



Agricultural Services Innovation and Reform Project (ASIRP)

Agricultural Extension in Bangladesh: An Entitlement of All Farmers?

The Results of a National Extension Coverage Survey

December 2003



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Project**

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List of Acronyms	
ASIRP	Agricultural Services Innovation and Reform Project
ASSP	Agricultural Support Services Project
BRAC	Bangladesh Rural Advancement Committee
DAE	Department of Agricultural Extension
ECS	Extension Coverage Survey
ESP	Extension Service Provider
GO	Government Organisation
GoB	Government of Bangladesh
iPRSP	Interim Poverty Reduction Strategy Paper
NAEP	New Agricultural Extension Policy
NGO	Non Government Organisation

Chapter 1: Background

Who are the Farmers?

There are approximately 18 million farm households in Bangladesh (Table 1)¹. Most are landless or marginal farm operators – there are very few medium or large farm households, though these farmers have traditionally received greater extension support, particularly from the public sector. A large proportion of farm households live below the poverty line – 45% overall, though 64% of landless households are in poverty compared to only 16% in the large farm category.

Table 1: Farm Size Structure of Bangladesh

Farm Size (Acres)	Number (million) and Percentage of Households *	Proportion of Operated Area* (%)	Incidence of Rural Poverty (%)**
Landless (0.00 to 0.49)	9.39 (52.65)	4.50	64
Marginal (0.50 to 1.49)	4.19 (23.53)	18.50	44
Small (1.50 to 2.49)	1.87 (10.50)	18.20	34
Medium (2.50 to 7.49)	2.08 (11.65)	42.40	25
Large (Over 7.50)	0.30 (1.67)	16.40	16
Total	17.83 (100)	100.00	45

Source: *Bangladesh Bureau of Statistics (1996) and **Bangladesh Institute of Development Studies (2001)

What is Agricultural Extension?

Agricultural extension assists farmers to make efficient productive and sustainable use of their land and other resources. It is an educational process by which information / advice is generated, shared and used for decision making for farm / farm household livelihood development. The Agricultural Support Services Project (ASSP) and Agricultural Services Innovation and Reform Project (ASIRP) funded by the Government of Bangladesh (GoB), World Bank and UK Department for International Development have supported the strengthening of extension services in Bangladesh since 1992.

Who are the Extension Service Providers?

The agricultural extension system in Bangladesh comprises a multitude of governmental, non-governmental and private sector agencies. All these Extension Service Providers (ESP) are in the business of providing agricultural advice to farmers:

1. *Non Government Organisations (NGOs)*, traditionally providing advice to farmer groups allied to the provision of micro-credit for income generation, favoring to target their services towards women and smaller farm operators. The largest NGO ESPs include BRAC, Proshika and Caritas – each of which operate fairly discrete specialist services such as poultry business establishment or social forestry.
2. *Government Organisations (GOs)*, traditionally providing services to male farmers operating larger farm holdings, and historically using a one-to-one basis for providing advice. The largest GO ESP is the Department of Agricultural Extension (DAE), which has 10,280 field level Block Supervisors². Traditionally, DAE concentrate on providing crop advice to small/medium farmers (who operate 60% of land, but only represent 22% of farmers). Separate GO agencies deal with advice on livestock (the Department of Livestock Services), fisheries (the Department of Fisheries) or tree crops (the Forest Department).

¹ As opposed to 19.41 million rural households (Report of the Household Income and Expenditure Survey, BBS, 2003).

² DAE Strategic Plan (2002-2006): The current establishment at Block Supervisor level is 12,640 with 2,360 vacancies. GoB has recently approved a DAE proposal to recruit Block Supervisors to full establishment.

3. *Private sector organisations*, which are a more recent addition to the extension system, largely comprising seed, irrigation and fertiliser dealers (which expanded as a result of de-regulation in the 1990s) but also including private hatcheries, vets, fish/fry traders and village doctors. Information is usually provided to farmers at the point of sale.
4. *Farmers*, who continue to generate and share information amongst themselves with little outside involvement – historically, farmers have obtained most of their agricultural information from other farmers. Although farmers are ‘informal’ information sources, many ESPs have sought to strengthen farmer to farmer extension through the use of farmer groups, para-professionals etc. Importantly, the original source of information transferred by farmers may have been research or extension service providers.
5. *Mass media*, which although not a ‘separate’ service (the source of the message came originally from government, non-government or private sector agencies), acts as a significant source of information to farmers, independent of direct contact with an ESP.

The range of extension service providers has increased in recent years – there is now a high degree of pluralism, and quality is highly variable.

What is the GoB Extension Policy?

In 1996, the Government of Bangladesh recognised the multitude of ESPs in the country, and established 11 principles by which the extension system should operate. These principles were enshrined in the New Agricultural Extension Policy (NAEP), which sought to improve the effectiveness of extension services, particularly for the disadvantaged – women and smaller farmers being the priority. The NAEP was largely developed with the recognition that the public sector in particular needed to improve efficiency, effectiveness and targeting. The NAEP principles are:

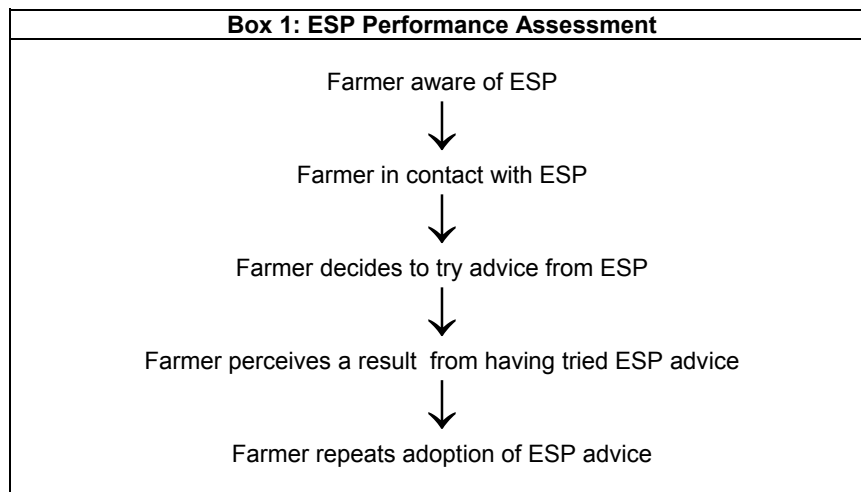
1. *Extension to all categories of farmers;*
2. *Efficient extension services;*
3. *Decentralisation;*
4. *Demand led extension services;*
5. *Working with groups of all kinds;*
6. *Strengthened research-extension links;*
7. *Training of extension personnel;*
8. *Use of appropriate extension methodology;*
9. *Integrated extension support;*
10. *Co-ordinated extension activities;*
11. *Integrated environmental support.*

The NAEP is fundamentally concerned with increased performance. This was particularly in light of the understanding that significant public and international development funds were being absorbed by ESPs. DAE alone had an annual (revenue plus development) budget in the region of £ 44 million in 2002/3. The NAEP sought improved performance against expenditure.

What is Agricultural Extension Performance?

Measuring the performance of an ESP is notoriously complex. Theoretically, a farmer will receive and assess information, may or may not take action as a result, and (should action have been taken) realise some benefit. This benefit is often multifarious, and might comprise changes in the use of agricultural inputs; changes in labor use or time allocation; changes in farm productivity (yields or outputs) or adjustment in any sphere of the farm household livelihood. Measuring such changes is hard enough – attributing them back to the provision of agricultural advice is almost impossible as so many other factors contribute to livelihood changes. One basic (imperfect) approach to service provider performance assessment is shown in Box 1. Farmers become aware of a source of extension advice (an ESP) and gain contact with that source. Advice is provided to the farmer, who understands a new idea and decides to try it on his or her farm. Practicing this idea produces a good result (in the farmers’ opinion), and the farmer decides to use the advice again.

There are many caveats to this performance model – not least the fact that farmers very rarely fully adopt 100% of advice provided – they frequently adapt ideas to their own needs and circumstances.



So, an ESP is performing well if:

- Farmers are aware of ESP existence (awareness);
- Farmers are in contact with the ESP (contact);
- Farmers use the advice provided by the ESP (use);
- Farmers get a good result from using the ESP advice (result);
- Farmers use the advice again (adoption).

At the same time, given the context of the NAEP in Bangladesh, an ESP would be performing well if it conformed to each of the 11 policy principles. Some of the policy principles are discrete and relatively simple to measure – for example:

- Extension to all categories of farmers – measurements of differential awareness and contact across gender, farm size and household income categories.
- Efficient extension services – measurements of the cost of services and the outcome in terms of farmer's testing or use of advice provided (assuming this principle is premised on economic efficiency).
- Demand led extension – measurements of the extent to which farmers are drawing services down from ESPs.
- Working with groups of all kinds – measurements of the extent to which farmers are involved in groups, and the level of contact between those groups and ESPs.
- Integrated extension support – measurements of the extent to which farmers are in contact with service providers that provide advice on all aspects of agriculture (crop, fisheries, livestock, etc.)

Chapter 2: Performance of Extension in Bangladesh

What was ECS 2003?

The Extension Coverage Survey 2003 (ECS 2003) was a formal sample survey administered with 1,107 male respondents and 1,108 female respondents in 1,108 households of 70 randomly sampled villages from 20 randomly selected districts. It was designed to specifically measure the key performance indicators identified, for a range of ESPs, in the context of the NAEP. The following sections highlight the main findings. Full results from ECS 2003 are available on the DAE web site (www.daebd.org). The full document contains definitions of awareness, contact, adoption etc. The results are significant as they represent a national macro picture of agricultural extension service performance in Bangladesh. ECS 2003 was designed and managed by a team drawn from BRAC, Caritas, and the Departments of Fisheries, Agricultural Extension and Livestock, with support and finance from ASIRP.

Are Farmers Aware of ESPs?

The majority of farmers³ in Bangladesh, particularly women in the smaller farm sizes or lower income categories, remain unaware of the main formal ESPs in both the government and non-government sector. Table 2 identifies key performance indicators. There is considerable gender disparity, even within the NGO community, who have invested heavily in targeting.

Table 2: Farmer Awareness of Main Extension Service Providers

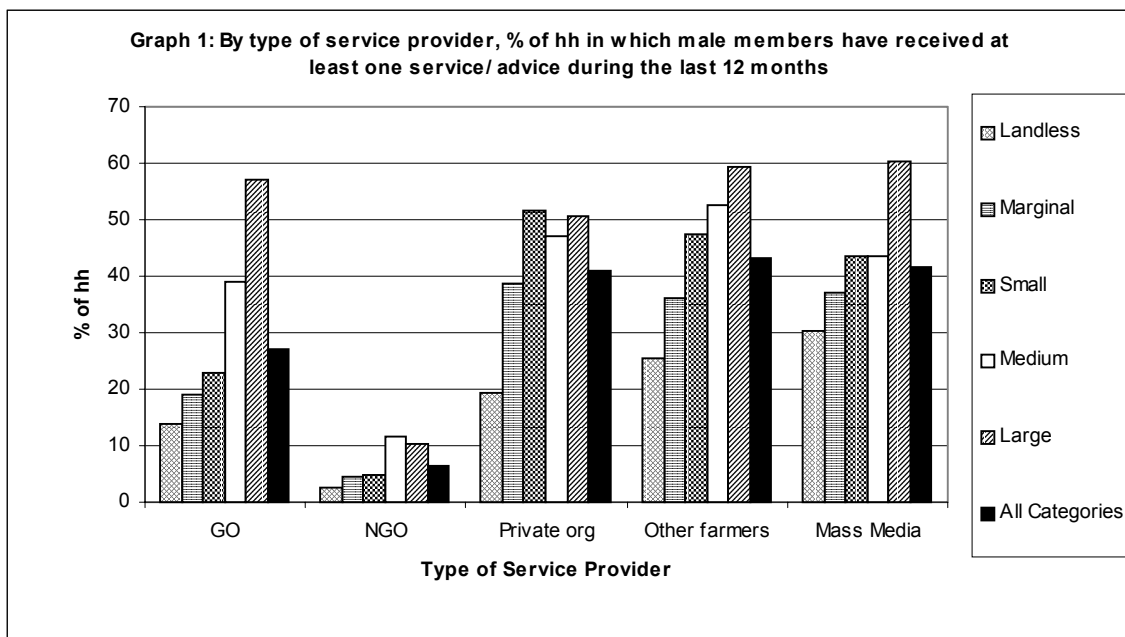
ESP	Male farmers aware (%)	Female farmers aware (%)
Non-government		
BRAC	66.8	37.8
Proshika	36.2	16.9
Caritas	33.9	17.3
Government		
DAE	57.3	18.6
DLS	62.9	25.3
DoF	30.9	8.8
FD	27.6	6.9

Similarly, ECS 2003 shows that the proportion of larger farm households aware of ESPs is greater than awareness in small farm households – particularly in the case of government service providers. A similar trend exists with household income – wealthier families are more likely to be aware of ESPs. There is thus farm size and income disparity as well as gender disparity.

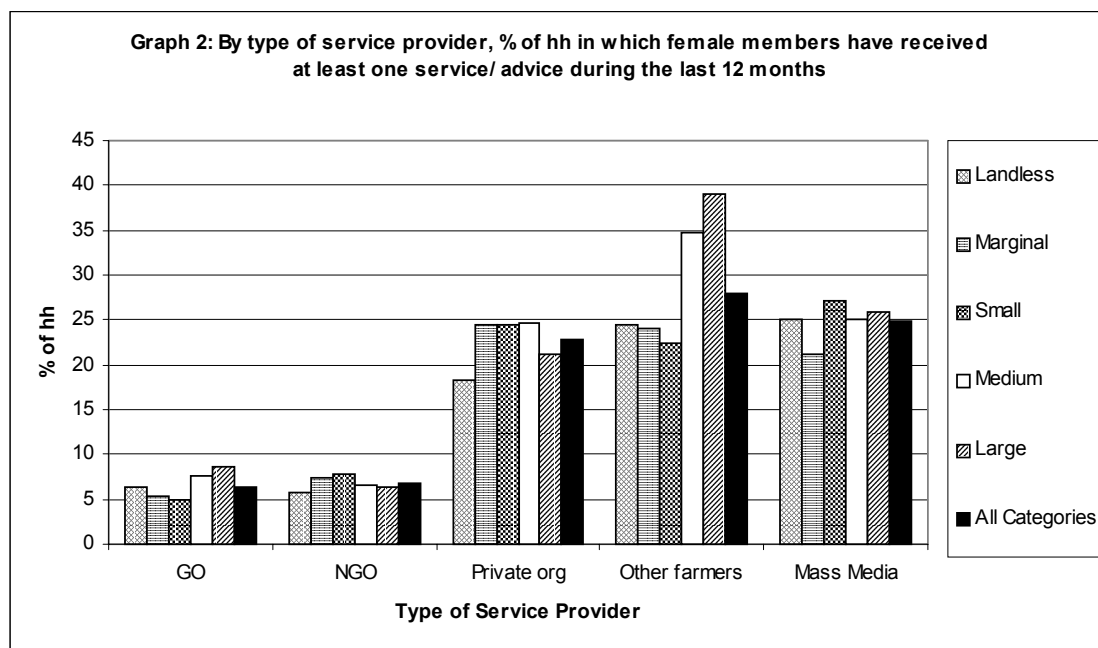
Are Farmers in Contact with ESPs?

Graphs 1 and 2 show that the majority of farmers in Bangladesh are not in contact with GO and NGO ESPs. For both male and female farmers, the main source of extension advice is other farmers, followed by private organisations.

³ ECS 2003 interviewed male and female respondents in the same household and thus determined proportions of households that were aware of service providers – this was also the case with contact, use of advice etc. Throughout this document this is expressed as the proportion of farmers. All ECS 2003 data relates to 'the last 12 months' – August 2002 to August 2003.



Mass media is a significant information source – though the advice channeled through mass media may have originated in any sector (GO, NGO or private). Much greater proportions of farmers (particularly male) are in contact with GO ESPs compared to NGO ESPs – GO performance is relatively high. Overall, 6.3% of female farmers in Bangladesh received a service⁴ from a GO, and 6.8% received a service from an NGO in the last 12 months.



Although more male farmers were aware of NGO ESPs than female farmers, the situation is reversed in terms of actual contact. Table 3 identifies contact rates for key individual ESPs.

⁴ The terms advice and service are used interchangeably throughout this document.

Table 3: Farmer Contact (last 12 months) with Main Extension Service Providers

ESP	Male farmers in contact (%)	Female farmers in contact (%)
Non-government		
BRAC	5.2	2.3
Proshika	0.1	0.5
Caritas	0.1	0.2
Government		
DAE	19.6	1.1
DLS	10.4	5.0
DoF	2.5	0.2
FD	0.5	0.3

Table 3 shows that BRAC is the NGO contacting the highest proportion of male and female farmers. DAE is the GO contacting the largest proportion of male farmers and DLS is the GO contacting the largest proportion of female farmers. Apart from DLS, service performance for female farmers is insignificant.

As with farmer awareness of ESPs, ECS 2003 data shows that there is generally a positive correlation between farm size and contact and between income category and contact. Gender, farm size and wealth disparity thus exists for contact as well as awareness of service providers, within a framework of overall poor performance.

Mass media results are interesting in that the majority of information was received via radio and television. Whilst 26.6% of male and 15% of female farmers got advice from radio, 25.3% and 13.4% got advice from television. Less than 2% of farmers got any advice from any source of traditional print media (posters, leaflets, newsletters, and newspapers)⁵.

The performance of private organisations is high – especially in the context of the limited support the private sector has received in terms of strengthening extension performance. Further, ECS 2003 shows that private sector advice is less related to income and farm size categories – equity of access is greater.

GO and NGO contact is limited. Moreover, farmers who do gain services from GO and NGO agencies appear to be in strongly established client bases. Thus, the 'spread' of GO and NGO services is limited across the country, but those farmers who are in receipt of services get them frequently. ECS 2003 shows that those households in which males are in contact with GOs receive services on an average of over 3.5 occasions in 12 months. NGO services to female farmers (one of their primary targets) are provided on over 4 occasions in 12 months. DAE services to their established male client base are provided on over 5 occasions in 12 months. There may be a policy argument for more broadly distributing advisory services, rather than ESPs perpetually serving their own small client constituencies.

⁵ ASIRP has also supported an evaluation of the NAEP media campaign. Preliminary results reveal the interesting scenario that television viewing has increased substantially in recent years – 47% of a national sample of 360 farmers were radio listeners, whilst 44% were television owners and 86% were television watchers. Although the sample was predominantly of landowners (hence showing high TV ownership), it does indicate the extent to which television is now watched in rural communities in Bangladesh.

Date in Table 3 includes farmer attendance at a *mela* (fair). This only makes a significant difference for DAE – excluding *mela* attendance, DAE contact with male farmers is 14.9% - relatively high performance. However, given the 18 million farm households in Bangladesh, contact at 19.6% equates to 3.5 million farm households. The existing Block Supervisor establishment of 10,280 therefore equates to one Block Supervisor contacting 343 households in a year. This is less than one household (one farmer) per day. There is substantial room for improvement, especially in the context of the recent GoB decision to recruit to full establishment (12,600). Given the total cost of DAE (£ 44 million in 2002/3), the cost of delivery is £ 12.57 per household per year⁶ – this could be significantly reduced.

Do Farmers Use ESP Advice?

Results across the board in terms of farmer use of advice are positive. Male and female farmers invariably either fully or partially try the advice they receive (irrespective of source), get good results and intend to repeat adopt. Table 4 shows key performance indicators.

The policy lesson identified in “Performance of Extension Services: Quality or Quantity” (ASIRP 2003) is confirmed – the quality of agricultural extension advice in Bangladesh is thought to be high, the problem is quantity, or farmer access/entitlement to the advice or service.

Table 4: Farmer Use of Extension Service Provider Advice

ESP / Source of Advice	Male farmers fully using advice (%)	Female farmers fully using advice (%)
All ESP Advice	86.9	90.0
DAE	75.0	91.0
Other farmers	75.0	82.9

Further to Table 4, over 89% of advice given to both male and female farmers from ESPs (irrespective of source) ended with a good result. Over 94% of advice received by both male and female farmers will be tried/used again in the future. Advice offered by ESPs appears to be useful, beneficial and produces results. Nonetheless, some caveats apply. First, these are benefits as perceived by farmers within the last year – thus, there has been little time for farmers to make a real assessment of the utility of the advice. Also, most agricultural extension programmes in Bangladesh are supported with the provision of free inputs, particularly in the case of crop demonstrations – it is therefore not surprising that where farmers are in contact with an ESP, advice is fully used. Conditions on the next possible occasion on which a farmer could practice the new idea are likely to be different. Thus, although ECS 2003 identifies a high rate of advice use, care should be taken in assuming high quality extension services across the board. Even where farmers claim intention to repeat adopt, this would most likely be accompanied by adaptation as time passes to better fit new ideas with farming realities – thus farmers may change (adapt) seed rates; plant spacing; feed mix ratios etc. Finally, there is some anecdotal evidence that extension services on occasion provide highly inappropriate or inaccurate advice, leading to farm / household losses – for example, in the areas of using banned pesticides, or recommending the use of chemicals to control incorrectly identified plant disease. This anecdotal evidence does not fit well with ECS 2003 results.

⁶ This is close to the estimate of £ 18.29 per household per year provided in ASIRP 2003 “Agricultural Extension with DAE: A 10 Year Review”

Chapter 3: Policy Compliance

Which Policy Principles can ECS 2003 Verify?

ECS 2003 was not designed to provide information to verify every one of the 11 NAEP principles. However, the data generated is specifically useful for checking the NAEP implementation compliance of five principles:

- Extension to all categories of farmer.
- Efficient extension services.
- Demand led extension.
- Working with groups of all kinds.
- Integrated extension support.

It would only be possible to make vague inferences concerning the implementation of the remaining six NAEP principles, so these are not considered in this Chapter. Whilst considering the answers to the following questions it is useful to recall that the NAEP has been in place since 1996, some 7 years.

Are all Categories of Farmer Receiving Extension?

The basis of this policy principle was the recognition that most extension services (particularly GO) mainly benefit male farmers operating larger farm sizes – the issue was equity. ECS 2003 data shows that in general, all categories of farmer do receive extension support. However, male operators of larger farms in the higher income categories are more likely to do so than women operating smaller farms and/or in lower income categories. This is generally irrespective of service provider. Table 5 identifies the proportions of farmers receiving a service in the last 12 months.

Table 5: Service Receipt by Category of Farmer

Farm Household Category	Received a GO Service (%)		Received an NGO Service (%)	
	Male	Female	Male	Female
Income Categories				
Households on daily income of below Tk 15	20.6	4.9	6.3	9.2
Households on daily income of above Tk 59	37.0	6.8	8.5	12.4
Farm Size Categories				
Landless households (up to 0.49 acres)	14.0	6.3	2.7	5.8
Large farm households (over 7.5 acres)	57.0	8.6	10.2	6.3

This aspect of NAEP implementation is particularly weak. This is disappointing given the significant investment in attempting to adjust governmental service provider targeting. In fact, ECS 2003 shows private sector advice is less correlated with farm size or income than advice from other sources – access is more equitable. For DAE, even the argument that crop extension support should be provided to farmers with land (in order to boost production) does not seem to hold. Over 41% of farmers in the large farm category (over 7.5 acres) receive DAE services but they only cultivate 16.4% of land in Bangladesh whilst only representing 0.3% of farmers.

Are Extension Services Efficient?

The basis of this policy principle was that extension needed to justify the large financial investments by providing a return – the issue was cost-effectiveness. ECS 2003 did not collect data on the cost of ESP services. However, some ECS 2003 data does verify efficiency:

- For male farmers, 86.9% of ESP advice is fully used, 89.6% of advice produces a good result, and 95% of advice will be tried/used again in the future.
- For female farmers, 90% of ESP advice is fully used, 89.9% of advice produces a good result, and 94% of advice will be tried/used again in the future.
- Male farmers fully adopt 75% of advice from DAE, and 92.5% of that advice produces a good result, and 94.7% of advice will be tried/used again in the future.

Though this does not verify that the services are totally efficient, it does show that the service is perceived as useful. All farmers, irrespective of gender, farm size or income, generally used ESP services and gained a benefit – services seem to have quality where/when they are made available. However, caveats apply – these are farmers perceptions over a short period of time, and their first use was likely to have been accompanied by ESP support that may have included input provision. Farmers that did receive services were certainly provided with significant support – NGOs provided services to their female clients on average 4 times per year, whilst GOs provided services to their male clients on average 3.5 times per year.

Is Extension Demand Led?

The basis of this policy principle was the understanding that top-down planning had failed and farmers needed to be central to extension planning and implementation – the issue was increasing farmer demand. The concern with farmer demand is frequently linked to arguments in favor of working with groups – farmers in groups are in theory more powerful/capable of drawing down (demanding) services from ESPs. ECS 2003 provides a level of confirmation – results in Table 6 show male and female group members are in contact with more ESPs more frequently.

Table 6: Group Membership (Formal Groups Discussing Agriculture) and Services Provided

Service Provision	Male Farmers		Female Farmers	
	Group Members	Non-group Members	Group Members	Non-group Members
Average number of ESPs in contact	1.9	1.0	0.9	0.3
Average number of occasions contact is made in 12 months	6.0	2.5	2.7	0.6

Similar evidence of farmer demand for extension through group based forums has emerged through other work supported by ASIRP – particularly Farmer Led Extension and results of projects supported through the Partnership Initiative Funds⁷. However, this has always been in the context of farmer groups.

There is little evidence that agricultural extension in Bangladesh on a macro scale is characterised by farmer demand. Even projects supported via the Partnership Initiative Fund were not based on initial farmer demand. This aspect of NAEP implementation therefore remains weak.

⁷ Evaluation reports of both Farmer Led Extension and the various Partnership Initiative Funds have been published separately by ASIRP and are available at www.daebd.org.

Does Extension Work with Groups of all Kinds?

The basis of this policy principle was a recognition that extension staff could serve more clients if they worked with groups rather than on a one-to-one basis – the issue was related to cost-effectiveness. It was also tied to an understanding that NGOs had achieved a measure of success in group based approaches and GOs needed to move down the ‘working with groups’ path. ECS 2003 shows that this movement has not generally occurred:

- Many farmers are members of formal groups – 22.5% of households have at least one male member in a group and 20.6% of households have at least one female member in a group⁸.
- Many groups discuss agriculture (36% of groups with male members, 64% of groups with female members) Thus of all farm households, 8.1% have a male in a group that discusses agriculture, whilst 13.2% have a female in a group that discuss agriculture.
- Most advice provided by GO ESPs is in the presence of only 2-4 farmers (49.2% of advice to male farmers and 49.3% of advice to female farmers), or on a one-to-one basis (34.2% of advice to male farmers and 20.5% of advice to female farmers).
- Only 16.6% of GO advice is delivered to male farmers in a group⁹ forum, though 30.2% of GO advice to female farmers is through a group forum.
- The majority of NGO advice is delivered through a formal or informal temporary group forum (40.7% of advice to male farmers and 82.5% of advice to female farmers).

GOs (including DAE) have generally failed to introduce ‘working with groups’ (both formal/permanent plus informal/temporary), and this aspect of NAEP implementation is weak. NGOs remain biased towards service delivery through groups, but this was the case prior to the NAEP anyway. There do remain equity concerns over working with groups – ECS 2003 shows that 39.0% of households with a male group member are from the large farm category – only 17% are from the landless category. The situation is somewhat reversed for households with a female group member where only 12% are from the large farm category and 25% are landless.

Is Extension Support Integrated?

The basis of this policy principle was a concern that (particularly in the GO sector) most advice was being given to farmers in the area of field and homestead crops (the DAE ‘core function’). The issue was that farmers operate diverse mixed farms and need integrated advice on all aspects of agricultural production, not just crops. ECS 2003 tells us that advice on most aspects of agriculture is available, with differentiation between service providers and subject. Table 7 identifies service differentiation on the basis of subject.

Table 7: Differentiation of Advice¹⁰ Provided

ESP / Source	Subject of Advice Provided to Male Farmers (% of advice)	Subject of Advice Provided to Female Farmers (% of advice)
GO	Crop (35%) and livestock (28.2%)	Livestock (42.5%) and poultry (31.3%)
NGO	Crop (50%) and vegetables (20%)	Vegetables (57.5%) and poultry (15.1%)
Private Organisations	Crop (59.3%) and livestock (16.7%)	Poultry (65.2%) and livestock (12.3%) and vegetables (11.6%)
Mass Media	Fruit trees (27.6%) and forest trees (25.6%)	Fruit trees (29.7%) and forest trees (20.9%) and vegetables (19.2%)
Other Farmers	Crop (47.9%) and livestock (16.5%)	Poultry (48.1%) and vegetables (26.5%)

⁸ The widespread existence of farmer groups was the rationale for DAEs strategic choice to work with existing groups as part of its Revised Extension Approach (1996). However, on the ground, ESPs (including DAE) have failed to take advantage of the opportunity of providing extension services to groups.

⁹ A group is defined as having five or more members.

¹⁰ Data relates only to the last advice received by farmers.

Differentiation can be an efficient means of organising an extension system, as long as there is equity of access by all categories of farmer to advice from different sources. This is clearly not the case in Bangladesh – equity of access remains a core problem.

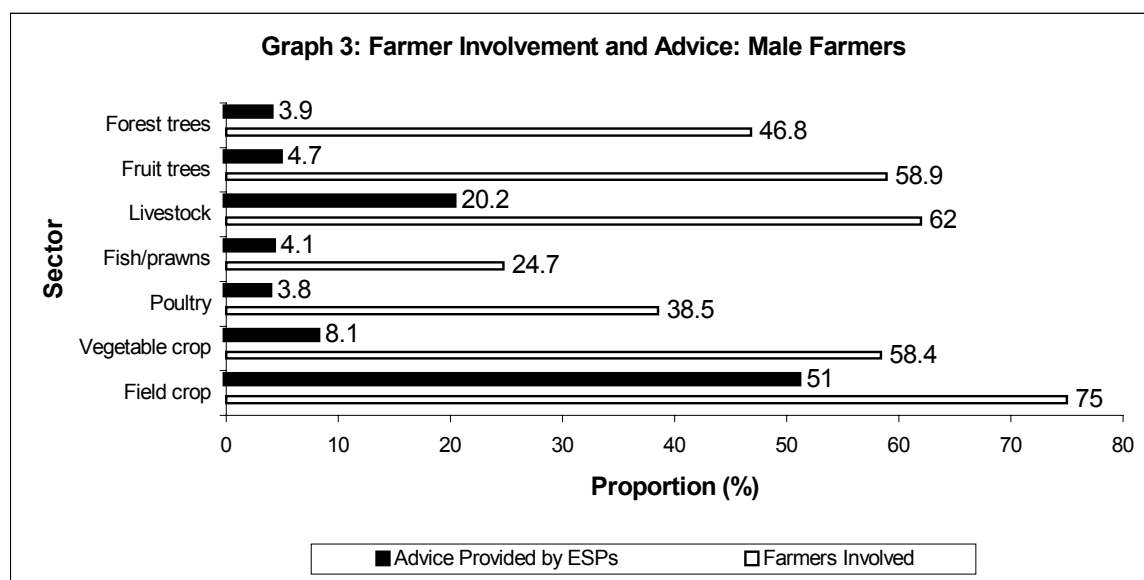
Although services are differentiated by subject, there is a major system bias toward crop production. Indeed, ECS 2003 reveals that over 85% of all DAE advice is crop based (66.6% field crops; 19.6% vegetable crops). Similarly, 70% of all NGO advice is crop based (50% field crops, 20% vegetable crops). Likewise, over 59% of advice from the private sector is crop based.

Given the policy requirement for “the Department of Agricultural Extension [to] offer services to farmers in the area of livestock, fisheries and forestry” (NAEP, 1996:8), this aspect of policy compliance is weak.

In contrast it is interesting to note that of 41% of male farmers and 22.9% of female farmers gain advice from mass media. For both male and female farmers, over half of this advice is related to tree crops – mass media is filling an information gap in tree crop extension – the Forest Department is only directly contacting 0.4% of male farmers and 0.2% of female farmers.

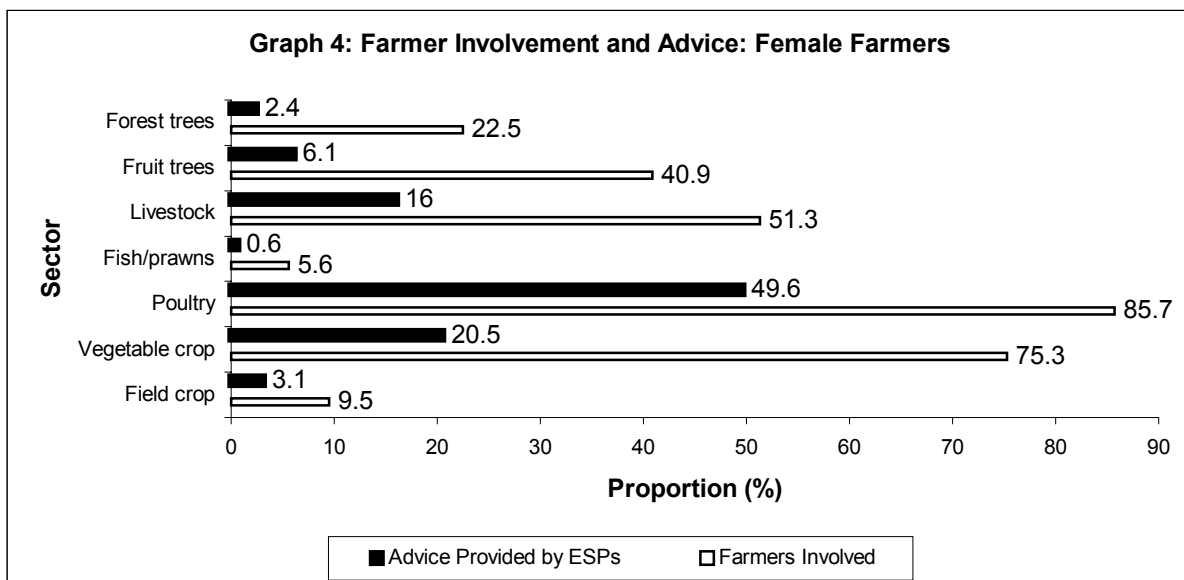
Given the diverse nature of farming in Bangladesh, it is useful to compare the extent to which farmers are involved in field crop, vegetable crop, poultry, fisheries, livestock and silviculture, with the extent of advice provided. This would identify gaps in the advisory framework. Analysis is presented in Graph 1 (for male farmers) and Graph 2 (for female farmers). Both graphs refer only to direct contact – *mela* (fair) and mass media are excluded.

Graph 3 shows that, for example, 46.8% of male farmers are involved in forest tree cultivation, whilst only 3.9% of all ESP advice received by male farmers is in this subject area. Clearly, the greater the gap between farmer involvement and advice provided, the greater the mismatch of advisory services. Graph 1 shows that the largest information gaps for male farmers are in fruit and forest trees; poultry; vegetable crops and fisheries. Gaps in the other sectors need to be filled by the extension system.



Graph 4 shows, for example, that 85.7% of female farmers are involved in vegetable cultivation, whilst 20.5% of all ESP advice provided to women is in this subject. The greater the gap between farmer involvement and advice provided, the greater the mismatch of advisory services.

Graph 4 shows that the largest information gaps for female farmers are in fruit and forest trees; fisheries; and vegetable crops. Given the predominance of mass media for silviculture, gaps in fruit and forest trees may not be a serious problem (this applies to both male and female farmers). Gaps in the other sectors need to be filled by extension.



There is a significant policy implication – ESPs need to more effectively target their advice in terms of subject matter, and move towards closing information gaps in fruit and forest trees; poultry; vegetable crops and fisheries (for men) and fruit and forest trees; fisheries and vegetable crops (for women). Note that mass media concentrates on fruit and forest tree subject matter (Table 7), so this may not be a serious problem.

Nonetheless, the predominance of ESP interest in field crop extension needs to decline in favor of attention to other subject areas that support diversification and whole farm agriculture. The whole issue relates to a requirement for the extension system and its information market to be managed.

The relationship between farmer involvement and advice provided must be offset against the fact that the majority of farmers in Bangladesh received no services/advice at all (data is shown in Table 3, Page 7).

Chapter 4: Conclusion

What are the Main Policy Lessons?

The main policy findings drawing from this analysis of ECS 2003 are:

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. The national agricultural extension system is not performing as envisaged in the NAEP, and the system is not being managed in order to match supply with demand.
3. Those elements of the national agricultural extension system that are performing the best are those to whom the NAEP pays little attention – farmers themselves, private organisations and mass media.
4. 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.
5. Despite a 12-year programme of institutional, strategic and service reform in DAE, little has changed on the ground¹¹, and DAE itself has largely failed to implement its own Revised Extension Approach.
6. 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.
7. The system is biased towards field crop extension, followed by vegetable crop extension. Farmer's are engaged in diverse agricultural practices and there are significant gaps in the delivery of advice on other sectors – such as poultry.
8. Mass media appears to be supporting information dissemination on the subject of fruit and forest trees – this is positive.
9. 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.
10. 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.
11. The true role of public sector GoB extension services remains undefined – no incisive decisions have ever been made. GO service provision remains relatively 'large' but pluralism has increased. There are now more NGOs, the private sector has emerged, and farmers work more in groups whilst continuing to share agricultural information with one another. What is the modern role for GO services? The recent GoB decision to recruit more DAE Block Supervisors might be contradictory to the emerging pluralism of extension service provision, particularly in the context of the interim Poverty Reduction Strategy (iPRSP).

These lessons tend to indicate that the NAEP itself is somewhat dated. The NAEP paid little attention to the role of the private sector or farmers themselves. The NAEP also paid little attention to the strategic use of mass media. Poverty targeting was not explicit in the NAEP – which preferred to refer to providing support to 'all categories of farmer' whilst promoting 'demand led extension' which has a propensity to default to larger wealthier farmers with the capacity to 'demand'. Weaknesses aside, the NAEP was a GoB approved policy – however, the fact revealed consistently through the work of ASIRP is that the policy never left paper for practice – a common phenomenon in Bangladesh. Even with the considerable implementation support provided by ASSP/ASIRP to DAE in implementing the NAEP, the policy has never been truly internalized by the Department.

¹¹ ASIRP have published a series of reviews of the 12 year reform process – particularly relevant here is "Agricultural Extension with DAE: A Ten Year Review" (ASIRP, November 2003)

ASIRP support to reviewing and revising the NAEP in 2002/2003 was suspended in the context of ASIRP withdrawal from sector wide debates – largely because processes being supported by DANIDA were deemed to take precedence. There would seem little value in continuing to support the promotion of the 1996 NAEP.

Despite apparent poor extension performance, agriculture in Bangladesh continues to grow. Total food grain production rose from 15 million tons in 1981 to around 25 million tons in 2001. Farmers are adopting and adapting new ideas and increasing farm productivity. There is little evidence that this (or growth trends in other agricultural sectors) has much to do with agricultural extension service provision. Agriculture has continued to diversify in the face of continued extension concentration on crop farming. Crops represented 73% of total agricultural GDP in 1996/7, falling to 56% in 2001/2002, and it is expected to fall to 47% by 2020. Extension needs to diversify quicker than agriculture if it is to lead the change process rather than follow it. Similarly, extension needs to be able to respond quickly to changes in the (location specific) market for extension information. This is particularly important because of the increasing non-land based opportunities that have the potential to enable agriculture to contribute more effectively to poverty reduction.

Agricultural changes in Bangladesh in the last two decades would appear more related to macro-policy decisions (particularly trade regulation/deregulation). Adoption of 'modern' agricultural technologies has supported agricultural growth, but is unlikely to have been linked to extension service provision. Table 8 identifies the change in irrigation and the use of modern varieties (MV) in Bangladesh. Both expanded rapidly due to deregulation and technology availability, though more recently the rate of expansion has declined – a common 'adoption curve' for agricultural technologies. There appears no correlation with extension effort.

Table 8: Changes in Irrigation and Use of Modern Varieties in Bangladesh

Year	Irrigated Area as % of Total Cultivated Area	MV as % of Total Cultivated Area
1970	2.6	2.1
1980	12.8	20.0
1990	31.0	41.0
1995	43.0	50.0
2000	51.4	65.0

Future growth requirements in agriculture relate more to non-food grains (diversification). Table 9 shows population growth trend, related to expected supply and demand for milled rice – growth in the region of only 1 to 2 % per year in rice is required. Data in Table 8 reflect both price and household income elasticity.

Table 9¹²: Future Trends

Year	Rural Population (million)	Urban Population (million)	Total Population (million)	Population Growth (%/year)	Rice Demand (million tons)	Rice Supply (million tons)
2000/2001	98.9	30.3	120.2	1.6	23.0	22.4
2010	104.2	40.9	145.1	1.3	26.0	26.0
2020	103.0	57.7	160.8	1.1	28.0	29.1

¹² Data presented in both Table 8 and Table 9 are drawn from Sombilla M. Hossain and Hardy, B. (Eds), "Developments in the Asian Rice Economy", IRRI, 2002.

Dietary diversification commonly accompanies growth in household income, and population growth is gradually slowing. Agricultural diversification is a core challenge for agricultural extension services – in comparison with demand for cereal grains, growth in meat, fish and egg production in Bangladesh need to be in the region of 6% per year (and these sectors present opportunities for pro-poor change in line with the iPRSP).

Where do we go from Here?

Essentially, more of the same will not be sufficient to induce change in the national extension system, or to enable agricultural extension to perform a real role in agricultural development. Fundamental changes are necessary. Some lessons for the future emerge from this analysis of ECS 2003:

1. **Recognise** the true diversity of agricultural extension service provision – particularly the role of the private sector and farmers themselves. Identify potentials to strengthen both the private sector and farmer to farmer extension. Evidence indicates that the private sector remains a relatively simple operator (though larger than perhaps previously thought) – i.e. some advice is given to farmers, generally at the point of sale. Private sector extension has matured elsewhere (for example, India) to the point at which it funds demonstrations and other extension events for farmers; is strongly involved in contract growing (advice is provided as the private sector needs a quality product). Is there a role for GoB to enable and capacitate the private sector to meet the information needs of farmers rather than continue to provide almost monopolistic services directly? Likewise, farmers are organised in groups, and farmers do share information but systems remain underdeveloped – are there means of strengthening this? Are there synergies to be made by linking such farmer groups to private sector agencies?
2. **Encourage** a rights based approach to extension which would seek to ensure that all categories of farmer (particularly women and farmers in smaller farm households and on lower incomes) are aware of their rights to service provision. Support these categories of farmer in actively pursuing their rights. Enable agriculture to support poverty reduction. This does not imply monopolistic service provision by the state – it implies a managed range of service providers meeting the needs of the information market at all scales.
3. **Strengthen** the use of mass media in extension – particularly radio and television broadcasting. Whilst print media has been shown to have less coverage, it does remain of utility under some circumstances, but could be much better designed.
4. **Support** the continued reform of GO service providers – they will continue to exist in Bangladesh, and will continue to absorb significant public funds – performance and value for money remain important. GoB commitment to reform will be essential, but has clearly been lacking in the past.
5. **Build** capacity for the management of the extension system. System management is a necessity to match clients (with differing information needs) to service providers and means of accessing information – matching and differentiating supply and demand. Similarly, system management would need to be capable of shifting resources to match changing conditions. Local government, particularly at Union and Upazila level, may most appropriately do this – preferably with some sort of national regulatory support. System management would enable more rational choices to be made concerning government intervention, such that GO service providers could withdraw from well served market areas and concentrate on those less serviced by other agencies. Calls for system management do imply a debate on who should actually be managing GO grassroots extension staff – line agencies or local government itself? And should these grassroots staff be aligned behind subject matter specificity or genuinely take on a diverse approach to supporting rural livelihood development?
6. **Define** clearly the role of the public sector – large organisations with heavy staff burdens providing sector specific advice? Smaller regulatory agencies? Service orientations to better meet the diverse livelihood needs of the poor, or agricultural technologies for the landed? Clearly, one size does not fit all. Given high public expenditure on extension, efficiency remains necessary –GoB extension services need to ensure situation specificity to fill gaps in the extension market (which are geographically diverse).

7. **Develop** systems that ensure accountability – clearly define who is responsible to who and for what. At present, elements (of the extension system GO, NGO or private) are accountable to nobody (especially farmers and their organisations) for anything (particularly performance). ‘Payment for service’ has generally been confined to subject/time/location bound projects.

These lessons for the future are in line with the GoB interim Poverty Reduction Strategy (iPRSP) and other governmental policies, and certainly need to be taken on board in the process of moving towards a full PRSP for Bangladesh.

What remains less clear are opportunities for cost recovery – despite large investment through ASIRP in partnership initiatives, innovations in cost recovery were not forthcoming or tested and conclusions are not possible.

In relation to DAE, an important step has already been taken with the production of the Strategic Plan (2002-2006). Commitment to implementation remains to be seen, but the plan does specify specific performance indicators for the first time in DAE history. Annex 1 summaries the current position of these indicators on the basis of ECS 2003.

Despite the innovation evident in the DAE Strategic Plan, the underlying format is essentially more of the same – a large GO extension service with a heavy staff burden, biased towards traditional roles – the provision of advice across the country to ‘all’ farmers. Indeed, the NAEP itself did tend to reinforce monopoly provision of advice by the state – particularly DAE, by adopting the Block Supervisor as the conduit for information on livestock, fisheries and forestry as well as crops (NAEP, 1996:8). This is no longer appropriate in the context of plural state / non-state provision.

The extension system is characterised by a small number of relatively large services and a large number of relatively small services – there are inherent quality concerns and there is a definite role for system regulation. There is no reason why extension services should not be subject to some form of accreditation – particularly in the context of the growing role of the private (for profit) sector. The deconcentration of extension services in many countries has been accompanied by a shift in the role of the centre towards regulation¹³.

Given the national basis of ECS 2003 – possibly representing the first and only valid baseline of extension performance in the country, it is hoped that policy makers will both find the information of use, and act upon it.

¹³ Under current governance conditions (particularly the ‘rule of law’ and its enforcement) the introduction of genuine accreditation in Bangladesh would be extremely difficult.

Annex 1: Performance Indicators: DAE Strategic Plan 2002-2006

Introduction

The DAE Strategic Plan (2002-2006) sets out an ambitious reform agenda – it is available on www.daebd.org. Some of the principles in the strategic plan align well with the policy conclusions resulting from ECS 2003. These include commitments to broadening the range of advice offered (away from the crop focus); alignment with and support to local government and increasing service performance.

Performance Indicators

The DAE Strategic Plan sets five objectives, and there are a total of 16 objectively verifiable indicators (OVIs) that have been set to assess performance. ECS 2003 provides baselines for four of the OVIs under two of the objectives. Baseline figures from ECS 2003 are provided in the box below against the OVIs and objectives specified by DAE.

Objective / Objectively Verifiable Indicator	Baseline from ECS 2003
Provide Pro-poor Services	
1. The proportion of poor households ¹⁴ receiving at least one service from DAE increased by 50-55% by 2006 from the 2003 baseline.	The % of households in which at least one male member received a service from DAE during the last 12 months was 17.9%
Develop DAE as an Institution	
2. The proportion of households receiving advice from DAE and testing it increases by 2 fold by 2006 from the 2003 baseline.	In 2003, 19.6% of male farmers and 0.6% of female farmers received advice from DAE (including though a <i>mela</i>). In 2003, male farmers fully used 75% of DAE advice, whilst female farmers fully used 91% of DAE advice ¹⁵ .
3. The proportion of male and female farmers aware of the services of the Department increased from 19.1% and 4.0% respectively in 2000 to 30% in 2006. ¹⁶	In 2003, 57.7% of male farmers and 18.6% of female farmers were aware of the services of the Department. ¹⁷
4. The proportion of male and female farmers in direct individual contact with Departmental staff increased by 25% by 2006.	In 2003, 19.6% of male farmers and 0.6% of female farmers received advice direct from DAE staff (including though a <i>mela</i>).

Analysing the baseline under OVI number 4 gives a picture of the level of Block Supervisor contact with farmers. Given 18 million farm households in Bangladesh, contact at 19.6% equates to 3.5 million farm households. Given the existing Block Supervisor establishment of 10,280, this equates to one Block Supervisor contacting 343 households in a year. This is less than one household (one farmer) per day. There is substantial room for improvement, especially in the context of the recent GoB decision to recruit to full establishment (12,600).

¹⁴ Poor households are defined as those with an annual income of up to Tk 20,000 – equivalent to US \$ 1 per day or Tk 59 per day.

¹⁵ Given the extremely low contact level with female farmers, the target of doubling contact rate is inappropriate – the indicator needs to be reviewed. Review of performance targets may need to focus much more on improving service delivery for female farmers specifically. 2003 baseline figures relating to ‘fully using advice’ concern the first time the farmer tried a new idea. They can be equated with ‘testing’ as phrased in the OVI.

¹⁶ Baseline figures from 2000 are drawn from a formal sample survey – Extension Services Survey 2000 (ESS 2000). Results have been published separately by ASIRP – “Performance of Extension Service Providers in Bangladesh: Quality or Quantity of Service” (ASIRP, 2003).

¹⁷ The target for male farmers has been ‘reached’ – however, ECS 2003 used a less rigid definition of awareness than ESS 2000 – in future surveys to assess performance, DAE should use the ECS 2003 definition.