

The Agricultural Services Innovation & Reform Project

Extension Coverage Survey 2003: Key Findings

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Acronyms and Abbreviations

BBS	Bangladesh Bureau of Statistics
BRDB	Bangladesh Rural Development Board
BWDB	Bangladesh Water Development Board
BADC	Bangladesh Agricultural Development Corporation
BRAC	Bangladesh Rural Advancement Committee
BS	Block Supervisor
DAE	Department of Agricultural Extension
DLS	Department of Livestock Services
DoF	Department of Fisheries
Dept.	Department
DYD	Department of Youth Development
DWA	Department of Women's Affairs
ESP	Extension Service Provider
ECS	Extension Coverage Survey
ESS	Extension Services Study
FW	Field Worker
GO	Government Organisation
hh	Household
LGED	Local Government Engineering Department
NGO	Non-government Organisation
NAEP	New Agricultural Extension Policy
N	No
NA	Not applicable
TCCA	Thana (Upazila) Central Co-operative Association
VGD	Vulnerable Group Development (Programme)
VGF	Vulnerable Group Fund
Y	Yes
>1	More than 1

Definitions

Agriculture	Agriculture covers crops, livestock, forestry, fisheries
Accessible households	Method: all hh in sample sorted according to cost of travel by public transport to closest office of the ESP. 2 groups made: 1) accessible hh = 50% of sampled hh with lowest cost of travel to ESP, and 2) inaccessible hh = 50% of sampled hh with highest cost of travel to ESP.
Advice:	Receiving an opinion on what to do, how to do something
Awareness of ESPs	If the respondent recognises the acronym, local or official name of the organisation, knows about the area(s) in which the ESP works and knows where one of the offices in the Upazila (if more than 1) is located.
Adopted fully	The farmer believes that s/he followed the advice of the ESP exactly as s/he was told e.g. same area devoted to the crop, same quantities of fertiliser, same spacing of seedling etc.
Adopted partially	The farmer did not follow the advice of the ESP exactly as s/he was told e.g. a different area devoted to the crop, different quantities of fertiliser, different spacing of seedling etc.
Extension Service Provider	GO, NGO or Private organisation providing advice/ services related to agriculture
Formal Community Group	Formal community group may be defined as one that holds regular meetings (e.g. weekly, monthly, quarterly etc.), has a defined leadership (e.g. President, Secretary, Treasurer), is formed for a set purpose (e.g. village development, construction of a school etc.) and has a membership of =>5.
Group of Farmers	=> 5 farmers
Household	Household is the smallest unit of social institution. Almost all the socio-economic activities are being performed in this unit. It can be defined as a dwelling unit where one or more persons live and eat together under a common cooking arrangement. Matrimonial or blood or both relations exist among most of the persons who reside there ¹ .

¹ BBS definition: Report of the Household Income and Expenditure Survey, 2000; March 2003

Household, head of	Head of household means a member of the household who is the decision-maker regarding the different activities of the household. This household is also being run under their command. A member is regarded as the household head if other members deem them to be so. Generally the eldest male or female earner in the household is considered to be the head of the household. ²
Inaccessible households	Method: all hh in sample sorted according to cost of travel by public transport to closest office of the ESP. 2 groups made: 1) accessible hh = 50% of sampled hh with lowest cost of travel to ESP, and 2) inaccessible hh = 50% of sampled hh with highest cost of travel to ESP.
Krishi Mela	Krishi Melas are organised by the Department of Agricultural Extension with the support of other ESPs. Other agricultural ESPs (from the GO, NGO and Private Sector) are invited to attend and set up a stall
Landless households	OPERATING below 0.02 hectares
Large households	OPERATING above 3.0 hectares
Medium households	OPERATING between 1.0 and 3.0 hectares
Mass media	Radio, television, posters, leaflets/ newsletters, newspapers
Marginal households	OPERATING between 0.02 and 0.2 hectares
Operating	Land that is owned or share cropped/ leased in by the household which is cultivated or fallow + the area of ponds/ gheras that is owned/ leased in by the hh in which fish or prawns are cultured.
Private organisation	Includes independent persons selling services or advice e.g. a veterinarian surgeon, a shop selling agricultural products such as a seed, a fertiliser dealer, a vet, etc.
Small households	OPERATING between 0.2 and 1.0 hectares
Service:	Includes: <ul style="list-style-type: none"> • input supply (pesticides, seeds, fertilisers, insecticides, vaccinations, • treatment of animals, • artificial insemination, • agricultural credit etc. <p>Note: this does not include the hiring of agricultural labour, machinery or draught power</p>

² ibid

Subject area	This includes (a) Crop production, (b) Vegetable production, (c) Poultry raising, (d) Prawn/ Fish production, (e) Livestock raising, (f) Fruit trees, (g) Forest trees, (h) Agricultural credit, (I) Other 'Other areas' might include water management, plant protection, soil and fertiliser management, farm management, agribusiness, processing and marketing of farm produce, etc.
VGD	A card that is distributed to certain farmers under the Vulnerable Group Development Programme (VGDP) under the Ministry of Relief and Rehabilitation and the Women's Affairs Department. It targets various categories of impoverished women, including the destitute, widowed and divorced, plus those with undernourished and/ or lactating children or handicapped husbands. Participants are given cards that entitle them to 31.5 Kgs of wheat per month for 18 months. At the same time, wheat to the value of Tk. 25 each month is monetised and the sum then deposited in an account operated by the chairman and the UNO.
VGF	The Vulnerable Group Fund operated by The Relief Ministry provides support for poor and vulnerable households during times of scarcity and natural disaster. Allocations vary according to the extent of the problem encountered, but typically would be of the order of 500 cards per union each of which entitles the recipient to 5-10 kgs of wheat.
Sector	Crops, Livestock, Forestry or Fisheries

Executive Summary

The Extension Coverage Survey 2003 set out to answer eleven hypotheses. The extent to which each of these hypotheses has been proven is shown in the table below. Key findings related to 'contact,' 'awareness' and 'use of advice' are presented after the table.

Hypothesis	Score (where 1 is not at all correct and 10 is fully correct)
Contact	
1. During the last twelve months male and female members of households operating smaller landholdings received fewer services or advice from ESPs than male and female members of households operating larger landholdings.	GO advice to males: 9 NGO advice to males: 8 Private Org. services to males: 7 'Other farmer' advice rec'd by males: 7 GO advice to females: 2 NGO advice to females: 2 Private Org. services to females: 6 'Other farmer' advice rec'd by females: 6
2. During the last twelve months female farmers received more services or advice from NGO as opposed to GO ESPs. Male farmers received more services or advice from GO as opposed to NGO ESPs.	Female farmers receive more services from NGO as opposed to GO: 2 Male farmers receive more services from GO as opposed to NGO: 10
3. During the last twelve months male and female members of inaccessible households received fewer services or advice from ESPs than male and female members of relatively accessible households.	Male farmers: 2 Female farmers: 2
4. During the last twelve months NGOs gave more services or advice in all sectors to male and female members of households operating smaller landholdings than GO ESPs. GO ESPs gave more services or advice in all sectors to male and female members of households operating larger landholdings.	NGOs 'as a group' give advice in all sectors: 9 GOs 'as a group' give advice in all sectors: 7 NGOs give more advice to 'landless' males than 'large' males: 3 NGOs give more advice to 'landless' females than 'large' females: 3 GOs give more advice to 'large' males than 'landless' males: 9 GOs give more advice to 'large' females than 'landless' females: 9
5. During the last twelve months GO and NGO ESPs gave more services or advice to male and female members of landless households with low, mid and high income per capita than male and female members of large households with low, mid and high income per capita.	GO advice to males: 1 NGO advice to males: 3 GO advice to females: 3 NGO advice to females: 3
6. GOs and NGOs provide services or advice to male and female farmers through a group approach rather than an individual household approach.	GO advice to males: 3 NGO advice to males: 7 GO advice to females: 4 NGO advice to females: 8

7. 'Other' farmers and mass media are a significant source of extension services or advice for all categories of farmer	Score: 8
<u>Use of ESP Advice/ services</u>	
8. During the last twelve months a higher proportion of male and female household members operating larger landholdings than male and female household members operating smaller landholdings trialed the last advice they received and got a good result.	% of male farmers trialing last advice and getting a good result increases with size of land operated: 3 % of female farmers trialing last advice and getting a good result increases with size of land operated: 3
<u>Knowledge/ Awareness of ESPs</u>	
9. A higher proportion of male and female members of households operating smaller landholdings are unaware of ESPs operating in the Upazila than male and female members of farmers operating larger landholdings.	Male awareness of GOs: 9 Male awareness of NGOs: 7 Female awareness of GOs: 9 Female awareness of NGOs: 3
10. A higher proportion of female than male farmers are aware of NGO ESPs operating in the Upazila and a higher proportion of male than female farmers are aware of GO ESPs operating in the Upazila.	Higher % of males than females are aware of GO ESPs: 10 Higher % of females than males are aware of NGO ESPs: 1
11. Higher proportions of male and female farmers of accessible households compared to male and female farmers of inaccessible households are aware of ESPs operating in the Upazila.	Male farmers in accessible households are more aware of ESPs: 9 Female farmers in accessible households are more aware of ESPs: 5

Contact

For male farmers, the main source of extension advice³ is 'other farmers' (43% of households) followed by private organisations (41%), GOs (27%) and then NGOs (6.5%).

'Other farmers' (28% of households) and private organisations (22.9%) are also the most important sources of extension advice for female farmers. GO and NGOs are relatively less important sources in terms of numbers of households receiving advice (6.3% and 6.8% of households respectively).

The proportion of households in which males received services from GOs and 'other farmers' during the last twelve months increases with size of land operated. This is also more-or-less true for NGOs and Private organisations.

GOs and NGOs are providing services to females in similar proportions of households in all land size categories. To some extent there is a positive correlation between size of land operated and proportion of households in which females receive services from 'other farmers' and private organisations.

³ Note: 'services' and 'advice' are used interchangeably.

Taking the four largest GO extension service providers, DAE has contacted males in the highest proportion of households (14.9%), followed by DLS (10.5% of households), DoF (2.4%) and the Forest Department (0.4%). Each of these four ESPs are contacting higher proportions of male than female farmers (DAE contacted females in 0.6% of households, DLS in 5%, DoF in 0.2% and Forest Department in 0.2%.)

NGOs as a group providing services to males and females in equal % of households. However, if the data is disaggregated the national NGOs BRAC, CARITAS and Proshika are clearly providing agricultural services to more male than female farmers.

The proportion of accessible and inaccessible households in which male members received a service during the last twelve months varies by ESP – no strong correlation either way.

The proportion of households in which males received services from a GO increases quite markedly with land size operated and household income per capita. The proportion of households in which females received services also increases with land size operated and household income per capita but much less markedly.

The proportion of households in which males received services from an NGO increases with land size operated and also household income per capita (but not significantly). The proportion of households in which females received services also increases with land size operated and with household income per capita but much less markedly.

GOs as a group are providing advice to male farmers in all sectors however the majority of advice is related to crop production and livestock raising (channelled mainly through DAE and DLS respectively). GOs are also providing advice to female farmers in all sectors but the majority has been in livestock and poultry raising

NGOs as a group have provided advice to sampled male farmers in all sectors apart from prawn/fish production. The majority of advice is again related to crop production followed by vegetable production. NGOs have also provided advice to sampled female farmers in all sectors but the majority has been in vegetable production followed by poultry raising

The greatest proportion of GO advice (49.2%) delivered to males is in the presence of 2-4 farmers. 34.2% of GO advice delivered to male farmers is on a one-to-one basis and the rest (16.6%) is given through a group approach (=>5 farmers.)

As in the case of advice given by GOs to male farmers, the majority of advice given to female farmers (49.3%) is delivered in the presence of 2-4 female farmers. 30.2% of GO advice is delivered to female farmers through a group approach, and the rest (20.5%) is given on a one-to-one basis.

The majority of NGO advice given to both male and female farmers is through a group approach (40.7% and 82.5% of advice respectively). Only 5% and 22.3% of advice given to female and male farmers is on a one-to-one basis.

Mass media is also an important source of extension advice to both male and female farmers (males and females in 41% and 24.8% of households respectively received at least one advice from mass media during the last twelve months.) Mass media is a source of extension advice to males and females in more households than GO and NGO advice but in less households than 'other farmers' and private organisations.

Awareness

As one might expect, perhaps due to their greater mobility, male awareness of all key GO ESPs is higher than female awareness.

The proportion of households in which male members are aware is highest for DLS (62.9% of households), followed by DAE (57.3%), DoF (30.9%) and then the Forest Department (27.6%).

The proportion of households in which male members are aware and the proportion of households in which female members are aware of DAE, DLS, DoF and the Forest Department increases with an increase in the size of land operated (as well as an increase in income category.)

Male awareness of NGO ESPs is higher than female awareness.

The proportion of 'large' households in which males are aware of NGOs tends to be greater than the proportion of 'landless' households. However, the difference between the two groups tends to be less marked than in the case of awareness of GOs.

The proportion of 'large' households in which females are aware of NGOs tends to be either less or equal to the proportion of 'landless' households. This is particularly evident in the case of BRAC and Proshika.

Use of Advice

The proportions of ESP⁴ advice fully used by male and female farmers is high (90% and 86.9% in the case of male and female farmers respectively.)

For both male and female farmers there is a slightly positive correlation between size of land operated and 'full use' of ESP advice.

Of all ESP advice used by male and female farmers during the last twelve months, the proportion ending with a good result is high for both male and female farmers alike (89.6% and 89.9% of advice respectively).

High proportions of advice received from ESPs by both male and female farmers will be used again in the future (95% and 94% of advice received by male and female farmers respectively.)

⁴ GO, NGO and Private organisation

1 Introduction

This report presents findings from a national survey (excluding Rangamati and Khagrachari for safety and logistical reasons), that was conducted between May and July 2003. The purpose of the survey was to provide reliable data about agricultural extension services in Bangladesh and provide baseline data for performance measures in DAE's Strategic Plan (2002-2006).

The survey was conducted in partnership with representatives from key agricultural extension service providers namely DAE, DLS, DoF, Forestry Department, BRAC and CARITAS. These representatives were involved in each of the key stages of the survey (e.g. methodology design, field testing etc.)

The survey set out to answer eleven hypotheses, (see executive summary) that relate to 'contact', 'awareness' and 'use of extension advice.' The results section of the report determines the extent to which each hypothesis is proven. This is based on evidence drawn from the Output tables (Annex 2). There are approximately 100 pages of output tables, the reason for this is that data has been disaggregated for the 'partner' organisations in the hope that they will make use of the data.

Annex 1 contains a selection of graphs whilst annex 3 contains the methodology.

2.1.2 During the last twelve months female farmers received more services or advice from NGO as opposed to GO ESPs. Male farmers received more services or advice from GO as opposed to NGO ESPs.	
Degree to which the hypothesis is correct:	Score: (where 1 is not at all correct and 10 is fully correct) Female farmers receive more services from NGO as opposed to GO: 2 Male farmers receive more services from GO as opposed to NGO: 10
Source of information:	Tables: 4.2-4.3, 4.5, 7.2 Graphs: 1,2, 3, 4,
Evidence:	<p>During the last twelve months, males received at least one agricultural service from a GO in 27% of households and females in only 6.3% of households. Males and females in similar proportions of households received at least one service from an NGO (6.5% and 6.8% respectively.) However, if we disaggregate the NGO data we see that the national NGOs such as BRAC, CARITAS and Proshika are providing agricultural services to more female than male farmers.</p> <p>Taking the four largest GO extension service providers, DAE has contacted males in the highest proportion of households (14.9%), followed by DLS (10.5% of households), DoF (2.4%) and the Forest Department (0.4%). Each of these four ESPs are contacting higher proportions of male than female farmers (DAE contacted females in 0.6% of households, DLS in 5%, DoF in 0.2% and Forest Department in 0.2%.)</p> <p>Of the households in which males received a service from a GO the average number of occasions was 3.5 (compared to 1.4 for females.) However, of the households in which males received a service from an NGO the average number of occasions was 2.9 (compared to 4.1 for females.)</p>

2.1.3 During the last twelve months male and female members of inaccessible households received fewer services or advice from ESPs than male and female members of relatively accessible households.	
Degree to which the hypothesis is correct:	Score: (where 1 is not at all correct and 10 is fully correct) Male farmers: 2 Female farmers: 2
Source of information:	Tables: 13.1 – 13.7 Graphs: 7, 8
Evidence:	<p>The proportion of accessible and inaccessible households in which male members received a service during the last twelve months varies by ESP. For example, of the households in which male members received a service from DAE, 41% are relatively accessible, 59% are relatively inaccessible. Similarly, of the households in which male members received a service from DoF, 55.5% are relatively accessible, 44.5% are relatively inaccessible. On the other hand, of the households in which male members received services from DLS, the Forest Department and BRAC a higher proportion are relatively accessible.</p> <p>The proportion of accessible and inaccessible households in which female members received a service during the last twelve months also varies by ESP. For example, of the households in which female members received services from DAE, DLS, CARITAS and Proshika, a higher proportion are relatively inaccessible.</p> <p>The mean number of occasions that accessible and inaccessible households receive services from various ESPs also tends to vary by ESP e.g. male members of relatively inaccessible households received advice from DAE on more occasions than relatively accessible households. For DoF however, the opposite is true – relatively accessible households received advice from DoF on more occasions than relatively inaccessible households.</p>

2.1.4 During the last twelve months NGOs gave more services or advice in all sectors to male and female members of households operating smaller landholdings than GO ESPs. GO ESPs gave more services or advice in all sectors to male and female members of households operating larger landholdings.	
Degree to which the hypothesis is correct:	Score: (where 1 is not at all correct and 10 is fully correct) NGOs 'as a group' give advice in all sectors: 9 GOs 'as a group' give advice in all sectors: 7 NGOs give more advice to 'landless' males than 'large' males: 3 NGOs give more advice to 'landless' females than 'large' females: 3 GOs give more advice to 'large' males than 'landless' males: 9 GOs give more advice to 'large' females than 'landless' females: 9
Source of information:	Tables: 4.2-4.3, 4.22 Graphs: 1, 2, 5, 6, 9-12
Evidence:	<p>Male and female farmers in 27% and 6.3% of households respectively received at least one service from a GO during the last twelve months. The proportion of households in which males received services increases quite markedly with land size operated (e.g. males in 57% of 'large' households compared to males in 14% of 'landless' households received at least one service from a GO.) The proportion of households in which females received services also increases with land size operated but much less markedly (e.g. females in 8.6% of 'large' households compared to females in 6.3% of 'landless' households received at least one service from a GO.)</p> <p>Male and female farmers in 6.5% and 6.8% of households respectively received at least one service from an NGO during the last twelve months. The proportion of households in which males received services increases with land size operated (e.g. males in 10.2% of 'large' households compared to males in 2.7% of 'landless' households received at least one service from an NGO.) The proportion of households in which females received services also increases with land size operated but much less markedly (e.g. females in 6.3% of 'large' households compared to females in 5.8% of 'landless' households received at least one service from an NGO.)</p> <p>Of the households in which male members received a service from a GO, those falling in the 'small', 'medium' and 'large' land categories (i.e. the larger land categories) received services more frequently. Of the households in which female members received a service from a GO, all land categories received services with more or less equal frequency.</p> <p>Of the households in which male members received a service from an NGO, those falling in the 'landless' land category received services more frequently than males in households falling in the 'large' land category. Of the households in which female members received a service from an NGO, households falling in the 'marginal' and 'medium' land categories received services the most frequently (i.e. mixture of relatively 'large' and 'small' households).</p> <p>GOs as a group are providing advice to male farmers in all sectors however the majority of advice is related to crop production and livestock raising (channelled mainly through DAE and DLS respectively). GOs are also providing advice to female farmers in all sectors but the majority has been in livestock and poultry raising (mainly channelled through DLS.)</p>
	NGOs as a group have provided advice to sampled male farmers in all sectors apart from prawn/fish production. The majority of advice is again related to crop production followed by vegetable production. NGOs have also provided advice to sampled female farmers in all sectors but the majority has been in vegetable production followed by poultry raising.

2.1.5 During the last twelve months GO and NGO ESPs gave more services or advice to male and female members of households with low income per capita than male and female members of households with high income per capita.		
Degree to which the hypothesis is correct:	Score: (where 1 is not at all correct and 10 is fully correct) GO advice to males: 1 NGO advice to males: 3	GO advice to females: 3 NGO advice to females: 3
Source of information:	Tables: 4.1, 4.2, 4.13, 4.14 Graphs: 13 - 16	
Evidence:	<p>Refer to 'evidence' in Hypothesis 2.1.4</p> <p>Male and female farmers in 27% and 6.3% of households respectively received at least one service from a GO during the last twelve months. The proportion of households in which males received services from GOs increases quite markedly with household income per capita (e.g. males in 20.6% of 'income cat 1'⁸ households compared to males in 37% of 'income cat 3'⁹ households received at least one service from a GO.) The proportion of households in which females received services also increases with household income per capita but much less markedly (e.g. females in 4.9% of 'income cat 1' households compared to females in 6.8% of 'income cat 3' households received at least one service from a GO.)</p> <p>Male and female farmers in 6.5% and 6.8% of households respectively received at least one service from an NGO during the last twelve months. The proportion of households in which males received services from NGOs increases, but not significantly, with household income per capita (e.g. males in 6.3% of 'income cat 1' households compared to males in 8.5% of 'income cat 3' households received at least one service from an NGO.) The proportion of households in which females received services also increases, but again not significantly, with household income per capita (e.g. females in 9.2% of 'income cat 1' households compared to females in 12.4% of 'income cat 3' households received at least one service from an NGO.)</p> <p>Of the households in which male members received a service from a GO, those falling in the highest household income per capita category received services more frequently than those falling in the lowest income per capita category (average of 5.1 occasions versus 3.6 occasions respectively). Of the households in which female members received a service from a GO, all income categories received services with more or less equal frequency.</p>	
	Of the households in which male members and of the households in which female members received a service from an NGO, those falling in the highest household income per capita categories received services more frequently than those falling in the lowest income per capita categories (average of 3.8 occasions versus 2.3 occasions for males and average of 8.7 occasions versus 3.7 occasions for females.)	

⁸ Daily per capita income of <Tk 15

⁹ Daily per capita income of =>Tk 59

2.1.6 GOs and NGOs provide services or advice to male and female farmers through a group approach rather than an individual household approach.		
Degree to which the hypothesis is correct:	Score: (where 1 is not at all correct and 10 is fully correct) GO advice to males: 3 NGO advice to males: 7	GO advice to females: 4 NGO advice to females: 8
Source of information:	Tables: 6.1 Graphs: 17, 18	
Evidence:	<p>The greatest proportion of GO advice (49.2%) delivered to males is in the presence of 2-4 farmers. 34.2% of GO advice delivered to male farmers is on a one-to-one basis and the rest (16.6%) is given through a group approach (=>5 farmers.)</p> <p>As in the case of advice given by GOs to male farmers, the majority of advice given to female farmers (49.3%) is delivered in the presence of 2-4 female farmers. 30.2% of GO advice is delivered to female farmers through a group approach, and the rest (20.5%) is given on a one-to-one basis.</p> <p>The majority of NGO advice given to both male and female farmers is through a group approach (40.7% and 82.5% of advice respectively). Only 5% and 22.3% of advice given to female and male farmers respectively is on a one-to-one basis.</p>	

2.1.7 'Other' farmers and mass media are a significant source of extension services or advice for all categories of farmer	
Degree to which the hypothesis is correct:	Score: 8 (where 1 is not at all correct and 10 is fully correct)
Source of information:	Tables: 9.1, 9.5, 10.1-10.7 Graphs: 1, 2, 19, 20
Evidence:	<p>'Other farmers' are a significant source of extension advice for both males and females (in 43% and 28% of households males and females received at least one service respectively.) They are a particularly important source for males perhaps due to the fact men are relatively more 'mobile'.</p> <p>For both male and female farmers, higher proportions of households received services from 'other farmers' than from private organisations, GOs or from NGOs.</p> <p>The proportion of households in which males have received service from 'other farmers' increases with an increase in the size of land operated.</p> <p>For male farmers, the majority of advice received from 'other farmers' relates to crop production (47.9% of advice), followed by livestock raising (16.5%) and vegetable production (11.6%). For female farmers the majority of advice received from 'other farmers' relates to poultry raising (48.1% of advice), followed by vegetable production (26.5%) and livestock raising (17.9%).</p> <p>Mass media is also an important source of extension advice to both male and female farmers (males and females in 41% and 24.8% of households respectively received at least one advice from mass media during the last twelve months.) Mass media is a source of extension advice to males and females in more households than GO and NGO advice but in less households than 'other farmers' and private organisations.</p> <p>For both males and females, in terms of mass media, the TV and radio are the most important sources of extension advice. Bearing in mind these media sources, it is not surprising that the proportion of households in which male farmers and the proportion of households in which female farmers have received extension service increases with an increase in per capita income.</p> <p>Posters, leaflets and newspapers are all relatively less important sources of extension advice for both male and female farmers.</p> <p>Grouping all mass media, advice received by male farmers relates mainly to fruit and forest trees (27.6% and 25.6% respectively) followed by crop production (11.7%) and then vegetable production (11.4%). Advice received by female farmers also mainly relates to fruit and forest trees (29.7% and 20.9% respectively) followed by vegetable production (19.2%).</p>

2.1.8 During the last twelve months a higher proportion of male and female household members operating larger landholdings than male and female household members operating smaller landholdings trialed the last advice they received and got a good result.	
Degree to which the hypothesis is correct:	Score: (where 1 is not at all correct and 10 is fully correct) % of male farmers trialing last advice and getting a good result increases with size of land operated: 3 % of female farmers trialing last advice and getting a good result increases with size of land operated: 3
Source of information:	Tables: 5.1-5.2, 9.2-9.4 Graphs: 21, 22
Evidence:	<p>The proportions of ESP¹⁰ advice fully used by male and female farmers is high (90% and 86.9% in the case of female and male farmers respectively.)</p> <p>For both male and female farmers there is a slightly positive correlation between size of land operated and 'full use' of ESP advice. This may indicate that farmers operating smaller landholdings are more risk averse than 'larger' farmers - they would prefer to wait and see the results of their 'larger' neighbours once these farmers have tried and tested the ESP advice.</p> <p>Interestingly, a higher proportion of advice received by female than male farmers in all categories was 'fully used.'</p> <p>Of all ESP advice used by male and female farmers during the last twelve months, the proportion ending with a good result is high for both male and female farmers (89.6% and 89.9% of advice respectively). A slightly higher proportion of advice used by 'large' male and female farmers did not end in a good result relative to advice used by male and female farmers in other land categories.</p> <p>High proportions of advice received from ESPs by both male and female farmers will be used again in the future (95% and 94% of advice received by male and female farmers respectively.)</p> <p>These results can be compared with advice received from 'other farmers.' The proportions of advice received from 'other farmers' that is 'fully used' by male and female farmers is still high (75% and 82.9% in the case of female and male farmers respectively) but more advice is only 'partially used' i.e. farmers are receiving advice from 'other farmers' but are being more selective in which 'parts' they use.</p>
	<p>Of all 'other farmer' advice used by male and female farmers during the last twelve months, the proportion ending with a good result is high for both male and female farmers alike (89.4% and 89% of advice respectively) i.e. same as ESP advice.</p> <p>High proportions of advice received from ESPs by both male and female farmers will be used again in the future (91.6% and 92.5% of advice received by male and female farmers respectively) – very similar to ESP advice.</p>

¹⁰ GO, NGO and Private organisation

2.1.9 A higher proportion of male and female members of households operating smaller landholdings are unaware of ESPs operating in the Upazila than male and female members of farmers operating larger landholdings.		
Degree to which the hypothesis is correct:	Score: (where 1 is not at all correct and 10 is fully correct) Male awareness of GOs: 9 Male awareness of NGOs: 7	Female awareness of GOs: 9 Female awareness of NGOs: 3
Source of information:	Tables: 12.4 – 12.9, 12.19 – 12.22, 12.26 – 12.31 Graphs: 23-26	
Evidence:	<p>As one might expect, perhaps due to their greater mobility, male awareness of all key GO ESPs is higher than female awareness. For example, the proportion of households in which males are aware of DAE is 57.3% compared to 18.6% of households in which females are aware. The proportion of households in which males are aware of DLS is 62.9% compared to 25.3% of households in which females are aware. The results are similar for DoF and the Forest Department.</p> <p>The proportion of households in which male members are aware is highest for DLS (62.9% of households), followed by DAE (57.3%), DoF (30.9%) and then the Forest Department (27.6%). This ranking is the same for female farmers but the proportions of households are lower (DLS – 25.3% of households, DAE – 18.6%, DoF – 8.8% and the Forest Department – 6.9%).</p> <p>The proportion of households in which male members are aware and the proportion of households in which female members are aware of DAE, DLS, DoF and the Forest Department increases with an increase in the size of land operated (as well as an increase in income category.)</p> <p>Male awareness of NGO ESPs is higher than female awareness. For example, the proportion of households in which males are aware of BRAC is 66.8% compared to 37.8% of households in which females are aware. The proportion of households in which males are aware of Proshika is 36.2% compared to 16.9% of households in which females are aware. The proportion of households in which males are aware of CARITAS is 33.9% compared to 17.3% of households in which females are aware. The results are similar for the five largest NGOs operating in the Upazila.</p> <p>The proportion of 'large' households in which males are aware of NGOs tends to be greater than the proportion of 'landless' households, however the difference between the two groups tends to be less marked than in the case of awareness of GOs.</p> <p>The proportion of 'large' households in which females are aware of NGOs tends to be either less or equal to the proportion of 'landless' households, this is particularly evident in the case of BRAC and Proshika.</p>	

2.1.10 A higher proportion of female than male farmers are aware of NGO ESPs operating in the Upazila and a higher proportion of male than female farmers are aware of GO ESPs operating in the Upazila.	
Degree to which the hypothesis is correct:	Score: (where 1 is not at all correct and 10 is fully correct) Higher % of males than females are aware of GO ESPs: 10 Higher % of females than males are aware of NGO ESPs: 1
Source of information:	Tables: 12.4 – 12.9, 12.19 – 12.22, 12.26 – 12.31 Graphs: 23-26
Evidence:	See 'evidence' for hypothesis 2.1.9

2.1.11 Higher proportions of male and female farmers of accessible households compared to male and female farmers of inaccessible households are aware of ESPs operating in the Upazila.	
Degree to which the hypothesis is correct:	Score: (where 1 is not at all correct and 10 is fully correct) Male farmers in accessible households are more aware of ESPs: 9 Female farmers in accessible households are more aware of ESPs: 5
Source of information:	Tables: 12.31-12.43, 13.1 Graphs: 29, 30
Evidence:	The proportion of households in which males are aware of all GO and NGO ESPs (with the exception of the smallest NGO operating in the Upazila) is higher for relatively accessible households. The proportion of households in which females are aware of GO and NGO ESPs is not always higher for relatively accessible households. For some ESPs the proportion of households in which females are aware is actually higher (or equal) in relatively inaccessible households. In particular this applies to DAE, DLS, DoF, the Forest Department and some of the NGOs operating in the Upazila.

2.2 Additional Findings

2.2.1 Farming practices

(Tables 2.1, 2.2,)

Tables 2.1a and 2.1b show the proportion of households in which males and females respectively are undertaking various agricultural activities.

The agricultural activity that the majority of male farmers are practising is cultivating field crops (75% of households), followed by raising livestock (62%), cultivating vegetables (58%) and fruit trees (58%).

As one might expect, the proportion of households in which males cultivate field crops increases with an increase in the size of land operated (90% of 'large' farmers compared to 35% of 'landless' farmers.) The proportion of households in which males raise livestock, cultivate vegetables and fruit trees also increases with an increase in the size of land operated.

The agricultural activity that the majority of female farmers are practising is raising poultry (85% of households), followed by cultivating vegetables (75%) and raising livestock (51%). The proportion of households in which females practise each of these activities increases with an increase in the size of land operated.

High proportions of male members of 'landless' households are undertaking fruit tree cultivation (40% of landless households) followed by poultry raising (38%), livestock raising (35%), cultivation of field crops (35%) and vegetable cultivation (32%).

High proportions of female members of 'landless' households are undertaking poultry raising (92% of landless households), livestock raising (64%) and vegetable cultivation (60%).

2.2.2 DAE Specific

(Tables 4.7, 4.22, 7.2, 12.5, 14.1)

DAE provided services to male members in 14.9% of households and females in 0.6% of households¹¹ during the last twelve months. With the assumptions outlined in table 14.1 this 'contact rate' of 15% is the equivalent of only 1.7 households receiving advice from DAE per day of field work.

Households in which males received advice from DAE did so on a number of different occasions (average of 4.79 occasions).

The proportion of households in which males received services from the Department increases with an increase in the size of land operated (41% of 'large' households compared to 7.6% of 'landless' households.)

The proportion of households in which males received a service from DAE during the last twelve months where per capita incomes are less than \$1 per day was 17.9% (compared to 28.2% of households in which per capita incomes are more than \$1 per day.)

¹¹ excludes advice from melas

The majority of advice given to male farmers relates to crop production (66.6% of advice given), followed by vegetable production (19.6%), and then fruit and forest trees cultivation (7.9% and 4.8% respectively.) For female farmers, the majority of advice they receive from DAE relates to vegetable production (36.3%), followed by crop production (27.2%) and fruit and forest tree cultivation (27.2% each).

Both male and female recipients adopt a high proportion of DAE advice. Male farmers seem to be receiving the advice and then adapting it to their own needs (75% 'fully adopted' and 24% 'partially adopted' the advice.) A high proportion (>90%) of DAE advice ended with a good result and will be tried again in the future.

Of households in which males received a service from DAE during the last twelve months, a large proportion (45%) took place in the DAE office, possibly indicating that farmers sought this advice. Advice was also given in the farmers' homestead (12% of households), the farmers' field (11%), a trader's shop (5%) and another farmers' homestead (3%).

A large proportion of DAE advice (56%) is given to small groups of male farmers (2-4 farmers present). 26% of advice is given on a one-to-one basis and 17% is given through a group approach.

Males and females in 57% and 18% of households are aware of DAE respectively. The proportion of households in which males are aware increases with size of land operated as well as with an increase in household per capita income (75% of large compared to 42% landless and 49% from income category 1 compared to 75% from income category 3.) The proportion of households in which females are aware also increases with size of land operated as well as with an increase in household per capita income. These results are perhaps not surprising since these are the categories in which the highest proportion of farmers is cultivating field crops.

2.2.2 Group membership

(Tables 11.1-11.5)

The proportion of households in which at least one male member belongs to a formal community group is 22.5%. The proportion increases with an increase in size of land operated (39% of 'large' households compared to 17% of 'landless' households) and with an increase in household per capita income (31% of households in income category 3 compared to 18% of households in income category 1.)

The proportion of households in which at least one female member belongs to a formal community group is 20.6%. Interestingly, the proportion decreases with an increase in size of land operated (12% of 'large' households compared to 25% of 'landless' households) and with an increase in household per capita income (15% of households in income category 3 compared to 23% of households in income category 1.)

The formation of the majority of male groups are self-facilitated (62%), 16% are facilitated by an NGO and 13% by a GO. In the case of female groups, 85% have their formation facilitated by an NGO and 6% are facilitated by a GO. Only 6% are self-facilitated.

Of all the groups which sampled males belong to, only 36% discuss agricultural issues compared to 64% of female groups.

Not surprisingly, there are benefits for households that have a male member belonging to a group that discusses agricultural issues. These households receive advice from more ESPs on more occasions than households in which no member belongs to a group discussing agricultural issues (1.9 different ESPs compared to 1 ESP; 6 different occasions compared to 2.5).

Similarly, there are benefits for households that have a female member belonging to a group that discusses agricultural issues. These households receive advice from more ESPs than households in which no member belongs to a group discussing agricultural issues (2.7 different ESPs compared to 0.6 ESPs).

3 Comparisons with other data sets

3.1 Contact

Indicator/ quote ¹²	Findings from ECS '03	Possible Reasons for variance (where applicable)
<ul style="list-style-type: none"> In 2000: Proportion of male farmers contacted by DAE – 7.7% 	<p>% of hh in which male respondents have received at least one service from DAE during the last 12 months – 14.9%</p>	<ul style="list-style-type: none"> ESS 2000 defined contact as: ‘the number of households that were visited in the last year + (plus) the number of households that sought advice in the last year – (minus) the number of households that were both visited AND that sought advice in the last year’ Due to limited data in calculating DAE contact, the ESS 2000 definition only considered respondents who sought advice and who received advice through a visit (i.e. not households that received advice from DAE elsewhere e.g. in another farmer’s field, another farmer’s homestead, a trader’s shop etc.) DAE’s contact rate is therefore likely to have been underestimated. If we attempt to use a similar definition for the ECS '03 data as used in ESS 2000 then the results are similar: 1.7% of households receiving advice in their homestead, 1.6% in their field (i.e. equivalent of a visit to their homestead) and 6.4% of households receiving advice in the DAE office (i.e. equivalent to seeking advice) = 9.7% of hh. During the analysis of ESS 2000 data it was necessary to make assumptions about which ESP was providing each type of service (due to weaknesses in the questionnaire). For example, all advice received from a GO related to crop and vegetable production was attributed to DAE. Table 4.22 in this report shows that DAE has been giving advice in fruit and forest trees. In ESS 2000 this advice was attributed to the Forest Department and not DAE (worth 3.2% of hh). The DAE contact rate of 7.7% is therefore likely to be an underestimation.

¹² ASIRP, March 2003, Performance of Extension Service Providers in Bangladesh Quality or Quantity of Service? ASIRP, December 2001, ESS 2000 A Summary of: The Initial Analysis Presented to DAE’s Management Committee & Results from Additional Analysis

Indicator/ quote	Findings from ECS '03	Possible Reasons for variance (where applicable)
For male farmers – ‘GOs are always more important information sources than NGOs, even for homestead activities such as vegetable production’	% of hh in which males received advice from a GO and NGO is 27% and 10.2% respectively.	
The agricultural activities where NGOs are giving most advice during the last year, as reported by women, was in the areas of vegetable production, poultry raising and looking after trees.	Of all services given to female farmers by NGOs (grouped), the majority was related to vegetable production (57% of services), poultry raising (15%), and fruit trees (10%)	
All categories of household get most of their advice from other farmers, family and neighbours – local knowledge	All categories (more or less) of household get most of their advice from other farmers	
<ul style="list-style-type: none"> • DAE contacted the greatest proportion of male respondents, followed by Forestry, DLS and then DoF • Male farmers: DAE (7.7%), DoF (3.3%), DLS (3.9%), Forestry (4.5%) • Female farmers: DAE (1.7%), DoF (1%), DLS (1%), Forestry (2%) • The Department of Forestry contacted the greatest proportion of female respondents ‘during the last year’. DAE, DLS and DoF all contacted similar 	<ul style="list-style-type: none"> • DAE contacted males in most households¹³ (14.9% of hh) followed by DLS (10.5%), DoF (2.4%), and Forestry (0.4%). • DLS contacted females in most households¹⁴ (5% of hh) followed by DAE (0.6%), DoF (0.2%), and Forestry (0.2%). 	During the analysis of ESS 2000 data it was necessary to make assumptions about which ESP was providing each type of service (due to weaknesses in the questionnaire). For example, all advice received from a GO related to crop and vegetable production was attributed to DAE. Table 4.22 in this report shows that DAE has been giving advice in fruit and forest trees. In ESS 2000 this advice was attributed to the Forest Department and not DAE – hence the reason that the Forest Department ranked second (i.e. an overestimation.)

¹³ Excludes advice received from melas

¹⁴ Excludes advice received from melas

proportions of female respondents.		
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3.2 Awareness:

Indicator/ quote	Findings from ECS '03	Possible Reasons for variance (where applicable)
1993: 'Proportion of male farmers who know the Block Supervisor' – 51%	Males and females in 57.3% and 18.6% of households respectively are aware of DAE	
1998: Proportion of farmers recognising BSs as an important source of agricultural information – 76%		
Larger farmers are more aware	Males in 75% of 'large' hh are aware of DAE compared to 42% of 'landless' hh. Females in 21% of 'large' hh are aware of DAE compared to 16.5% of 'landless' hh.	

Indicator/ quote	Findings from ECS '03	Possible Reasons for variance (where applicable)
<p>% of male respondents that had both heard of and could describe the work of various ESPs: DAE (19.1%), DLS (33.2%), DoF (21.4%), Forest Dept. (27.1%), BRAC (69.6%)</p> <p>% of female respondents that had both heard of and could describe the work of various ESPs: DAE (4%), DLS (12.7%), DoF (4.6%), Forest Dept. (6%), BRAC (59.3%)</p>	<p>% of hh in which males are aware of DLS (63%), DoF (30.8%), Forest Dept. (27.6%), BRAC (66.8%)</p> <p>% of hh in which females are aware of DLS (25.3%), DoF (8.8%), Forest Dept. (6.9%), BRAC (37.8%)</p>	<p>Findings from the ECS '03 survey indicate that male and female awareness of various ESPs is higher than findings reported in the ESS 2000. This is most likely due to definitional differences:</p> <p>ESS 2000 definition: 'A household is considered to be aware of a service if the respondent both recognises the name of the organisation and can correctly describe at least one of its activities (even if also wrongly attributing other activities).'</p> <p>ECS '03 definition: 'If the respondent recognises the acronym, local or official name of the organisation, knows about the area(s) in which the ESP works and knows where one of the offices in the Upazila (if more than 1) is located.'</p> <p>ECS '03 asks if the respondent knows the common name, the official name and/ or the acronym for each ESP. This allows for the fact that farmers are likely to know various ESPs by their common name rather than their acronym or official name.</p> <p>ESS 2000 simply asks 'do you know of/ have you heard ofDLS etc.'</p> <p>Furthermore, ECS '03 asks if the respondent knows any of the agriculture-related areas (e.g. crops, livestock, forestry etc.) each ESP is working in. ESS 2000 asks for a more stringent response: 'Describe the work ofDLS etc.'</p>
<p>In relation to women, more male respondents had both heard of and were able to explain the work of the various ESPs</p>	<p>Ditto</p>	

3.3 Use of Advice/ Services

Indicator/ quote	Findings from ECS '03	Possible Reasons for variance (where applicable)
Proportion of recipients of information who having tested it will continue using it (Homestead – 72%, Pure Tenant - 90%, Small Owner – 84%, Medium /Large Owner – 88%)	Of all ESP advice received by male members, the % that will be tried again/ used in the future:: landless – 94% marginal – 97% small – 96% medium – 96% large – 90%	
There are ...positive indications that between 80% (NGO) and 96% (GO) of respondents that received advice do intend to use it in the future.	Ditto	
Of the households that had followed advice given to them from GO, NGO and 'Other' sources through a direct visit, the percentage that got good results varied between 91% (Other) and 99% (NGOs)	Of all ESP advice used by male members during the last twelve months, the % that ended with a good result: for all households – 89.6%	

4 Conclusions

1. Most farmers, particularly women, do not have access to extension services. Services are generally less available for farmers in lower income categories and operating less land.
2. Where services are received by farmers, they seem to be of high quality – use of advice is high, the results are good, and farmers in all categories (male and female) intend to repeat adopt. Quality is not necessarily a problem, quantity is definitely a problem.
3. Mass media appears to be supporting information dissemination on the subject of fruit and forest trees – this is positive.
4. Those elements of the national agricultural extension system that are performing the best are those to whom the New Agricultural Extension Policy pays little attention – farmers themselves, private organisations and mass media.
5. Reform of governmental service providers as envisaged in the NAEP has not occurred. In particular, GO ESP (public good advice) remains targeted at male farmers with larger land holdings and higher incomes. GO delivery has failed to take advantage of opportunities to work with farmer groups.
6. The private sector is a significant player in the extension arena and advice from the private sector is less correlated to income or farm size – equity of access is higher. The concept that extension service providers are broadly either GO or NGO is disproven.
7. NGO services, whilst tending to favor working with women, are diffuse, managed by a large number of organisations of variable size, have very low national coverage, and also tend to work with farmers in larger farm households with higher incomes.

Annex 1: Graphs

Note:

Income category 1= Daily per capita income of <Tk 15
Income category 2= Daily per capita income of =>Tk 15 to <59
Income category 3= Daily per capita income of =>Tk 59

Annex 2: Output Tables

Note:

In the majority of cases, the following tables are presented in pairs. The first table of each pair contains data for male respondents (and is denoted by 'a' e.g. Table 2a). The second table of each pair contains data for female respondents (and is denoted by 'b' e.g. Table 2b).

Output tables have been grouped under the following headings:

1. Sampled households
2. Agricultural practices
3. Hiring (machinery, draught power, labour)
4. Households receiving services advice from ESPs
5. Use of advice/ services
6. Group approaches
7. Melas
8. DAE specific
9. Services/ advice from other farmers
10. Mass media
11. Group membership
12. Awareness
13. Accessibility
14. Data in perspective

Annex 3: Methodology

Hypotheses

The ECS '03 was designed to answer the following hypotheses:

Hypothesis	Possible Causal Relationships
Contact:	
1. During the last twelve months male and female members of households operating smaller landholdings received fewer services or advice from ESPs than male and female members of households operating larger landholdings.	<ul style="list-style-type: none"> – The larger the farmer category the greater the social and economic power to command access to ESPs; – The larger the farmer category, the greater the knowledge of local ESP services that are available; – ESPs give more attention to large farmers because these farmers have greater capacity – land, labour, financial resources – to implement the advice/ services provided by the ESP.
2. During the last twelve months female farmers received more services or advice from NGO as opposed to GO ESPs. Male farmers received more services or advice from GO as opposed to NGO ESPs.	NGOs have tended to fill the gap of GO ESPs that have traditionally focussed on the relatively larger, male farmer.
3. During the last twelve months male and female members of inaccessible households received fewer services or advice from ESPs than male and female members of relatively accessible households.	For relatively accessible households: <ul style="list-style-type: none"> – They are closer to the source; – It costs less to travel to the source; – It takes less time to travel to the source.
4. During the last twelve months NGOs gave more services or advice in all sectors to male and female members of households operating smaller landholdings than GO ESPs. GO ESPs gave more services or advice in all sectors to male and female members of households operating larger landholdings.	NGOs have tended to fill the gap of GO ESPs that have traditionally focussed on the relatively larger, male farmer.
5. During the last twelve months GO and NGO ESPs gave more services or advice to male and female members of households with low income per capita than male and female members of households with high income per capita.	In recent years there has been a tendency among GO and NGOs to target relatively poorer households.

6. GOs and NGOs provide services or advice to male and female farmers through a group approach rather than an individual household approach.	In order to improve outreach (efficiency), NGOs and GOs are giving advice to farmer groups as opposed to one-to-one advice.
7. 'Other' farmers and mass media are a significant source of extension services or advice for all categories of farmer	Farmers tend to seek advice from other farmers and mass media since it is relatively accessible and less expensive. Due to the limited number of ESP personnel, mass media and 'other' farmers are an important source of advice/ services for farmers
<u>Use of ESP Advice/ services</u>	
8. During the last twelve months a higher proportion of male and female household members operating larger landholdings than male and female household members operating smaller landholdings trialed the last advice they received and got a good result.	Farmers operating larger landholdings are likely to be less risk averse.
<u>Knowledge/ Awareness of ESPs</u>	
9. A higher proportion of male and female members of households operating smaller landholdings are unaware of ESPs operating in the Upazila than male and female members of farmers operating larger landholdings.	ESP's give more attention to large farmers because these farmers have greater capacity – land, labour, financial resources – to implement the advice/ services provided by the ESP.
10. A higher proportion of female than male farmers are aware of NGO ESPs operating in the Upazila and a higher proportion of male than female farmers are aware of GO ESPs operating in the Upazila.	<ul style="list-style-type: none"> – Due to constraints on female contact with outsiders. – NGOs have tended to fill the gap of GO ESPs that have traditionally focussed on the relatively larger, male farmer.
11. Higher proportions of male and female farmers of accessible households compared to male and female farmers of inaccessible households are aware of ESPs operating in the Upazila.	More accessible farmers have greater contact with ESPs.

Stratification

In order to answer the above hypotheses, a sample of farmers (male and female) from each of the following categories would first need to be identified and then 'questioned':

	Hh's with low income per capita (Tk a-b per capita p.a.)	Hh's with mid income per capita (Tk c-d per capita p.a.)	Hh's with high income per capita (Tk e-f per capita p.a. ¹⁵ .)
Landless			
Marginal			
Small			
Medium			
Large			

Sampling technique:

Considering the balance between logistical and statistical efficiency, the following approach was suggested:

Cluster sampling: Randomly select 20 Districts (from 62¹⁶). List all Upazilas and randomly select 70 (from approximately 145 Upazilas in these 20 Districts). List all villages and randomly select 75 villages from these Upazilas.

From these 75 villages collect sample frame (in order to determine household income per capita and size of land operated.)

From these households for which sample frame data exists randomly select sampled households (see below for sample size).

Sample size:

We are concerned with attributes (i.e. the percentage of a population who have particular characteristics such as being visited by an ESP) rather than continuous variables.

The formula to use is shown below, where:

- P = the likely value of the percentage. If we are unsure of the expected value then we can simply maximise the value by using P = 50.
- Z = the level of confidence
- X = the level of required precision e.g. +10%

Given that our hypothesis specifies direction of change (e.g. greater distance = less services) then one-tail tests are appropriate.

Suppose we want to be 90% confident with a precision (accuracy) level of 10% then the value of 'n' will be 41 (see below)

¹⁵ Income ranges for the three categories will be defined once sample frame data has been collected.

¹⁶ There are a total of 64 Districts. The survey will not be conducted in Rangamati or Khagrachari to avoid safety and logistical issues.

In practice, we do not really know P so it is best to maximise that part of the formula by using P = 50.

$$n = \frac{z^2 * P * (100-P)}{X^2}$$

$$n = \frac{1.28^2 * 50 * (100 - 50)}{10^2}$$

$$n = 41$$

Assuming a sample size of 41, and the multiplication factor of 2 since we are using clustered sampling, this equates to a total sample size of 15 categories x 41 per category x 2 = 1,230 households. We are talking to males and females in each household separately which equates to a total sample size of 1,230 x 2 = 2,460.

Hypothesis 'c' indicates that we need to stratify according to 'accessible' and 'inaccessible' households. Rather than undertaking pre-survey stratification we undertook post survey stratification.

We are stratifying by gender i.e. male responses v's female responses. The sampling unit is the household. There were two questionnaires per household, one for the men, the other for the women.

After 'cleaning the data' we were left with 1,108 households from 70 villages¹⁷. These households are in the following categories:

	% (and no.) of households			Total
	Daily per capita income of <Tk 15	Daily per capita income of =>Tk 15 to <59	Daily per capita income of =>Tk 59	
Landless	103	106	15	224
Marginal	108	102	35	245
Small	101	104	59	265
Medium	96	106	45	247
Large	24	81	23	128
Total	432	499	177	1,108

Note: where possible, slightly more households than the required 82/ category were interviewed to allow for enumerator errors.

A sample of 82 households was ideally required per category. This was not achieved in some of the categories. This does not create a major problem. For example we can still analyse the data by comparing Large households with Landless households (since there will be => 82 households in these categories.) Similarly, we can still analyse the data by comparing relatively low income per capita households with relatively high income per capita households.

¹⁷ Data from 3 villages was not collected due to flooding and data from 2 villages was not of a high enough quality to be used.

Sample Frame

The purpose of the sample frame was to collect information about the following:

- total household income (from all members of the household) during the last twelve months,
- size of land operated (at the time of the evaluation)

Sample frame contained information on up to 150 households¹⁸ per village in 70 villages.

A questionnaire was designed in order to determine a household's income per capita and size of land operated. From this sample frame the required sample size was drawn (in addition to extra households for the 'reserve list').

Involvement of ESP staff

In order to build capacity and to ensure wider acceptability of the results a number of representatives from other ESPs were involved in each of the key stages of the survey. These representatives include:

Name	Designation
Md. Mustafizur Rahman	Deputy Chief, Evaluation Section, PEW, DAE
Md. Noorul Islam Mia	Livestock Statistical Officer, Dept. of Livestock Services, Farmgate, Dhaka
Mr. Rozario	Co-ordinator, Caritas, 2 Outer Circular Rd., Shantibagh, Dhaka-1217
Dr. S.C. Biswas	Seed Technologist, BRAC, 75 Mohakhali, Dhaka
Bijoy Ranjan Saha	Assistant Director, Department of Fisheries
S. M. Golam Mowla	Assistant Conservator of Forests, Forest Department

Selection/ Training of Enumerators

26 experienced male enumerators were invited to attend a two-day training on the sample frame questionnaire. These enumerators had either worked with the ASIRP M&E Unit, CARE or DoF as independent enumerators previously and had therefore been 'tried and tested'. 19 of the strongest enumerators were selected. Each of these 19 enumerators collected data from an average of 3-4 villages, their primary source of information was key informants from the village and male members of the household above the age of 18¹⁹.

For the 'main questionnaire' female enumerators were required in addition to male enumerators. As in the case of the sample frame training, 29 enumerators were invited to attend a two-day training on the main questionnaire. 12 male and 8 female enumerators were selected. The skills of the selected enumerators were refreshed one week later for one day just prior to data collection activities. 12 teams (8 teams consisting of 1 male and 1 female enumerator) collected data from an average of 5-

¹⁸ For the purpose of the sample frame, it would be too time consuming and costly to collect information on every household in all 75 villages e.g. in villages where the number of households exceeds 500. Data will only be collected from 150 randomly selected households per village (if there are more than 150 households in the village.)

¹⁹ Refer to the Sample Frame guidelines for further details on the methodology followed.

6 villages. Male and female enumerators collected data from male and female respondents of the selected households respectively²⁰.

Monitoring Data Collection Activities

ESP partner representatives were invited to visit the field to monitor progress/ quality. Some of the partners also met with a sample of the enumerators to assess their quality.

Throughout the data collection period two 'field monitors' were employed to check on the quality and progress of the enumerators. Their task was to verify if the enumerator had actually visited the nominated household and to re-ask some of the questions on the questionnaire.

Key dates

Date	Activity
May 2003	Draft questionnaire design
Last week May	M&E Unit of ASIRP field testing questionnaires
3 rd June	Field testing with partner ESP representatives
29/ 30 June	26 enumerators trained for purpose of sample frame.
July	Sample frame data collection
Early August	Analysis/ categorisation of sample frame data and random selection of sample households
10/ 11 August	29 enumerators trained for purpose of main questionnaire.
19 August to mid-September	Main questionnaire data collection
October/ November 2003	Data analysis/ reporting

List of Villages/ Unions/ Upazilas/ Districts from where data was collected

Villages to visit	Union	Upazila	District
1. Manu Bhuiyan Para	Mayani	Mirsharai	Chittagong
2. Bara Para	Dattapara	Lakshmipur Sadar	Lakshmipur
3. Uttar Durgapur	Mandari	Lakshmipur Sadar	Lakshmipur
4. Char Basu	Char Kadira	Ramgati	Lakshmipur
5. Pathan Para	Kachua	Saghatta	Gaibandha
6. Purba Phulkocho	Baghbati	Sirajgonj Sadar	Sirajgonj
7. Goalnagar	Goalnagar	Nasirnagar	Brahmanbaria
8. Kuchni	Noagan	Sarail	Brahmanbaria
9. Sola Para	Kamardaha	Gobindaganj	Gaibandha
10. Chandrakola	Isabpur	Dhamoirhat	Naogaon
11. Purmaidanga	Pathari	Sapahar	Naogaon
12. Katakachha	Gazaria	Fulchhari	Gaibandha
13. Hayatpur	Nagar	Khaliajuri	Netrokona
14. Pirujpur	Baratali Banihari	Mohanganj	Netrokona
15. Khajra	Khajra	Assasuni	Satkhira

²⁰ Refer to the 'main questionnaire' guidelines for further details on the methodology followed.

16. Rajnagar	Jogikhali	Kalaroa	Satkhira
17. Gosnatara	Gosnatara	Kawkhali	Pirojpur
18. Gobardair	Fingri	Satkhira Sadar	Satkhira
19. Baghbari Konabari	Katuli	Tangail Sadar	Tangail
20. Char Chaubaria	Dayna	Tangail Sadar	Tangail
21. Dharai	Idilpur	Sadullapur	Gaibandha
22. Kulaghat	Kulaghat	Lalmonirhat Sadar	Lalmonirhat
23. Mahesh Kangla	Kaoakola	Sirajgonj Sadar	Sirajgonj
24. Sonamukhi	Bangabari	Belkuchi	Sirajganj
25. Gaugachhia	Gaugachhia	Gazaria	Munshigonj
26. Eoz	Dukkhani	Madaripur Sadar	Madaripur
27. Pukuria	Kadambari	Rajoir	Madaripur
28. Abul Hasem Fakir Kandi	Kanthalbari	Shibchar	Madaripur
29. Madhya Majhdiar	Maricha	Daulatpur	Kushtia
30. Kismat Ghabtia	Maniand	Akhaura	Brahmanbaria
31. Fardabad	Purba Rupasdi	Bancharampur	Brahmanbaria
32. Panchpota	Mangalkot	Keshabpur	Jessore
33. Harinapota	Lakshmipur	Sharasha	Jessore
34. Uttar Raghunathpur	Krishnagar	Kaliganj	Satkhira
35. Purba Paril	Talam	Tarash	Sirajganj
36. Chhota Goja	Salanga	Ullapara	Sirajganj
37. Biswas Haldia	Dhopadanga	Sundarganj	Gaibandha
38. Kusaha Para	Ramjiban	Sundarganj	Gaibandha
39. Bengkanda	Patgram	Patgram	Lalmonirhat
40. Doani Pittiphata	Goddimari	Hatibandha	Lalmonirhat
41. Natna	Gosind Durgapur	Kushtia Sadar	Kushtia
42. Kashinatpur	Jhautia	Kushtia Sadar	Kushtia
43. Upar Konra	Hajinagar	Niamatpur	Naogaon
44. Gobindapur	Matinddhar	Patnitala	Naogaon
45. Rajahar Zinaut	Rajahar	Gobindaganj	Gaibandha
46. Ganeshpur	Kishoregari	Palashbari	Gaibandha
47. Panch Betuan	Dil Pasar	Bhangura	Pabna
48. Ranigram	Jatsakhni	Bera	Pabna
49. Kullagachha	Elangi	Kotchandpur	Jhenaidah
50. Gobipur	Buripota	Meherpur Sadar	Meherpur
51. Kashab	Kashab	Manda	Naogaon
52. Chak Jafrabad	Hapania	Naogaon Sadar	Naogaon
53. Hoesendanga	Jhilim	Nawabganj Sadar	Nawabganj
54. Maharkandi	Chandpur	Tazumuddin	Bhola
55. Radhanagar	Gauripur	Bhandaria	Pirojpur
56. Char Nipattashi	Pattashi	Pirojpur Sadar	Pirojpur
57. Chelabunia	Guarekha	Nesarabad	Pirojpur
58. Paramanandi	Maliat	Kaliganj	Jhenaidah
59. Bathangachhi	Manderbari	Maheshpur	Jhenaidah

60. Jangle-Jamir-Juri	Dohazari	Chandanaish	Chittagong
61. Farenga	Chunati	Lohagara	Chittagong
62. Paschim Kadalpur	Kadalpur	Raozan	Chittagong
63. Nayapara	Keochia	Satkania	Chittagong
64. Verakhali	Joradah	Harinakunda	Jhenaidah
65. Paschim Madla	Hakimpur	Shailkupa	Jhenaidah
66. Ramnagar	Bakaljora	Durgapur	Netrokona
67. Par Jhaul Baghabaria	Jhawai	Kamarkhanda	Sirajgonj
68. Tikria Bhita	Gandail	Kazipur	Sirajgonj
69. Paschim Atgharia	Sonakhara	Royganj	Sirajgonj
70. Aota Para	Sahapur	Ishwardi	Pabna

Villages that were 'dropped' from the original list of 75 villages:

Villages to visit	Union	Upazila	District
Ghona Para	Noapara	Debhata	Satkhira
Khosalpur	Kaikhali	Shyamnagar	Satkhira
Hazlabat	Khoksa	Khoksa	Kushtia
Raydanga	Kaya	Kumarkhali	Kushtia
Kairati Para	Harwal Chhari	Katikchhari	Chittagong