



USAID Agricultural Extension Support Activity (AESA)

Performance Evaluation of Agricultural Extension Service Center (AESC)

**Dhaka Ahsania Mission
CARE-Bangladesh and mPower**

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Performance Evaluation of Agricultural Extension Service Center (AESC)

Submitted to

Dhaka Ahsania Mission

House # 7 (2nd & 3rd Floor), Road # 2/1,
Banani, Dhaka, Bangladesh

Submitted by

Moin Us Salam, PhD

Consultant

USAID AESA Project

C1 (Dishari) - 10, BRRRI Residential Area

Bangladesh Rice Research Institute (BRRRI)

Gazipur-1701, Bangladesh

Mobile: +8801855871938

Email: moinsalam1@gmail.com

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Executive Summary

The value of effective agricultural extension services in Bangladesh is enormous in order to ensuring the needful production against continued increasing population. The Agricultural Extension Service Model (AESC-Model) intervention through the USAID Agricultural Extension Support Activity (AESAs) project towards strengthening the country's agricultural extension services is a smart and timely step.

The Department of Agricultural Extension (DAE) is the lone public crop-based extension service providing agency in Bangladesh. The AESA project has been implementing the AESC-Model in collaboration with DAE. In the existing system, 'blocks' are the 'nerve-centres' of agricultural information flow. An upazila is administratively divided into several unions, and for DAE extension purposes, each union is non-administratively sub-divided into three. The frontline agricultural extension agents, designated as 'Sub-Assistant Agricultural Officer' or SAAO, are attached to each block.

In the existing system, a SAAO has no own office place, no work vehicle and no office mobile phone. S/he has about 4500 farm households to work with. Farm visits are seriously hindered by lack of fast transportation. Furthermore, the SAAO usually has broken communication with his/her immediate manager stationed at upazila level. The AESC-Model was designed to overcome the difficulties - accommodation, transportation and communication - the SAAOs had been encountering. With this model, an SAAO has been decently housed and well equipped. The model demonstrated in 129 blocks in four upazilas of four districts.

The AESC-Model was evaluated by gathering data and/or information through document search, and stakeholders' consultation in field visits. Six criteria were used for evaluation. Findings reveal that the AESC-Model intervention had provided the frontline public extension agents with job satisfaction, work effectiveness and efficiency, and work credibility. It had facilitated senior DAE management towards better monitoring, evaluation and management of SAAOs. To the farmers, the AESC-Model had given increased frequency and promptness in service receiving, knowledge development and bargaining power, and enhanced self-esteem and status of women in households and society. Overall, the AESC-Model had been successful with respect to the design, relevance, effectiveness, efficiency and achievements. However, the issue of sustainability concerned most of the stakeholders. The evaluation recommends that the USAID AESA project immediately takes steps highlighting the success and potential of the AESC-Model to various influential forums in order to create momentum for upscaling and further piloting, as warranted. It further suggests that the project builds a team with DAE and negotiates with private agencies for running limited number of AESCs through public-private partnership and/or co-operation.

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List of Acronyms

ADAE:	Additional Director Agricultural Extension
AESA:	Agricultural Extension Support Activity
AESC:	Agricultural Extension Service Center
AEMO:	Agricultural Extension Marketing Officer
ARD:	Adaptive Research Division of BIRRI
BAU:	Bangladesh Agricultural University
BAUEC:	Bangladesh Agricultural University Extension Center
BIRRI:	Bangladesh Rice Research Institute
COP:	Chief of Party
DDAE:	Deputy Director Agricultural Extension
DAE:	Department of Agricultural Extension
DAM:	Dhaka Ahsania Mission
DM:	District Manager
FF:	Field Facilitator
FO:	Field Officer
FPG:	Farmer Producer Group
FYP:	Five Year Plan
MOU:	Memorandum of Understanding
NEAP:	National Agricultural Extension Plan
RTC:	Regional Training Co-ordinator
SAAO:	Sub-Assistant Agricultural Officer
UAO:	Upazila Agriculture Officer
USAID:	United States Agency for International Development

Introduction

Bangladesh targets to attain middle income country status in 2021 for which the 'Perspective Plan of Bangladesh (2010-2021)' was prepared. The plan included, among others, elimination of food deficiency and attaining self-sufficiency in food production. This plan identified number of challenges towards achieving the goal which includes declining soil fertility, loss of land and water resources, stagnation of production under capture fisheries, and nutritional and disease constraints in the production of livestock. Increasing emphasis on research and development was highlighted to overcome the challenges. In this respect, generation, adaptation and adoption of technologies in all sectors of agriculture could be an efficient way to march forward. The strategies and tasks of the perspective plan designed to be articulated through the two five-year plan: Sixth Five Year Plan (2011-2015) (6thFYP) and Seventh Five Year Plan (2016-2020) (7thFYP). In the 6thFYP, emphasis on particular attention was given to develop and adopt technologies and improved agricultural practices in ecologically vulnerable areas such as saline prone areas and flood and drought prone locations. The 6thFYP also identified absence of demanding technologies to co-opt climate change hindering productivity in agricultural sector. The same plan also highlighted that the productivity gain in this sector could come from two sources - technical change and correction of market distortion. It further emphasized on the development of appropriate technologies for non-rice crops, promotion the use of modern technologies with the help of ICT, attempting community based seed production, storage and dissemination system to ensure quality seed at farmer's level, reduction in 'yield gap' through reducing 'information gap', and strengthening linkage among research, extension and farmers community. The proposed National Agricultural Extension Policy (NAEP, 2012) pointed out the need for 'Demand Responsive Research-Extension-Farmer Linkage' towards generation, adaptation and adoption of farm technologies.

The USAID Agricultural Extension Support Activity (AESAs) Project (under Co-operative agreement No. AID-388-A-13-00001 between USAID and Dhaka Ahsania Mission) primary aims to enhance access to agricultural extension services by smallholder farmers - both men and women. To materialize one of its objectives - to demonstrate

improved agricultural extension service delivery - the project established 129 Agricultural Extension Service Centers (AESCs) in four demonstration upazilas of Bangladesh. Those AESCs supposed to offer farmers the option to seek out and receive extension services and agricultural information at their convenience from a known, central location.

This report overviews the 'AESC-Model' and presents its blueprint, evaluates the performance of the AESCs and puts recommendation on continuity and extendibility of the model in the country's public agricultural extension services.

Methodology

Data and/or information were gathered through document search and stakeholders consultation. Documents related to the project were supplied by the ASEA Head Office. The distribution of 129 AESCs in four demonstration upazilas - Barisal Sadar, Faridpur Sadar, Chougacha and Kalia - is shown in Table 1. The Barisal Sadar represented a divisional (Barisal) upazila, Faridpur Sadar a district (Faridpur) central upazila, Chougacha outside the district (Jessore) center and Kalia a remote upazila from district (Narail) center.

Table 1. Distribution of 129 Agricultural Extension Service Centers (AESCs) in four demonstration upazilas of Bangladesh

District	Upazila	Status of the upazila	Number of AESC*
Barisal	Barisal Sadar	Divisional centre	30
Faridpur	Faridpur Sadar	District centre	33
Jessore	Chougacha	Outside district centre	34
Narail	Kalia	Remote	32
Total			129

*AESC: Agricultural Extension Service Center

For on-ground stakeholders' consultation, field visits were conducted in six unions of the four demonstration upazilas during 18 – 22 December 2016 (Table 2). During the visits, farmers - both male and female - were met. Those farmers belonged to both categories of direct project beneficiary and non-beneficiary. In addition, discussion meeting with senior officials of the Department of Agricultural Extension (DAE) was conducted in six offices.

Table 2. Location and offices where field visits and discussion meetings were conducted for stakeholders' consultation during 18 - 22 December 2016

District	Office / Upazila	Union	Block	PB*	PNB**
Barisal	Barisal Sadar UAO Office	-	-	-	-
	Barisal Sadar	Korapur	Dharmadee	Yes	Yes
Faridpur	Faridpur Sadar ADAE Office	-	-	-	-
	Faridpur Sadar	Esangupalpur	Esangupalpur-01	Yes	Yes
Jessore	Jessore Sadar DDAE Office	-	-	-	-
	Chougacha UAO Office	-	-	-	-
	Chougacha	Fulsara	Sayodpur	Yes	Yes
	Jessore Sadar	Churamonkathee	Churamonkathee	No	Yes
Narail	Narail Sadar DDAE Office	-	-	-	-
	Kalia UAO Office	-	-	-	-
	Kalia	Purulia	Amtola	Yes	No
	Narail Sadar	Molia	Molia	No	Yes

*PB: Project beneficiaries

**PNB: Project non-beneficiaries

During the field visit, total 172 people were met, individually and/or in groups (Figure 1). Of the people met, 21 were DAE officials (Appendix-1), 20 were project officials (Appendix-2), 101 were project beneficiaries (Appendix-3) and 21 were non-beneficiaries (Appendix-4). Among the people consulted, 58% were female, mostly belonging to project beneficiaries.

The blueprint of the AESC-Model was developed diagrammatically. The evaluation of the performance of the AESCs was made using six criteria addressing key questions, presented in Table 3.

Table 3. Criteria addressing key questions used in evaluating AESC-Model

Evaluation criterion	Key question
(i) Design	Was it necessary to establish AESC at grass root level facilitating workspace and communication devices to frontline extension agents?
(ii) Relevance	To what extent the objectives of AESC-Model intervention had been consistent with beneficiaries' requirement?
(iii) Effectiveness	Were the AESC-Model intervention services good enough so that benefitting stakeholders?
(iv) Efficiency	To what extent (index or factor) the extension services (the output), both in terms of quantity and quality, were received in relation to the AESC model (the input)?
(v) Achievements	What was the impact of the AESC-Model intervention technically, economically and socially affecting the target group and other directly or indirectly affected parties?
(vi) Sustainability	Are the benefits of the AESC-Model intervention likely to continue after project support has been completed?

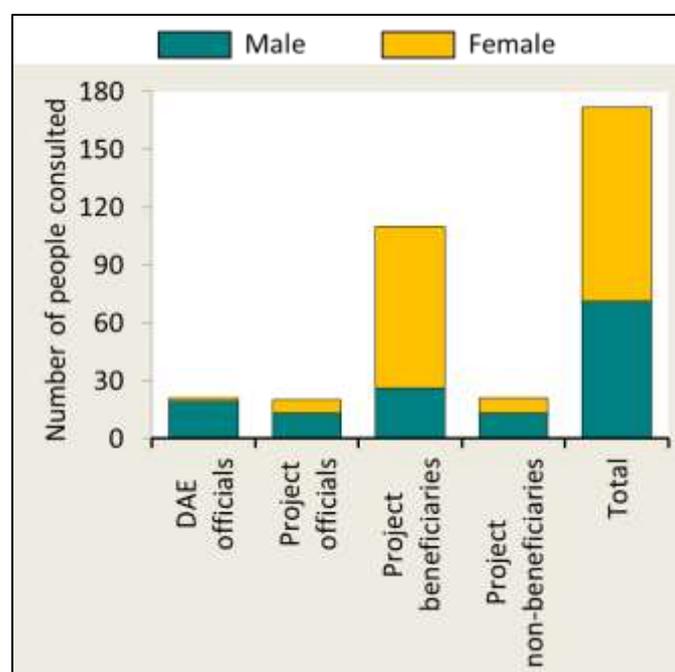


Figure 1. Decomposition of the people consulted during the study according to group (stakeholder class) and gender

Findings were summarized qualitatively. However, the overall aspects of each of the six criteria under the evaluation were quantified as the percentage of the respondents according to positive views and negative or unclear views of responses. For this quantification, the opinions of the project officials were excluded to remove bias as much as possible.

The state of the operation of the 129 AESCs was rated as 'smooth' and 'difficulty' by consulting senior managers (RM and DM status) of the USAID AESA project. 'Smooth' meant for continued service of the AESCs with no complaints from farmers; whereas, 'difficulty' implied for disruptive service of the AESCs complained by farmers.

Findings

The AESC Model

Upazilas (presently 487, BBS 2013), the units of 64 districts of 7 divisions, are the administrative hubs of the agricultural extension activities in Bangladesh. However, the blocks are the 'nerve-centres' of agricultural and extension information flow of the country. An upazila is administratively divided into several unions, and for DAE¹ extension purposes, each union is non-administratively sub-divided into three (3) blocks (Figure 2). The frontline agricultural extension agents, designated as 'Sub-Assistant Agricultural Officer' or SAAO, are attached to the blocks (one in each block). At present, there are around 14,500 blocks in the country.

A SAAO, responsible for a block, has no office place. The three SAAOs attached in each union (Figure 2F) have a sitting shelter in one of the spaces in the union office (Figure 3). Having a brief sitting in the sheltered room, each SAAO is to visit the designated block on own vehicle (predominantly bicycle) interacting farmers sitting in a village tea-stall or a rich farmer's front-yard. S/he has no office mobile phone. S/he has about 4500 farm households to work with. Farm visits are seriously hindered by lack of fast transportation. The SAAO usually has broken communication

¹ DAE is the lone public crop-based extension service providing agency in Bangladesh. The AESA has been implementing the AESC-Model in collaboration with DAE through a MOU.

with his/her immediate administrative officer, the Upazila Agriculture Officer (UAO) stationed at upazila level.

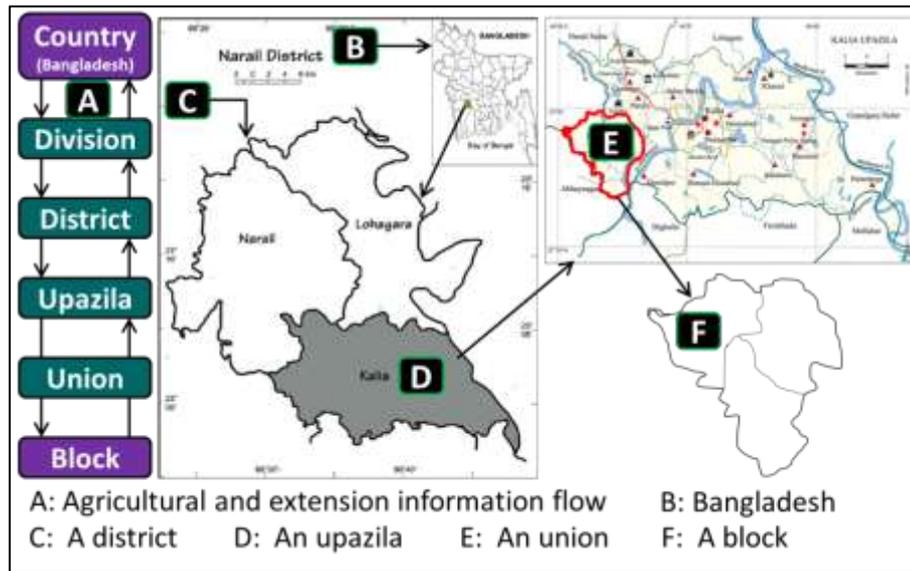


Figure 2. Hierarchy of agricultural and extension information flow in Bangladesh showing the hierarchy through to 'blocks', the lowest level of work location of frontline agricultural extension agents (designated as 'Sub-Assistant Agricultural Officer' or SAAO)

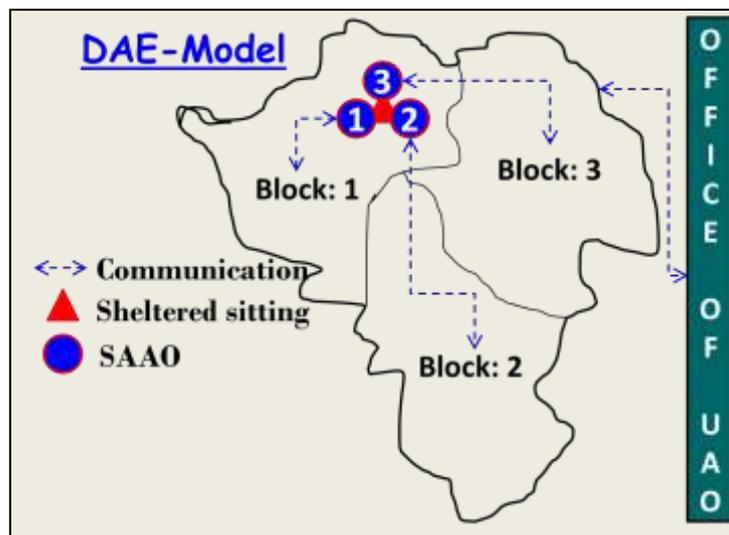


Figure 3. The existing agricultural extension service delivery model of the Department of Agricultural Extension (DAE-Model); the numbers denote for the three Sub-Assistant Agricultural Officers (SAAOs); the location of sheltered sitting is one of the spaces in the union office; UAO indicates the Upazila Agriculture Officer

The AESC-Model was designed to overcome the difficulties - accommodation, transportation and communication - the SAAOs had been encountering. With this model, an SAAO has been decently housed and well equipped (Figure 4). S/he has own office inside work-location (i.e. block), fast-moving office transport, a motorcycle, and a smartphone for mobile communication and accessing information communication technology (ICT) [e.g. connecting to Call Center]. In addition to creating physical facilities, the project established Farmer Producer Groups (FPGs) to collectively access extension services including required inputs, access to finance and markets. All those have facilitated solid connectivity of SAAOs to farmers and DAE officials.

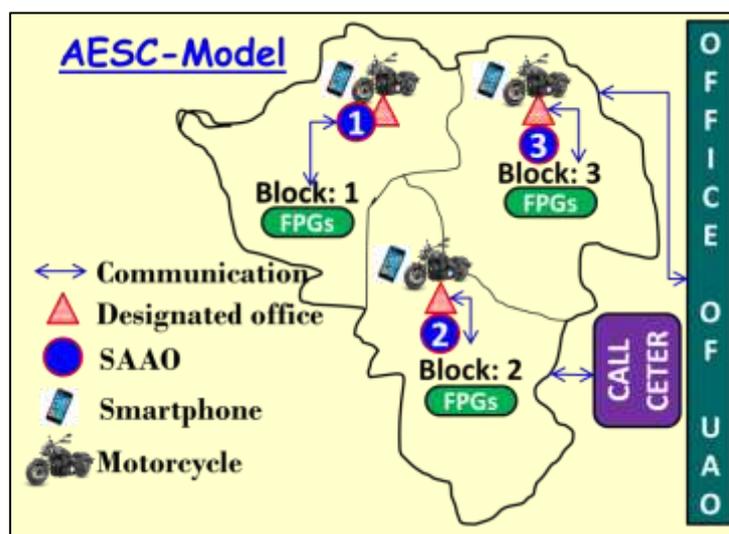


Figure 4. The newly formulated Agricultural Extension Center model (AESC-Model) through USAID Agricultural Extension Support Activity (AESA) Project. The numbers denote for the three Sub-Assistant Agricultural Officers (SAAOs); the sitting location is newly established office at block level; UAO indicates the Upazila Agriculture Officer, and FPGs for Farmer Producer Groups

In addition to the AESC-Model, the project demonstrated the 'ICT-Model', which was similar to the DAE-Model except for facilitating UAAOs with smartphones and

establishing FPGs (Figure 5). The three models are shown together in Figure 6 for a-glance comparison.

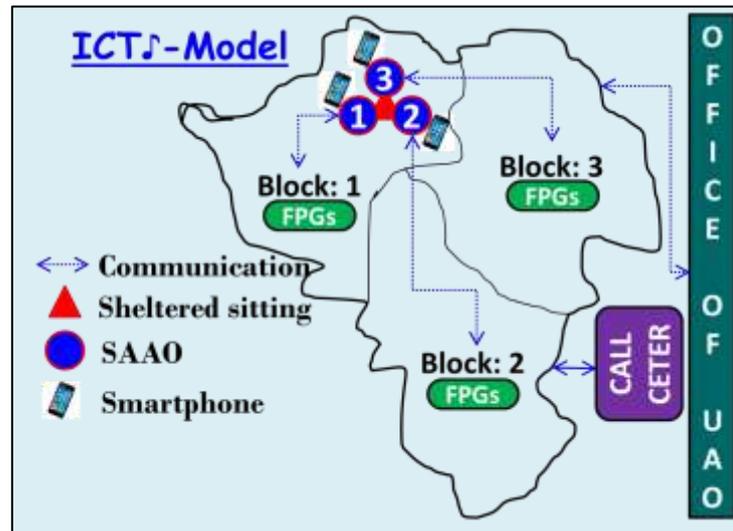


Figure 5. The newly formulated ICT tuned model (ICT Model) through USAID Agricultural Extension Support Activity (AESAs) Project. The numbers denote for the three Sub-Assistant Agricultural Officers (SAAOs); the location of sheltered sitting is the same as of DAE-Model; UAO indicates the Upazila Agriculture Officer, and FPGs for Farmer Producer Groups

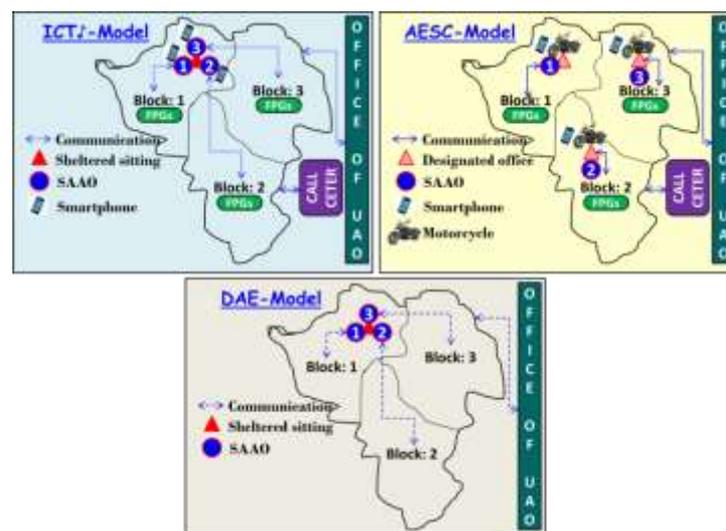


Figure 6. The DAE-Model, ICT Model and AESC-Model, showing together for comparison purposes

Evaluation of the AESC-Model

The performance of the AESC-Model was rated as high as 97% (criterion: design) to as low as 40% (criterion: sustainability) with respect to number of respondents perceived (Figure 7). In general, the less was the complexity of the evaluation criterion, the more was the response in favour of the criterion.

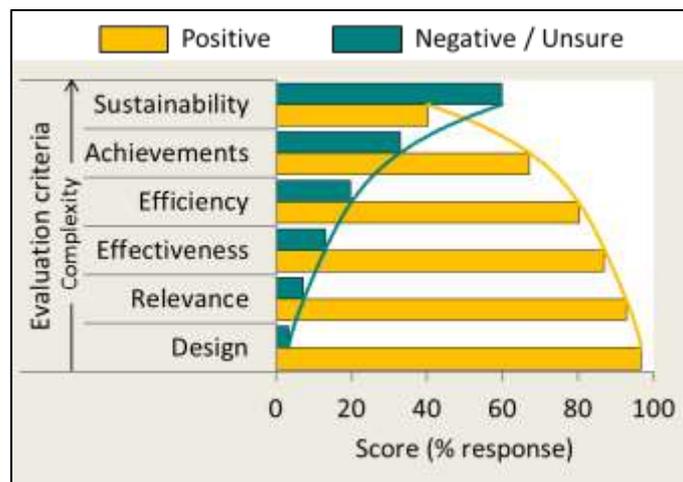


Figure 7. Performance of the AESC-Model for each of the six evaluation criterion; 'Score' denotes for percent respondents perceived by number

The AESC-Model: Design

The design of the AESC-Model almost entirely viewed as 'positive' (147 of the 152 individual stakeholders consulted). Two senior DAE officials, however, viewed the [isolated] location of the AESC at block level would likely to fail attracting farmers. Motorcycle was not a convenient vehicle for all female, complaint a female UAAO. Two female project beneficiaries thought AESC in a market location would suit the purpose better. A woman farmer, a non-beneficiary of the project, loudly claimed that an AESC close to her home helped her consulting with the UAAO when she badly needed information on country bean raising issues (Appendix-5.1, note Photo-D).

The AESC-Model: Relevance

The AESC-Model intervention had been consistent with beneficiaries' requirements, claimed 93% of the respondents. There were three levels of such beneficiaries of this intervention - the farmers, the SAAOs and the senior DAE management. Farmers, notably women, experienced more access to extension agents. The frontline extension agents, the SAAOs, expressed huge moral boost from this intervention through gaining own offices, an address, recognized social status and increased respect from farming community and local government representatives. Some SAAOs were so enthusiastic that they printed business card with own costs (Appendix-5.2, note Photo-B). Own office space was especially convenient to the women SAAOs, because chatting with farmers in the open market place, as normal practice, was against the social norm. The AESC-Model facilitated wider mobility and improved information communication skills to the SAAOs. For the senior DAE officials (UAOs and DDAEs), equipping SAAOs with smartphone provided improved monitoring of SAAO activities.

There were some negative views raised by stakeholders during the consultations. Some senior DAE officials expressed that the AESC-Model had been 'cultural shock' for SAAOs; this intervention meant a changed work environment - more work and more binding (e.g. maintaining logbook for visiting farmers in the AESCs) - for SAAOs, which was uncomfortable to some. Skills of the UAAOs were not up to the mark for accommodating increasing and diversifying extension activities (e.g., writing recorded 'prescription' for a visiting farmer's problem; advising complex farming issues such as managing rice false smut disease) in the new system, some senior officials concerned.

The AESC-Model: Effectiveness

The change in the observed outcome from the AESC-Model system, compared to DAE-Model, had been rated as 'excellent' in relation to farmers' learning especially on crop production practices. As such, 87% of the respondents, largely farmers, positively viewed the effectiveness of the system. Farmers testified this during

consultation (Appendix-5.3, note Photo-D); also evident from logbooks, the record of farmers visit (Appendix-5.3, note Photo-A) and consultation in the AESCs, office copies of the 'prescription' for solving raised problems (Appendix-5.3, note Photo-B) and presence of visitors in the AESCs during the field visit (Appendix-5.3, note Photo-C). The consulted SAAOs strongly opined they had been effective in their services under AESC-Model compared to the past (under DAE-Model). On the hind side though, some SAAOs not working smoothly or willing not to work in the new environment, thus hampering the effectiveness of the service delivery - this was viewed by the senior DAE management.

The AESC-Model: Efficiency

About 80% of the consulted respondents were in opinion that the on-going agricultural extension services providing through AESC-Model had been efficient. The services were efficient because the activities carried out as simply as possible, decisions made as close to where the services were delivered, and deliverables achieved on time and on budget. For example, providing a 'prescription' (Appendix-5.4, note Photo-A) on recommending an insecticide for a given insect control was efficient, not only for effectively solving the problem but also getting rid of confusions and harassments from fraudulent input dealers. Meeting farmers in group, e.g. FPGs (Appendix-5.4, note Photo-C), UAAOs met more clients than visiting them in farms individually; transportation through motorcycle also facilitated serving more clients than using slow transport (e.g., bicycle). Sending photo of a diseased plant to 'Call Center' using smartphone provided quick solution to the problem (usually within few hours).

The SAAOs thought their services had been efficient as they developed capacity in flowing information through their own developed knowledge (training during AESC development), available information materials (provided by the USAID AESA project), experienced fellow SAAOs (using phone communication) and Call Centre (using smartphone). However, some senior DAE management had concern on the efficiency in service providing, as they questioned on the 'skill quality' of the UAAOs.

The AESC-Model: Achievements

The broader consequences of the intervention, the AESC-Model, inducing technical, economic and social effect on the project beneficiaries and non-beneficiaries directly or indirectly had been positively recognized during the evaluation process. Sixty seven percent respondents agreed on this view. The frontline extension agents, who were willing to serve the community, significantly developed their professional skills. Farmers widely increased their technical knowledge on agricultural practices, such as jute processing and homestead gardening. Forming FPGs had been extremely successful in enhancing confidence, developing skills and igniting bargaining power of the resource-poor farmers. Farmers belonging to FPGs passed on technical information to non-FPG farmers without hesitation. Farmers seemed understand that the value of individual benefits inferior to group benefits. They loudly responded in favour of achieving economic benefits through AESC-Model intervention.

The AESC-Model intervention had significantly addressed the gender issue. It was exceptionally successful in raising women's dignity within family and society, enhancing power in household decision making, and improving family relationship with husbands and mother-in-laws. The gender issue was checked and cross-checked with women and men separately and in combined sessions. Men opined that the suggestions the women had been providing were working and effective; therefore, they had no issue on accepting those suggestions (Appendix-5.5, note Photo - A, B and D of discussion sessions).

The USAID ASEA project has three components - Component 1: FPG capacity building; Component 2: ICT-based extension (for both FPG and extension agents); and, Component 3: Public and private extension agents capacity building. The AESC-Model intervention probably had little impact on capacity building of private extension agents; none of such benefitted agents were met during the field visits.

The AESC-Model: Sustainability

The stakeholders had mixed opinion on the continuation of the AESC-Model in the demonstration upazila and it's up-scaling after the project support has been completed. Only a small section of the respondents (40%) was hopeful that services of the existing AESCs would continue with some arrangements. 'Discussion section' of this report further elaborates the issues related to sustainability of the AESC-Model.

The State of Operation of AESCs

Out of 129 AESCs demonstrated in four upazilas, 81% had been running smoothly, the rest (19%) with difficulty (Figure 8). Barisal Sadar experienced the most difficult operations of AESCs (27%), followed by Kaila (22%). Faridpur Sadar had the least operational issues (9%) with AESCs.

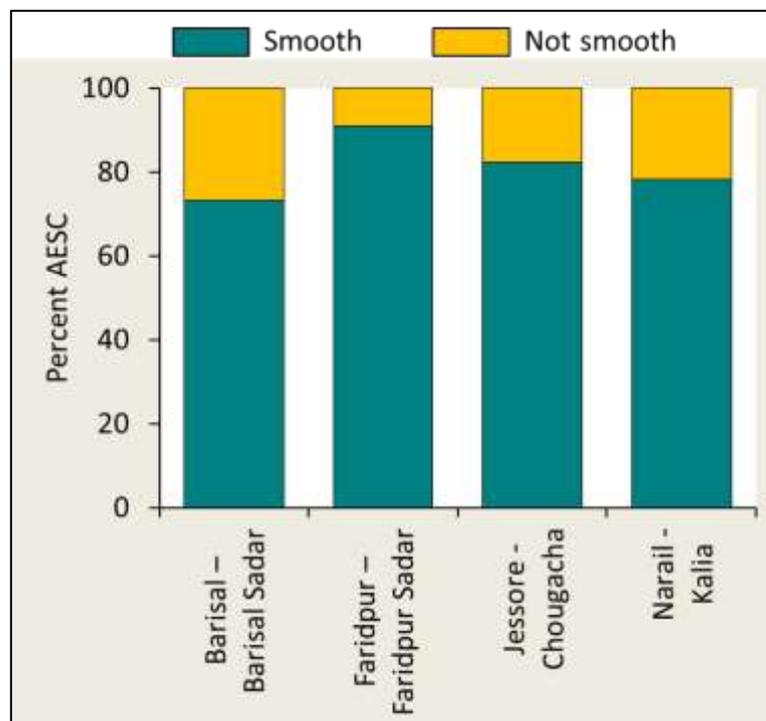


Figure 8. The state of operation of the Agricultural Extension Service Centers (AESC) in four demonstration upazilas

Discussion and Conclusions

The importance of enhancing agricultural productivity in Bangladesh does not need to re-emphasize as the country requires feeding around 163.65 million people from merely 8.75 million hectares of agricultural land (Salam *et al.*, 2014). More food will be required in future because of increasing population. However, the production is likely to be severely challenged by two broad categories of constraints: (i) decreasing resources (e.g. land, labour, soil health and water), and (ii) increasing climate vulnerability (e.g., drought, salinity, flood, heat and cold) (Kabir *et al.*, 2016). On top of those, receiving fair Farmgate price of products has been an issue to the producers. Although agriculture has achieved significant productivity, ensuring the needful production is and will be the key to securing food security of Bangladesh. Taking rice sector as an example, a recent study shows that minimizing yield gap and curtailing adoption lag of potential varieties are the two potential avenues of increasing productivity in the sector to meet the demand leading to 2050 (Kabir *et al.*, 2016). In this respect, the value of effective agricultural extension services in Bangladesh is enormous. With this backdrop, the AESC-Model intervention through the USAID AESA project towards strengthening the country's agricultural extension services is a smart and timely step.

In Bangladesh, farmer-to-farmer information flow still plays a vital role in adoption of agricultural technologies. Public extension services, predominantly by the DAE, have also been playing a significant role in agricultural technology dissemination; recently the private sector has also come on board (Figure 9). In addition, research institutes (e.g. Adaptive Research Division (ARD) of the Bangladesh Rice Research Institute (BRRI)) and educational institutions (e.g. Bangladesh Agricultural University Extension Center (BAUEC) of the Bangladesh Agricultural University (BAU)) have their own institutional mechanisms of delivering technologies to farmers. The USAID AESA project rightly targeted capacity building of the public and private extension agents. The AESC-Model demonstrated in 129 blocks in four upazilas has been largely successful with respect to the design, relevance, effectiveness, efficiency and achievements.

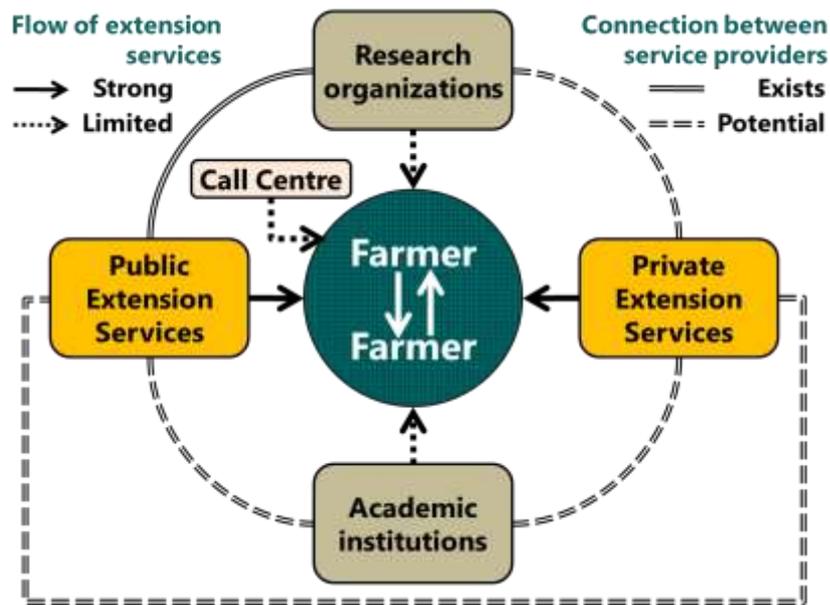


Figure 9. Flow of agricultural extension services to farmers and connections between service providers



Figure 10. Gratitude, appreciations and concerns in relation to AESC-Model - stakeholders' own words

This AESC-Model intervention has provided the frontline public extension agents with job satisfaction, work effectiveness and efficiency and work credibility. It has facilitated senior DAE management towards better monitoring, evaluation and management of SAAOs. To the farmers, the AESC-Model has given increased frequency and promptness in service receiving, knowledge development and bargaining power, and enhanced self-esteem and status of women in households and society. The benefits of the intervention have been overwhelmingly echoed by the stakeholders in their own words (Figure 10; English translation in Appendix-6). However, the issue of sustainability of the model, with respect to its continuation in the demonstration upazilas and its up-scaling after the project support has been completed, concerned most of the stakeholders.

On sustainability of the AESC-Model, four questions may be raised:

- (i) Are the policies, priorities, and specific commitments of DAE supporting the chances of success of AESCs (*Policy support measures*)?
- (ii) Were the choice and adaptation of the AESC-Model appropriate to existing conditions (*Choice of technology in the existing DAE culture*)?
- (iii) Did the AESC-Model make socio-cultural integration, impacting on various groups (notably, gender and resource-poor farmers) (*Socio-cultural aspects*)?, and
- (iv) Has the DAE institutional capacity and distribution of responsibilities between existing bodies (*Institutional aspects*)?

In relation to question (i), as stated earlier, the proposed National Agricultural Extension Policy (2012) clearly states the need for '*Demand Responsive Research-Extension-Farmer Linkage*' towards generation, adaptation and adoption of farm technologies. The AESC-Model has largely met the need. The choice of AESC-Model as the nerve center of agricultural extension services would be least debated, but few may argue on its adaptation at block-level, bypassing upazila level (question (ii)). The model has been profoundly successful in integrating social groups especially women and resource-poor farmers, and the farmers belong to production groups

(FPGs) and outside the FPGs. Therefore, the question (iii) is likely to not debatable. Regarding question (iv), DAE has institutional capacity. However, the current trends (economic and governance environments) warrant the division of roles between public and private organisations through public-private partnership. DAE, most likely, not yet fully prepared to play on this role.

Although not impossible to achieve, urgent cultural change would be a necessity towards smooth establishment of co-operation and co-ordination of public-private participating bodies. It is concluded that in the end-phase of life, the project specifically plays a match-making role on this.

Recommendations

Based on the findings and discussion, following recommendations are made from this study:

- (i) The USAID AESA project (the project) immediately takes steps highlighting the success and potential of the AESC-Model to various influential forums (public, private donor policy-makers and decision-makers) in order to create momentum for upscaling and further piloting, as warranted.
- (ii) The project builds a team with DAE and negotiates with private agencies for running limited number of AESCs through public-private partnership and/or co-operation.

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facilities during the field visits. The company and guidance of Mohammad Abu Sayeed, a USAID ASEA project official, had been essential for the effective field visits.

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Appendix-1. The list of the officials of the Department of Agricultural Extension (DAE) consulted during the tenure of the study

Number	Name	Designation*	Location
1	Kinkor Chandra Das	ADAE	Faridpur Region
2	Sheikh Aminul Haque	DDAE	Narail
3	Kazi Habibur Rahman	DDAE	Jessore
4	G M Abdur Rouf	DDAE	Faridpur
5	Md. Nazrul Islam	DTO-DAE	Narail
6	Md. Emdad Hossain Sheikh	DTO-DAE	Jessore
6	Subrata Kumar Chakrabartee	ADDD (crop)	Jessore
7	A.M. Helalur Rahman-Bride	Agriculture Engineer	Narail
8	Joydev Saha Joy	Agriculture Engineer	Narail
9	Md. Shafiqur rahman	VFA	Kalia, Narail
10	Subir Kumar Biswas	UAO	Kalia, Narail
11	S M Khalid Sayfullah	UAO	Jessore Sadar, Jessore
12	Md. Abul Bashar Mia	UAO	Faridpur Sadar, Faridpur
13	S.M Sahabuddin	UAO	Chougasha, Jessore
13	Meher Maleka	UAEO	Barisal Sadar, Barisal
14	Nayon Kumar Sen	SAPPO	Kalia, Narail
15	Abdul Aziz	SAAO	Amtola block, Purulia union, Kalia, Narail
16	Md. Enaet Hossen	SAAO	Molladanga block, Chachuree union, Kalia, Narail
17	Mahbub Rahman	SAAO	Mulia block, Mulia union, Kalia, Narail
18	Md. Mahbubur Rahman	SAAO	Sayodpur block, Fulsara union, Chaugasha, Jessore
19	Md. Zakir Hossain	SAAO	Churamonkathee block, Churamonkathee union, Jessore Sadar, Jessore
20	Bikash Kumar Tarafder	SAAO	Esangupalpur-01 block, Esangupalpur union, Faridpur Sadar, Faridpur
21	Ferdushee Begum	SAAO	Dharmadee block, Ray Pasha Korapur union, Barisal Sadar, Barisal

* Acronyms are listed in page 7

Appendix-2. The list of the officials of the USAID Agricultural Extension Support Activity (AESA) Project consulted during the tenure of the study

Number	Name	Designation*	Location
1	Bidyuth K. Mahalder	COP	Dhaka
2	Babul Akter	RTC	Barisal region
3	Md. Abdul Malek	DM	Narail
4	Md. Rafiqul Islam	DM	Jessore
5	Ibrahim Kadir	DM	Faridpur
6	Md Mukter Hossen	DM	Barisal
6	Aminul Islam Mredha	AEMO	Barisal
7	Moniruzzaman Molla	FF	Purulia union,Kalia, Narail
8	Saidur Rahman	FF	Mulia union,Kalia, Narail
9	Tania Mahbuba	FF	Chachury union, Narail Sadar, Narail
10	Debakor Mollik	FF	Fulsara union, Chougasha, Jessore
11	Anwer Islam	FF	Fulsara union, Chougasha, Jessore
12	Babeta Mondol	FF	Esangupalpur union, Faridpur Sadar, Faridpur
13	Taposh Baroe	FF	Esangupalpur union, Faridpur Sadar, Faridpur
13	Rumana Yesmin	FF	Ray Pashakarapur union, Barisal Sadar, Barisal
14	Provaty Biswas	FF	Ray Pashakarapur union, Barisal Sadar, Barisal
15	Md.Mizanur Rahman	FO	Kalia, Narail
16	Mst. Naznin Sultana	FO	Kalia, Narail
17	Siuli Morsheda	FO	Sadar, Narail
18	Sawkat Osman	FO	Choughsha, Jessore
19	Salina Akhter	FO	Choughsha, Jessore
20	Mizanur Rahman	FO	Faridpur Sadar

* Acronyms are listed in page 7

Appendix-3. The list of the beneficiaries of the USAID Agricultural Extension Support Activity (AESA) Project consulted during the tenure of the study

Number	Beneficiary	Number	Beneficiary
Barisal Sadar, Barisal (Ray Pasha Korapur union, Dharmadee block)		Chougacha, Jessore (Fulsara union, Sayodpur block)	
1	Saleha Begum	35	Mohidul Biswas
2	Jahanara Begum	36	Saidur Rahman
3	Renu Begum	37	Anwer Hossen
4	Rubel Talukder	38	Ismil Hossen
5	Answar Ali	39	Moakbul Hossen
Faridpur Sadar, Faridpur (Esangupalpur union, Esangupalpur-01 block)		40	Morad Ali
6	Jahanara Begum	41	A. Mojid
7	Rekha Khatun	42	Aminur Rahman
8	Majeda Begum	43	Mokbul Hossen
9	Sajeda Begum	44	Azizur Rahman
10	Most. Sajeda Begum	45	Erfan Hossen
11	Sahera Begum	46	Momin
12	Lylee Begum	47	Rahim
13	maleka Begum	48	Nargis khatun
14	Jharna Begum	49	Ferdushee
15	shamela Begum	50	Kakolee
16	Salma Begum	51	sonavan
17	Jobeda Begum	52	Mahmuda
18	Rubena Khatun	53	Reshma
19	Tashlima Begum	54	Parveen
20	Eva Begum	55	Jahura
21	Bedena Akter	56	Amena
22	Chumkee	57	Rahton
23	Rasheda Akter	58	Nazma begum
24	Kulsum Begum	59	Jarena
25	Nasima Begum	60	Momena
26	Nasima Begum	61	Fatema
27	Sufea Begum	62	Nargis
28	Ali Akber Biswas	63	Sabena
29	Panju Beparee	64	Shilpee
30	Md. Mojibor Sarder	65	Salena
31	Md. Gupal Fakir	66	Ashea
32	Md. Abul Beparee		
33	Palash Kumar Nag		
34	Hatem Khan		

Appendix-3. The list of the beneficiaries of the USAID Agricultural Extension Support Activity (AESA) Project consulted during the tenure of the study (continued)

Number	Beneficiary	Number	Beneficiary
Jessore Sadar, Jessore (Churamonkathee union, Churamonkathee block)		Narail Sadar, Narail (Molia union, Molia block)	
67	Nashreen Begum	93	Probir Bagci
68	Ashea Begum	94	Omito Sarkar
69	Rehena Begum	95	Omrita Halder
70	Salena Begum	96	Suchitra Ray
71	Sheema Begum	97	Anita Mohonta
72	Monjuara Begum	98	Ripa Mohonta
73	Nurjahan Begum	99	Lipika Mohonta
74	Moniruzzaman	100	kakoli Mohonta
75	Ferdushee Begum	101	Lila Mohonta
76	Bulbulee Begum	102	Sorma Mohonta
77	Jarena Begum	103	Sriti Mohonta
78	Parul Begum	104	Joyonti Ray
79	Repa Begum	105	Unnoti Sarkar
80	Shaleha Begum	106	Shikha Ray
Kalia, Narail (Purulia union, Amtala block)		107	
81	Shamima Begum	108	Monti Sarkar
82	Seulee Begum	109	Ruposi Biswas
83	Anjuara Begum	110	Jhorna Mohonta
84	Billal sheikh		
85	Abu bakkar sheikh		
86	Monjuara Begum		
87	Sukuron Begum		
88	Metu Begum		
89	Mojeda Begum		
90	Saleha Begum		
91	Nasema Begum		
92	Mafuja Begum		

Appendix-4. The list of the non-beneficiaries of the USAID Agricultural Extension Support Activity (AESAs) Project consulted during the tenure of the study

Number	Non-beneficiary	Number	Non-beneficiary
Barisal Sadar, Barisal (Ray Pasha Korapur union, Dharmadee block)		Chougacha, Jessore (Fulsara union, Sayodpur block)	
1	Asraf Sarder	9	Md. Atear Rahman
2	Alamgir	10	Md. Shahjahan
3	Montu Hawlader	11	Md. A Halim
Faridpur Sadar, Faridpur (Esangupalpur union, Esangupalpur-01 block)		12	Enamul Islam
4	Md. Mohon Fakir	13	Md. Musaed
5	Md. Ahmed Ali shekh	14	Saleha
6	Md. Khalil Beparee	15	Tahura
7	Md. Mafur shekh	16	Nasima
8	Md. Afjal shekh	17	Sefalee
		18	Selina
		Jessore Sadar, Jessore (Churamonkathee union, Churamonkathee block)	
		19	Fatema begum
		20	Keya
		21	Shaheda

Appendix-5.1. Officials of the Department of Agricultural Extension (DAE) (A-C) and a women farmer (printed *sari*, D) overwhelmingly endorsed the design of the AESC-Model (acronyms are listed in page 7)



Appendix-5.2. Beneficiaries testify the relevance of the AESC-Model (acronyms are listed in page 7)



Appendix-5.3. Documents and beneficiaries in relation to testifying the effectiveness of the AESC-Model (acronyms are listed in page 7)



Appendix-5.4. Documents and beneficiaries in relation to testifying the efficiency of the AESC-Model (acronyms are listed in page 7)



Appendix-5.5. Beneficiaries testifying the achievements of the AESC-Model (acronyms are listed in page 7)



Appendix-6. Gratitude, appreciations and concerns in relation to AESC-Model - stakeholders' own words (English translation of Figure 8)

