.4	9,681	11.7	0.5	10,343	17.2	0.7

Source: Authors' calculation using NBS, 2006

Table A4.1. Distance to General Public Services or Service Centres, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N	mean	std err	N	mean	std err	N	mean	std err	N	mean	std err	N	mean	std err
Primary school	9,345	3.0	0.2	9,414	2.8	0.2	9,428	2.8	0.3	9,627	2.2	0.2	301	1.9	0.2
Secondary school	9,333	22.7	0.6	9,397	20.5	0.5	9,406	18.4	0.4	9,624	15.9	0.4	304	12.5	0.3
Health centre/dispensary	9,328	8.7	0.3	9,401	7.8	0.3	9,410	6.8	0.2	9,617	6.3	0.2	248	5.1	0.2
Hospital	9,335	47.1	0.9	9,405	43.5	0.8	9,419	41.3	0.8	9,630	37.2	0.7	310	31.9	0.7
District capital	9,336	57.2	1.0	9,412	53.1	0.9	9,419	50.1	0.8	9,633	47.1	0.8	306	41.0	0.8
Regional capital	9,244	137.7	1.7	9,315	127.9	1.5	9,309	122.1	1.3	9,538	122.3	1.3	177	106.2	1.4
Feeder road	9,187	2.1	0.2	9,257	1.9	0.1	9,261	1.5	0.1	9,483	1.8	0.2	81	1.3	0.2
All weather road	9,246	7.7	0.4	9,322	6.7	0.3	9,333	5.8	0.3	9,550	5.2	0.3	148	3.5	0.3
Tarmac road	8,647	72.3	1.6	8,761	67.2	1.3	8,806	63.9	1.2	9,159	58.9	1.2	9,974	47.6	1.2
Primary market	8,937	11.0	0.5	8,983	10.4	0.5	8,987	9.6	0.4	9,189	9.1	0.4	9,746	7.8	0.3
Secondary market	8,436	23.3	0.7	8,443	21.8	0.6	8,434	21.2	0.6	8,592	20.9	0.6	9,183	19.6	0.7
Tertiary market	9,143	47.5	1.1	9,226	43.4	0.9	9,243	41.0	0.9	9,438	39.2	0.9	89	35.4	1.0

Source: Authors' calculation using NBS, 2006

Table A4.2 Distance to Livestock markets, 2002/03

	Lowest 20%			Second 20%			Middle 20%			Fourth 20%			Highest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Distance to primary market (in km.)	1,735	15.1	0.7	1,950	14.2	0.6	2,080	13.6	0.5	2,161	12.6	0.5	2451	11.1	0.6
Distance to secondary market (in km.)	1,036	22.6	1.3	1,206	20.3	1.0	1,276	20.0	1.0	1,461	16.9	0.9	1815	15.0	0.8

Source: Authors' calculation using NBS, 2006

Table A4.3 Extension Advice Received, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
On crop production (%)	9,175	23.3	0.8	9,308	28.8	0.8	9,371	33.2	0.8	9,609	39.4	0.9	10,150	50.1	1.0
On livestock keeping (%)	2,644	16.4	1.0	3,061	24.4	1.1	3,115	26.2	1.1	3,567	32.6	1.1	4,646	49.0	1.3

Source: Authors' calculation using NBS, 2006

Table A4.4 Use of Crop Extension Services by Type of Extension Provider, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Government (%)	2,187	93.0	0.7	2,705	94.8	0.5	3,124	93.7	0.6	3,779	94.5	0.5	5,085	95.7	0.4
Ngo/development project (%)	2,187	15.2	1.3	2,705	11.6	0.9	3,124	14.8	1.2	3,779	15.3	1.0	5,085	16.6	0.9
Cooperative (%)	2,187	3.3	0.7	2,705	2.9	0.6	3,124	2.5	0.4	3,779	3.7	0.5	5,085	5.6	0.7
Large scale farmer (%)	2,187	4.6	0.7	2,705	3.3	0.5	3,124	3.5	0.5	3,779	3.7	0.4	5,085	4.3	0.5
Other (%)	2,187	3.8	0.6	2,705	2.9	0.4	3,124	2.6	0.4	3,779	3.4	0.5	5,085	2.8	0.4

Source: Authors' calculation using NBS, 2006

Table A4.5. Number of Crop Extension Messages Adopted by Type of Extension Provider, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Government	2,048	4.1	0.2	2,563	4.1	0.2	2,931	4.3	0.2	3,559	4.7	0.2	4,856	5.1	0.2
Ngo/development project	307	2.9	0.3	294	3.1	0.4	433	3.1	0.4	576	3.6	0.4	855	3.5	0.3
Cooperative	67	2.4	0.2	71	1.7	0.2	74	2.6	0.8	148	3.3	0.6	284	3.6	0.6
Large scale farmer	87	2.5	0.3	81	3.3	0.8	102	2.5	0.3	144	2.5	0.5	264	2.4	0.2
Other	77	2.3	0.5	77	4.4	1.3	77	2.9	0.4	130	3.0	0.5	146	5.8	1.7

Source: Authors' calculation using NBS, 2006

Table A4.6 Appreciation of the Quality of Crop Extension Services by Type of Extension Provider, 2002/03

		Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
		N		std err	N		std err	N		std err	N		std err	N		std err
Government	Good (%)	2,035	76.4	1.5	2,547	78.0	1.2	2,914	78.1	1.2	3,537	80.8	1.1	4,824	81.7	1.0
	Poor (%)	2,035	2.6	0.4	2,547	2.3	0.4	2,914	2.2	0.4	3,537	2.5	0.6	4,824	1.8	0.4
Ngo/development project	Good (%)	304	72.3	3.7	295	82.1	2.8	426	73.9	4.4	577	77.7	2.4	847	78.3	2.1
	Poor (%)	304	6.0	1.8	295	2.6	1.1	426	2.0	0.7	577	3.2	0.7	847	3.2	0.7
Cooperative	Good (%)	67	63.2	4.3	72	58.1	5.3	73	69.9	5.6	150	62.4	3.4	281	74.3	3.3
	Poor (%)	67	16.2	2.4	72	17.5	1.8	73	4.5	0.3	150	6.8	2.5	281	3.3	0.9
Large scale farmer	Good (%)	84	63.2	4.6	80	71.2	5.2	99	60.8	3.1	141	72.6	2.8	259	69.2	3.6
	Poor (%)	84	11.0	2.7	80	2.6	1.6	99	3.0	1.8	141	2.5	1.1	259	3.2	1.3
Other	Good (%)	78	64.6	6.5	77	59.4	5.7	74	66.7	6.3	129	71.0	5.2	144	85.2	3.6
	Poor (%)	78	5.2	2.9	77	6.8	2.3	74	0.0	0.0	129	4.6	0.7	144	5.2	2.7

Source: Authors' calculation using NBS, 2006

Table A4.7. Use of Livestock Extension Services by Type of Extension Provider, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Government	683	96.9	0.9	1,042	97.8	0.5	1,205	97.5	0.5	1,619	96.5	0.5	2,909	97.7	0.3
Ngo/development project	683	7.0	1.2	1,042	5.9	0.8	1,205	6.8	1.0	1,619	8.9	1.0	2,909	10.0	0.9
Cooperative	683	0.5	0.3	1,042	0.5	0.3	1,205	0.7	0.2	1,619	1.0	0.3	2,909	1.2	0.2
Large scale farmer	683	1.2	0.4	1,042	1.6	0.4	1,205	1.8	0.5	1,619	1.9	0.4	2,909	1.7	0.3
Other	683	1.5	0.5	1,042	2.6	0.6	1,205	2.2	0.6	1,619	3.3	0.6	2,909	3.1	0.4

Source: Authors' calculation using NBS, 2006

Table A4.8 Number of Livestock Extension Messages Adopted by Type of Extension Provider, 2002/03

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Government	607	3.6	0.3	952	4.4	0.4	1,110	4.3	0.3	1,476	5.1	0.4	2,675	5.9	0.4
Ngo/development project	31	3.2	0.3	54	3.9	1.3	66	3.8	1.2	122	4.5	0.6	265	6.7	1.0
Cooperative	2	6.7	0.0	4	3.0	0.3	7	3.6	0.5	15	3.4	0.1	36	5.0	0.4
Large scale farmer	7	2.5	0.4	14	2.0	0.1	12	4.9	0.3	21	4.0	1.3	48	4.1	0.7
Other	9	2.4	0.2	17	2.5	0.0	23	3.3	0.1	34	4.8	1.0	91	6.2	1.7

Source: Authors' calculation using NBS, 2006

Table A4.9 Appreciation of the Quality of Livestock Extension Services by Type of Extension Provider, 2002/03

		Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
		N		std err	N		std err	N		std err	N		std err	N		std err
Government	Good (%)	577	78.9	2.7	897	81.9	1.7	1,032	81.3	1.6	1,394	85.7	1.3	2,503	87.7	1.0
	Poor (%)	577	1.8	0.6	897	2.1	0.5	1,032	1.9	0.5	1,394	1.0	0.3	2,503	0.8	0.2
Ngo/development project	Good (%)	31	77.1	1.8	43	73.6	5.3	54	70.2	4.8	94	86.3	4.0	202	90.0	1.9
	Poor (%)	31	14.1	0.3	43	8.4	4.9	54	4.8	1.7	94	0.8	0.8	202	1.5	0.6
Cooperative	Good (%)	2	66.2	0.0	1	0.0	0.0	2	60.0	0.0	10	68.2	0.0	24	78.1	4.5
	Poor (%)	2	0.0	0.0	1	100.0	0.0	2	0.0	0.0	10	0.0	0.0	24	6.0	0.2
Large scale farmer	Good (%)	5	29.4	23.3	9	90.3	0.0	13	66.4	1.7	16	74.4	6.2	36	81.7	5.0
	Poor (%)	5	24.0	23.8	9	5.7	0.0	13	0.0	0.0	16	7.0	6.8	36	0.0	0.0
Other	Good (%)	4	100.0	0.0	9	56.1	0.0	5	70.5	0.0	20	76.7	9.2	25	51.4	10.0
	Poor (%)	4	0.0	0.0	9	11.4	0.0	5	8.7	0.0	20	4.0	0.5	25	33.0	10.1

Source: Authors' calculation using NBS, 2006

Table A5.1 Male and Female Involvement in Farm Activities, 2002/03

	Lowest 20%			Second 20%			Middle 20%			Fourth 20%			Highest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Land clearing (%)															
Male	8,478	42.8	0.9	8,582	42.2	0.8	8,713	44.1	0.8	8,827	43.4	0.8	8,812	36.8	0.9
Female	8,478	14.5	0.5	8,582	11.6	0.4	8,713	9.8	0.4	8,827	8.3	0.4	8,812	7.0	0.4
both sexes	8,478	40.6	0.9	8,582	43.7	0.9	8,713	43.9	0.9	8,827	44.8	0.9	8,812	45.3	0.9
Soil preparation (%)															
Male	1,797	45.3	1.7	2,189	46.0	1.5	2,384	46.0	1.4	2,537	45.9	1.4	3,013	43.5	1.5
Female	1,797	6.9	0.7	2,189	5.4	0.5	2,384	4.8	0.5	2,537	4.7	0.5	3,013	4.2	0.5
both sexes	1,797	36.5	1.6	2,189	37.6	1.5	2,384	39.8	1.4	2,537	38.3	1.4	3,013	32.1	1.4
Crop processing (%)															
Male	6,882	9.0	0.5	7,005	7.2	0.4	7,064	7.9	0.4	7,207	7.2	0.4	7,365	6.4	0.3
Female	6,882	67.7	0.9	7,005	67.1	0.8	7,064	64.4	0.9	7,207	63.4	0.9	7,365	61.7	0.9
both sexes	6,882	22.8	0.8	7,005	25.1	0.8	7,064	27.2	0.8	7,207	28.5	0.8	7,365	29.2	0.9
Cattle marketing															
Male	1,008	79.9	1.7	1,242	79.3	1.5	1,382	77.5	1.4	1,515	78.1	1.3	1,942	74.9	1.4
Female	1,008	10.9	1.2	1,242	7.7	0.9	1,382	7.8	0.8	1,515	6.8	0.7	1,942	6.5	0.6
both sexes	1,008	9.0	1.3	1,242	12.9	1.3	1,382	14.6	1.3	1,515	14.8	1.2	1,942	18.2	1.4
Goat and sheep marketing (%)															
Male	1,219	71.9	1.6	1,465	74.0	1.4	1,560	75.0	1.3	1,679	74.2	1.3	1,977	70.0	1.5
Female	1,219	13.6	1.1	1,465	10.1	0.9	1,560	9.0	0.8	1,679	7.2	0.7	1,977	8.3	0.8
both sexes	1,219	14.3	1.4	1,465	15.8	1.2	1,560	15.9	1.1	1,679	18.5	1.2	1,977	21.0	1.5
Milking (%)															
Male	1,176	32.5	1.7	1,495	33.8	1.5	1,664	35.6	1.4	1,875	34.6	1.2	2,653	24.1	1.1
Female	1,176	53.0	1.8	1,495	46.8	1.6	1,664	38.4	1.4	1,875	39.6	1.3	2,653	50.8	1.5
both sexes	1,176	14.1	1.2	1,495	18.2	1.3	1,664	24.6	1.4	1,875	23.2	1.3	2,653	20.8	1.2

Table A5.1 Male and Female Involvement in Farm Activities, 2002/03 (continued)

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Harvesting (%)															
Male	8,676	4.8	0.3	8,903	4.2	0.3	8,961	4.9	0.3	9,236	4.7	0.2	9,719	5.0	0.3
Female	8,676	14.6	0.5	8,903	12.4	0.4	8,961	11.7	0.4	9,236	10.1	0.4	9,719	9.6	0.4
Both sexes	8,676	79.8	0.6	8,903	82.3	0.5	8,961	82.1	0.5	9,236	82.8	0.5	9,719	77.4	0.6
Crop processing (%)															
Male	6,893	7.9	0.4	7,095	6.8	0.4	7,037	7.6	0.4	7,179	7.9	0.4	7,319	7.6	0.4
Female	6,893	68.6	0.9	7,095	67.4	0.8	7,037	64.5	0.8	7,179	63.0	0.8	7,319	60.7	0.9
Both sexes	6,893	23.1	0.8	7,095	25.3	0.8	7,037	27.4	0.8	7,179	28.2	0.8	7,319	28.9	0.8
Crop marketing (%)															
Male	6,405	51.7	1.0	6,824	53.5	0.9	6,965	52.1	0.8	7,474	53.2	0.8	7,741	50.3	0.9
Female	6,405	20.2	0.6	6,824	17.8	0.6	6,965	17.7	0.5	7,474	15.6	0.5	7,741	17.1	0.6
Both sexes	6,405	28.0	1.0	6,824	28.6	0.8	6,965	30.1	0.8	7,474	30.9	0.8	7,741	32.2	0.9
Cattle rearing (%)															
Male	1,582	61.7	1.6	1,891	59.0	1.5	1,899	56.2	1.4	2,163	52.5	1.4	2,999	34.2	1.3
Female	1,582	7.0	0.8	1,891	6.9	0.7	1,899	7.6	0.7	2,163	7.1	0.6	2,999	10.4	0.9
Both sexes	1,582	30.7	1.6	1,891	33.8	1.5	1,899	36.0	1.4	2,163	39.6	1.4	2,999	52.4	1.5
Cattle herding (%)															
Male	1,805	56.3	1.6	2,115	51.8	1.4	2,035	51.5	1.4	2,117	51.1	1.4	2,041	43.1	1.4
Female	1,805	3.6	0.5	2,115	3.9	0.5	2,035	3.9	0.5	2,117	3.1	0.4	2,041	3.7	0.5
Both sexes	1,805	37.2	1.6	2,115	41.2	1.4	2,035	40.1	1.4	2,117	39.4	1.4	2,041	35.7	1.5
Cattle marketing (%)															
Male	1181	80.6	1.6	1367	82.1	1.3	1,328	76.0	1.5	1,426	77.6	1.3	1,787	73.4	1.4
Female	1181	9.6	1.1	1367	6.6	0.7	1,328	8.3	0.9	1,426	7.0	0.7	1,787	7.1	0.7
Both sexes	1181	9.6	1.3	1367	11.1	1.2	1,328	15.4	1.3	1,426	15.3	1.2	1,787	19.1	1.4

Table A5.1 Male and Female Involvement in Farm Activities, 2002/03 (continued)

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Goat/sheep rearing (%)															
Male	1893	53.8	1.5	2148	53.3	1.4	2,139	49.9	1.3	2,265	47.9	1.3	2,626	34.5	1.2
Female	1893	10.3	0.8	2148	8.4	0.7	2,139	7.9	0.6	2,265	7.7	0.6	2,626	8.8	0.7
Both sexes	1893	35.7	1.5	2148	38.1	1.4	2,139	41.9	1.3	2,265	44.0	1.4	2,626	55.1	1.5
Goat/sheep herding (%)															
Male	2113	47.9	1.5	2366	43.9	1.3	2,271	43.8	1.3	2,329	43.2	1.2	2,213	38.5	1.3
Female	2113	6.9	0.6	2366	6.2	0.6	2,271	5.3	0.5	2,329	4.2	0.5	2,213	5.3	0.6
Both sexes	2113	43.3	1.5	2366	46.8	1.3	2,271	48.0	1.3	2,329	48.5	1.3	2,213	45.2	1.4
Goat/sheep marketing (%)															
Male	1387	74.7	1.4	1583	75.2	1.3	1,504	72.8	1.4	1,587	74.4	1.3	1,839	68.3	1.6
Female	1387	12.0	1.0	1583	9.3	0.8	1,504	9.1	0.8	1,587	7.4	0.8	1,839	9.2	0.8
Both sexes	1387	13.0	1.2	1583	15.3	1.1	1,504	18.0	1.3	1,587	18.1	1.2	1,839	21.6	1.6
Milking (%)															
Male	1393	34.3	1.6	1641	35.0	1.4	1,596	35.6	1.3	1,803	33.5	1.2	2,430	22.3	1.0
Female	1393	48.8	1.7	1641	42.8	1.4	1,596	40.4	1.3	1,803	41.6	1.3	2,430	52.3	1.4
Both sexes	1393	16.3	1.3	1641	21.0	1.3	1,596	22.0	1.3	1,803	22.9	1.2	2,430	20.7	1.2
Pig rearing (%)															
Male	354	29.5	2.9	419	24.5	2.2	520	23.5	2.0	767	19.5	1.6	1,237	21.5	1.5
Female	354	22.6	2.2	419	17.3	1.8	520	23.2	2.1	767	16.2	1.5	1,237	19.5	1.5
Both sexes	354	47.5	3.2	419	57.9	2.6	520	53.1	2.7	767	63.6	2.0	1,237	57.3	2.0
Poultry keeping (%)															
Male	4790	18.5	0.9	5121	16.4	0.7	5,214	16.3	0.7	5,744	14.5	0.6	6,308	12.4	0.6
Female	4790	25.9	0.9	5121	26.3	0.9	5,214	27.4	0.8	5,744	25.7	0.8	6,308	28.4	0.9
Both sexes	4790	55.5	1.1	5121	57.1	1.0	5,214	56.2	1.0	5,744	59.8	0.9	6,308	58.7	1.0

Table A5.1 Male and Female Involvement in Farm Activities, 2002/03 (continued)

	Poorest 20%			Poorer 20%			Middle 20%			Richer 20%			Richest 20%		
	N		std err	N		std err	N		std err	N		std err	N		std err
Bee keeping (%)															
Male	200	88.0	2.7	183	87.1	2.4	190	87.5	2.2	218	88.0	2.0	194	85.0	3.2
Female	200	7.4	2.2	183	6.2	1.9	190	8.0	1.7	218	6.4	1.6	194	4.8	1.5
Both sexes	200	3.7	1.4	183	3.9	1.3	190	3.1	1.4	218	5.6	1.6	194	8.7	2.9
Fishing (%)															
Male	432	90.9	1.8	430	89.2	1.7	426	92.8	1.3	430	92.9	1.3	351	90.8	1.9
Female	432	3.2	0.8	430	6.5	1.3	426	2.5	0.7	430	3.3	0.9	351	2.9	1.1
Both sexes	432	4.8	1.6	430	3.5	0.9	426	3.6	0.8	430	2.7	0.9	351	2.5	0.8
Fish farming (%)															
Male	30	61.4	4.6	34	62.8	4.8	48	58.0	4.6	66	55.8	5.2	109	61.2	4.5
Female	30	16.8	3.7	34	11.8	4.8	48	10.2	0.7	66	19.6	3.8	109	5.7	2.1
Both sexes	30	16.1	6.0	34	22.0	0.1	48	29.6	4.4	66	24.6	4.6	109	33.1	4.1
Off-farm income (%)															
Male	5284	49.8	1.0	5497	52.6	0.9	5,575	51.1	0.9	5,815	53.6	0.9	6,970	58.0	0.8
Female	5284	20.4	0.7	5497	18.9	0.6	5,575	17.6	0.6	5,815	16.6	0.6	6,970	15.2	0.5
Both sexes	5284	29.6	0.9	5497	28.4	0.9	5,575	31.1	0.9	5,815	29.6	0.9	6,970	26.4	0.8

Source: Authors' calculation using NBS, 2006