Monitoring, Evaluation, Accountability and Learning (MEAL) System Report of SAAS (Bangladesh Part)

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It would be highly appreciable if the evaluation findings and recommendations are duly considered and applied for enhancing the results and impact in future endeavors.

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Acronyms

AAS	Agriculture Advisory Services
APIRAS	Asia Pacific Island Rural Advisory Services Network
AESA	Agricultural Extension in South Asia
BAEN	Society For Bangladesh Agricultural Extension Network
BASA	Bangladesh Association for Social Advancement
BDT	Bangladeshi Taka
CP	Collection Point
DAE	Department of Agricultural Extension
DLS	Department of Livestock
EAS	Extension & Advisory Services
FGD	Focus Group Discussion
GoB	Government of Bangladesh
HH	Household
IFAD	International Fund for Agricultural Development
IGA	Income Generating Activity
KII	Key Informant Interview
MFI	Micro Finance Institute
NATP	National Agriculture Technology Program
NAEP	National Agricultural Extension Policy
NAES	National Agricultural Extension System
NGO	Non-governmental Organization
Paravet	Community (Local) Veterinary Service Provider
PNGO	Partner Non-Government Organisation
PACE	Promoting Agriculture Commercialization and Enterprises
PLW	Pregnant and Lactating Women
PKSF	Polli Kormo Sohayok Foundation
SAAS	Supporting Smallholder Farmers in Asia and Pacific Islands Region through Strengthened Agricultural Advisory Services
SDI	Social Development Initiatives
SEARCA	Southeast Asian Regional Center for Graduate Study and Research in Agriculture
SAAO	Sub-Assistant Agriculture Officer
TOT	Training for Trainers
UAO	Upazila Agriculture Officer
ULO	Upazila Livestock Officer
UP	Union Parishad
VC	Value Chain

Chapter One: Introduction

1.1 Background of the Project

The Society for Bangladesh Agricultural Extension Network (BAEN) has been implementing IFAD funded "Supporting Smallholder Farmers in Asia and Pacific Islands Region through Strengthened Agricultural Advisory Services (SAAS)" project with the aims to empower smallholder farmers in Bangladesh through improved, more effective and demand-driven Agricultural Advisory Services (AAS). The project is being implemented in Bangladesh, Fiji, and the Philippines through Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) in close collaboration with the Asia Pacific Island Rural Advisory Services Network (APIRAS). APIRAS and Agricultural Extension in South Asia (AESA) are providing technical guidance and support.

BAEN has been a country-wide network of agricultural extension actors and serves as a national platform for coordination and exchange of knowledge and information in Bangladesh. It aims to promote sustainable growth and agricultural productivity through identification, documentation and dissemination of good agricultural practices and extension approaches for environment-friendly and socio-economic growth in Bangladesh. The network consists of representatives from national government agencies, industry-specific government organizations, universities, local and international NGOs, farmers/traders associations, agricultural media practitioners, registered agricultural professional associations and the private sector. The specific objectives of the project are:

1. Strengthen individual and organizational capacities of agricultural advisory service stakeholders in target countries and at regional and sub-regional level, which will directly benefit both the poor farmers, indigenous communities, and producer's organizations.
2. Facilitate the availability and accessibility of appropriate and up-to-date knowledge and evidence on innovative advisory services from a range of sources in the Asia-Pacific region (through country fora and through APIRAS) and worldwide (through GFRAS).

The project in Bangladesh part comprises of four major activities: (1) Capacity assessment of country fora, (2) Human resource capacity building, (3) Strengthening knowledge management, and (4) Policy engagement in high level policy dialogue. Target Stakeholders of this project include a) Regional and sub-regional AAS service providers from public, private, and civil society sectors, b) Farmer/producers' organizations as providers and clientele of AAS, c) Public/private/civil society extension and AAS organizations in the project countries, d) Higher education institutions providing education and research in AAS though KM, e) Local and national government units and policy makers, and f) IFAD Country Programs.

Five thematic areas were identified in the Planning and consultation workshop (held during 01-02 April 2017) for improving the capacity of agricultural extension and advisory services (AEAS) in Bangladesh. Five Working Groups (WG) were formed to work on the five thematic areas to critically review the on-going works and good extension approaches and practices, to define the

agenda for learning events under each of the 5 priority areas, and also to provide advice on the curricula for priority learning modules.

Based on these buildups, the objective of the assignment is to evaluate project's relevance to its goal and objectives, effectiveness of its interventions against set indicators, impact it could create, sustainability of the good practices and project efficiency.

Specific objectives for this evaluation are:

I. Determine relevance of the project interventions and activities against project goal, objectives, GOB mandate and policies.
II. Measure effectiveness of the interventions.
III. Determine how much change has happened with regard to project outcome indicators.
IV. Measure impact that can be attributed to strengthened extension services.
V. Determine whether there is any systemic change in extension service system or activities and whether the changes would sustain after project closure.
VI. Draw key lessons learned so far that can contribute to the institutional learning for its partners and also for designing future projects for scale up.
VII. Identify gaps in implementation and generate recommendation for future action.

1.3 Technical Approach

The focus of the evaluation was primarily on evaluation of project interventions and see whether the intended outputs and outcomes have been achieved by the given timespan. Major stakeholders of the evaluation include, project staff, extension service providers, training recipients and smallholder farmers of the SAAS project. At the same time, as the project also worked with a few other stakeholders including private service providers, faculty members, other extension project, who were also targeted in the evaluation.

1.3.1 Development Assistance Committee (DAC) Criteria from of the Economic Cooperation and Development (OECD)

Considering the implementation modality of SAAS project interventions, we used a combination of the OECD/DAC Evaluation Criteria[1] and also the success case technique for project evaluation. The evaluation team used the five heavily used DAC criteria, i.e., relevance and fulfilment of objectives, developmental efficiency, effectiveness, impact and sustainability of project efforts. Figure below shows the five DAC evaluation criteria.

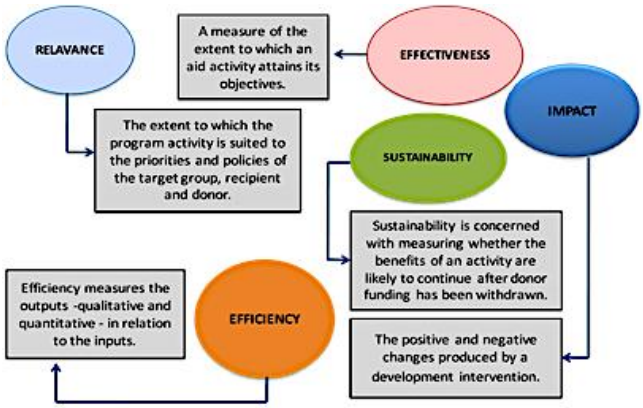


Figure A : DAC criteria for project

The evaluation team reviewed literature and attended some events (i.e. workshop on KM, curriculum review) as organized by SAAS and primarily developed an evaluation outline based

[1] The OECD/DAC Criteria for International Development Evaluations: An Assessment and Ideas for Improvement http://www.ipdet.org/files/Publication-The_OECD-DAC_Criteria_for_International.pdf

on learning from the literature review, project interventions/activities and outcome which was approved by the SAAS management. This was importantly helped to design checklists and questions guide which were used to collect primary data from the relevant primary and secondary stakeholders.

This evaluation was conducted using a qualitative and Participatory methodologies and approach in order to obtain accurate and relevant responses by allowing experiences of project participants and various stakeholders to be heard as well as to ascertain unintended positive and negative experiences, outcomes, acceptability and ownership issues.

1.3.2 Measuring Training Effectiveness

Regarding measuring effectiveness of the trainings and workshops, **Kirkpatrick's Four-Level Training Evaluation Model**[2] was used by the evaluation team. This process comprised of four stages which are given below:

Training Reaction: The evaluation team wanted to hear from the training participants whether they feel that training was/is valuable. Measuring how engaged they were, how actively they contributed, and how they reacted to the training helps you to understand how well they received it. It also enabled the team to make improvements to future programs, by identifying important topics that might have been missing.

Questions that we asked trainees include:

- Did you feel that the training was worth your time?
- Did you think that it was successful?
- What were the biggest strengths and weaknesses of the training?
- Did you like the venue and presentation style?
- Did the training session accommodate your personal learning styles ?
- Were the training activities engaging?
- What are the three most important things that you learned from this training?
- From what you learned, what do you plan to apply in your job?
- What support might you need to apply what you learned?

We tried to measure participants' reactions. We analyzed their feedback and considered the changes that we could make in response.

Learning: The evaluation team focused on measuring what your trainees have and haven't learned. We tried to measure what they think they'd be able to do differently as a result, how confident they are that they would do it, and how motivated they are to make changes. This demonstrated how training had developed their skills, attitudes and knowledge, as well as their confidence and commitment.

Before after Skills Assessment: Before the training begins, tests were taken to determine trainees' baseline knowledge, skill levels and attitudes. Then, when the training is finished, tests were again taken to measure what they have learned with interviews or verbal assessments.

[2] Kirkpatrick's Four-Level Training Evaluation Model, https://www.mindtools.com/pages/article/kirkpatrick.htm

Behavior and Practice: We tried to understand how well training/workshop participants apply their training in work. It revealed us where people might need help. But behavior can only change when conditions are favorable. Sometimes, existing organization processes and setup mean that there's little scope to apply new thinking, for example. Therefore, the evaluation team tried to determine whether there has been positive changes in behavior. Questions that were asked included:

- Did the trainees put any of their learning to use?
- Are trainees able to teach their new knowledge, skills or attitudes to other people?

Results/ Impacts: At this level, the evaluation team analyzed the final results or impacts of the training and workshops. This includes outcomes that the project had planned in its lograme of Theory of Change. The team tried to evaluate how much change has happened with regard to project outcome indicators, especially regarding those that received extension services (e.g., smallholder farmers) form the extension officers or training receivers.

1.4 Methods Used

Literature Review: In the initiation phase, our team conducted a thorough desk review focusing on project documents. The team reviewed and learned about the SAAS and BAEN goal and objectives, their interventions and activities, intended results path and documents that reflect regular work updates and project progress. The team reviewed existing project documents, project performance monitoring plan, project indicators, relevant research reports, etc.

This desk review helped us to have a better understanding of its interventions, identify key stakeholders that we should interview, their working modalities in the extension service system, different existing gaps and constraints, challenges and risks different market stakeholders face, and opportunities for improvement. This review also helped us in finalizing evaluation design protocols and developing data collection tools.

Primary Data Collection: Primary data was collected using the Key Informant Interviews (KIIs) and Semi-Structured Interviews (SSIs) tools from the trainees or participants in different training and workshops organized or facilitated by this project (including BASA and SDI, the Non-Government Organization (NGO) who were the partners of PKSF and IFAD funded PACE project, workshop participants including extension officers and staff, and regulatory actors who regulate policy environment). The evaluation team collected recall data in order to understand the pre-project situation so that SAAS attribution could be mapped out.

The evaluation team also met with groups of farmers that are connected with the extension service providers (who received training) and conducted Focus Group Discussion (FGD) to explore their level of knowledge transformation and the level of practice change regarding the SAAS selected themes.

Data Analysis and Debriefing: After data collection the team analyzed the qualitative data and shared the findings verbally in the field with the partners and then with SAAS project management through a debriefing session. During data analysis both question guided data and DAC evaluation criteria were used to capture and analyze the results by project interventions. Comparative analysis among the stakeholders and results indicators with pre-project status was

constructed by the perception of stakeholders. The study team also collected program monitoring data of the stakeholders for the last few years, analyzed and compared the findings data with team's own findings.

1.5 Structure of the Report

Once the aforementioned exercises were completed, the team consolidated all the data, processed and analyzed into meaningful information. These information were used in developing the findings report, and findings were categorized according to OECD/DAC's evaluation criteria, i.e. Relevance, Effectiveness, Efficiency, Impact and Sustainability. In addition, another two chapters one on Lessons learned and another one on key improvement areas and recommendations are also added.

The study team has strived to ensure that the report provides precise and important findings and analysis and is user-friendly for a variety of audiences. The report was finalized based on feedback from the SAAS Focal Person. Major findings from the evaluation will also be presented in the BAEN or SAAS stakeholder meeting if arranged by the project.

Chapter Two: Relevance of the Project Interventions and Activities

The evaluation team tried to analyze to what extent the objectives of the project interventions have been consistent with beneficiaries' requirements and needs, donor priorities and partner policies. The team also tried to know the relevance or significance of the project interventions regarding local and national requirements and priorities.

2.1 Relevance with Broad Development Goals of Bangladesh

The Government is committed to the continued development of agriculture in order to maintain food supplies for the growing population, provide income and employment for rural people, and protect the environment. The broad objective of the agricultural policy is to facilitate and accelerate technological transformation with a view to becoming self-sufficient in food production and improve the nutritional status of the population. GOB expects that the role of agricultural extension is to help farmers make efficient, productive and sustainable use of their land and other agricultural resources, through the provision of information, advice education and training[3].

The 7th Five-year plan of Government of Bangladesh also suggests strengthening of agricultural extension service system and the establishment of a national platform for exchange of experiences is supposed to enable farmers to benefit from and share lessons learned and practices of other components as well as other projects of DAE and other extension actors in the country. The idea of developing a platform where various progress extension actors can meet and exchange ideas is to systematically strengthen linkage in the field of agricultural extension through close and frequent collaboration between all actors be they public sector, NGOs or private sector.

Therefore, the National Agricultural Extension Policy (NAEP) was made to encourage the various partners and agencies within the National Agricultural Extension System (NAES) to provide efficient and effective coordinated services which complement and reinforce each other, in an effort to increase the efficiency and productivity of agriculture in Bangladesh for ensuring food security and business development. The policy emphasized on areas including diversification of extension services, agri-business, agro- climatic advisory service, on-farm water management, farmers' organization-based extension program, instructional capacity building including knowledge and skill, coordination with the international agricultural organization, enhancing nutritional safety, etc.

On that backdrop, a National Steering Committee (NSC) was formed to provide oversight of SAAS project activities that support priorities set by the Country Forum within the context of the Project Scope. It is composed of 14 Members containing representatives from the National, International, Government, Non-Government and Private Extension Providing Organizations like Departments of Agricultural Extension (DAE), Department of Livestock Services (DLS), Department of Fisheries (DOF), Sher-e-Bangla Agricultural University (SAU), International

[3] New Agricultural Extension Policy (NAEP), http://dae.portal.gov.bd/sites/default/files/files/dae.portal.gov.bd/page/dd7d2be1_aeef_452f_9774_8c23462ab73a/NAEP.pdf

Development Enterprise (iDE), Bangladesh Rural Advancement Committee (BRAC), Bangladesh Agriculture Development Corporation (BADC), Agricultural Information Service (AIS), Advanced Chemical Industries (ACI), YPARD and IFAD in Bangladesh. BAEN has been leading the implementation of the project activities at the country level in Bangladesh.

Through structured discussions among all major extension providers, including but not limited to DAE, DOF, DLS, a common understanding of different approaches as well as of activities have been being implemented by the players in the national agricultural extension system under the leadership of BAEN in SAAS project. The platform has been encouraging actors to exchange experiences both from long term activities and from pilot activities, discuss ideas, and consider opportunities for collaboration and find synergies in current and future projects and activities. Besides, the project has developed best practice guidelines on several extension issues and shared those on its web based platform.

As the evaluation team found, keeping government priorities in its strategy, SAAS (under BAEN's framework) designed its objective in order to identify, document and disseminate good practices of extension approaches, develop innovation in extension approaches, strengthen capacity of the extension professional, and promote awareness, knowledge sharing and network building for effective and efficient extension and advisory services at regional and national level. The study team thus found SAAS interventions and activities quite relevant to government plans and priorities.

However, less activities were found that targeted supporting research for socio-eco-friendly sustainable agricultural productivity and knowledge sharing at global level.

2.2 Relevance of the project interventions and activities

Regarding adaptation to climate change, the area of activities included Capacity Need Assessment (CNA) for capacity development (CD) for all level, Module development for junior level, piloting of modules (Jr.), establishment & development of sector-specific (Crop, Livestock, Fisheries) knowledge bank for all level and organize policy dialogue for senior level. In case of gender and nutrition sensitive extension, the activities implemented were Identification of advocacy issues and their strategy development for mid and senior level, capacity development by need assessment, module development and piloting for junior level, and policy dialogue for senior level. Under Market and Value chain development, SAAS implemented activities include Identification and scaling up of location specific technology for all level, linkage development among the value chain actors for all level, CNA for strengthening farmers' groups for junior level, CD by module development and piloting for junior level and Policy dialogue for senior level. Regarding ICT for management, monitoring and knowledge management, the project activities were development of linkage among the organizations engaged in ICT based agricultural advisory services for mid-level, establishment & development of sector-specific (crop, livestock, fisheries) knowledge bank for all level and skill development on ICT. For Curricula review (under-graduate level), activities that were implemented include accumulation of curricula of agricultural disciplines from different universities, reviewing of those curricula, consultation with Quality Assurance Cells (QAC) of the universities, standardization of the course layout of the curricula for similarities at under graduate level in all the universities having agricultural disciplines. Besides, in order to review curricula, the project team collected modules

from different organizations and then standardized and validated the modules, policy dialogues with representatives from different universities and training organizations.

The study team found interventions and activities under those interventions as quite relevant given the project objectives, country needs and government plans.

2.3 Relevance with Socio-Cultural Needs and Context

The economy of Bangladesh is primarily agrarian, with the agricultural sector accounting for about 19% of the Gross Domestic Product. The performance of agriculture, as a sector, has an important bearing on employment generation, food security and poverty alleviation, supporting the livelihood for of over 25 million rural households (BBS, 2012). The productivity and yield of these farmers heavily reliant on public and private extension services, the public extension offices are often unable to meet extension needs of the majority of farmers with information on modern agriculture and within their mandated territory. The lack of access to quality information and services affect the overall farming output and small farmers in face of challenge. Thus their ability to move up towards economic success is comprised and many of them are eventually tied in poverty.

Therefore, the goal and purpose of this project, that wants to strengthen extension service system by improving capacity of extension service providers, strengthening knowledge management system and by policy engagement in high level policy dialogue seemed quite relevant against our socio-cultural needs and contexts.

Chapter Three: Effectiveness of Project Interventions

Effectiveness analysis of any intervention measures the extent to which it realized the objectives of the project. The evaluation team findings point to overall positives results of the project. The project performed most of the target activities timely and has been effective in changing the lives of the targeted stakeholders. The monitoring reports and event reports also clearly indicate that the project has been able to deliver the mandated outputs and outcomes through its timely arrangement of different activities. This denotes the appropriateness and effectiveness of intervention implementation.

The SAAS project in Bangladesh part comprises of four major intervention areas, which are also the key intended project outcomes. They are:

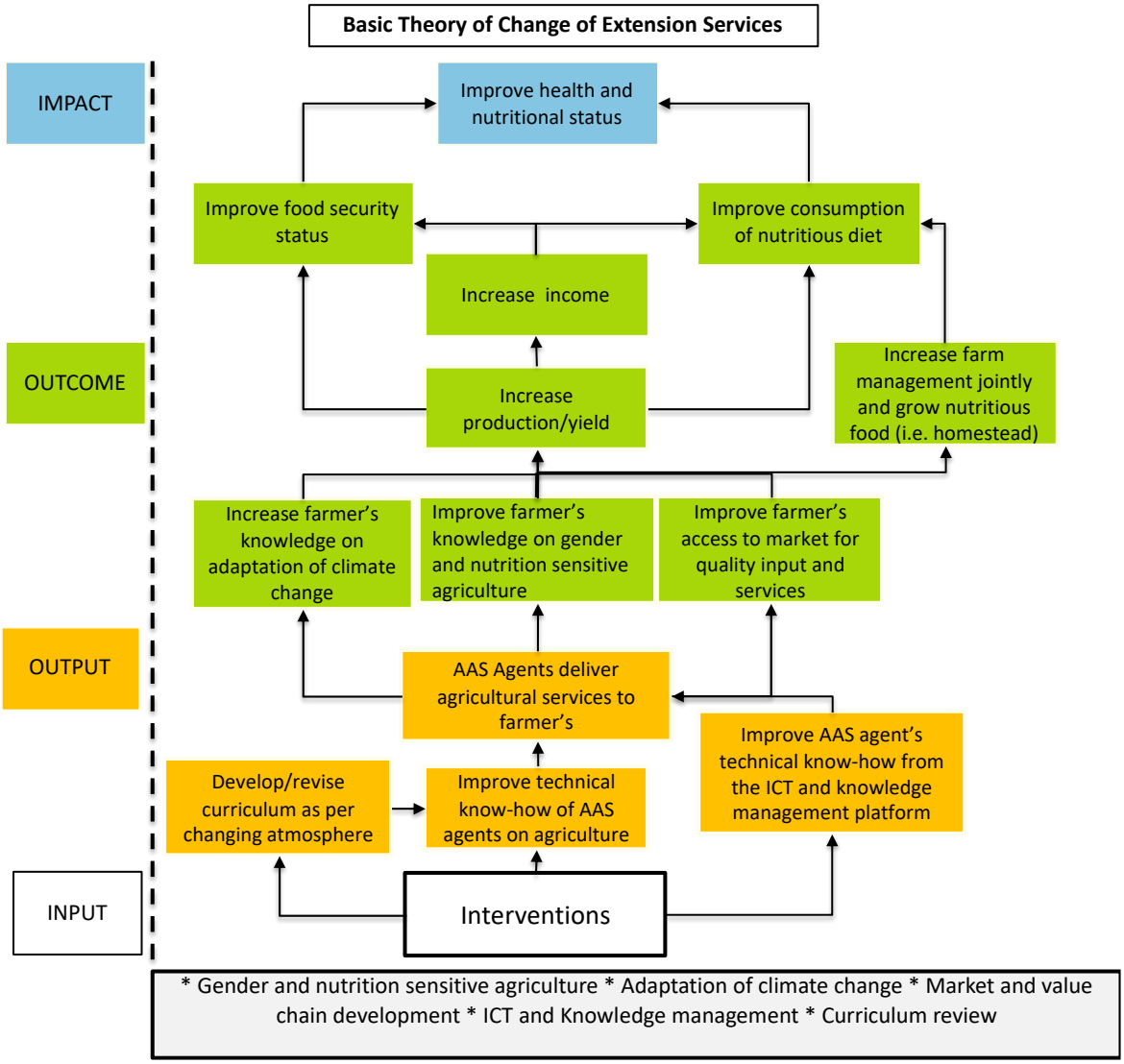
1) Establishment and Capacity Assessment of Country fora to Strengthen Governance of AAS Institutions,
2) Improved individual capacities of AAS to effectively serve smallholder farmers and respond to their demands,
3) Knowledge Management,
4) Policy Engagement in High Level Policy Dialogue at National Level

Results Chain: The diagram below describes the theory of change of SAAS project in increasing capacity of extension service providers, improving knowledge management infrastructure and restructure policy framework around it. As already said, SAAS project anticipated to contribute through the project approaches adding five broader themes. The ToC above describes four level of changes like input, output, outcome and impact and each level leads to the changes in the next level. As we can see, the objective of the SAAS project is to strengthen the service providers and provision infrastructure, knowledge management system and policy framework (output level) so that smallholder farmers ultimately improved farming practices and increase their yield and income which lead to improvement in food security nutritional status (outcome/ impact level).

There were seven broad expected outcomes indicated in the project document (also is evident in the results chain above). They are:

a. Capacities of AAS country fora, sub-regional and regional networks strengthened
b. Inclusive accessibility of smallholder farmers and producer organizations to quality agricultural advisory services (AAS) improved
c. Responsiveness of AAS actors' services to the needs of smallholder farmers strengthened with the harnessing of tools and opportunities provided by AAS
d. Recognition of the added-value of AAS platforms in addressing common areas of concerns facing AAS actors increased
e. Knowledge Management System involving networked AAS actors at national, sub-regional and regional levels enhanced
f. The integrated regional Knowledge Management Strategy is developed and implemented

g. AAS strengthened in their role in regional and national policy dialogues on agricultural and rural development and engage in these



Our findings related to effectiveness of the project interventions are presented below against their major intended project outcomes. The final evaluation looked into the project's achievement against these expected outcomes, details of which is shown in the subsequent sections.

3.1 Results Area: Establishment and Capacity Assessment of Country fora to Strengthen Governance of AAS Institutions

Before starting SAAS project, BAEN conducted following two tasks in 2016 for Capacity Needs Assessment for Agricultural Advisory Services of Bangladesh:

- Report on "Capacity Development for Extension and Advisory Services in Bangladesh" which was published as AESA Working Paper 2016 – 003.
- Workshop report on "Capacity Needs Assessment (CNA) for EAS in Bangladesh" conducted during 27-28 February, 2016 at Proshika Human Development Trust, Koitta, Manikganj, Bangladesh

Following activities were completed just after starting the project officially to set content and design module for the capacity building of AAS agents.

	Activities	Status	Date of completion
1	Consultation and Planning Workshop for Capacity Assessment of country Fora	Completed	01-02 April 2017
2	Year end project review meeting	Completed	7 July 2018

After singing MOU for conducting SAAS project in Bangladesh, first of all, a National Steering Committee (NSC) was formed to provide oversight of project activities that support priorities set by the Country Forum within the context of the Project Scope. It is composed of 14 Members containing representatives from the National, International, Government, Non-Government and Private Extension Providing Organizations.

BAEN conducted the 'Consultation and Planning Workshop' for country situation analysis of AAS based on findings from the previous two assessments which had been conducted by BAEN in collaboration with AESA. In this learning event, 48 Participants including Planners, Practitioners and Supporters representing 28 agencies and networks involved in EAS were attended.

Figure 1: Workshop Capacity Need Assessment (CNA) for EAS on 27-28 February, 2016

The aim of the 2-day consultation workshop was to validate the findings and recommendations made by previously completed capacity assessment studies on EAS in Bangladesh. The study reports were:

1. Report on "Capacity Development for Extension and Advisory Services in Bangladesh" which was published as AESA Working Paper 2016 – 003
2. Workshop report on “Capacity Needs Assessment (CNA) for EAS in Bangladesh” conducted during 27-28 February, 2016 at Proshika Human Development Trust, Koitta, Manikganj, Bangladesh

The studies reviewed and prioritized the issues and opportunities in policies, institutions, and human resources especially in the light of compelling challenges such as climate change. Both assessments and workshops mapped out the capacity requirements of the AAS agents and accordingly developed the contents of the capacity building training for the AAS agents.

In addition, year-end project review was held on 7 July 2018 at Giasuddin Milky Auditorium Conference Room, Dhaka.

The indicator what have been selected by the SAAS to measure the trainee’s satisfaction under the capacity building component is;

Indicator #4: Average percent of AAS actors and stakeholders recognizing the added-value of AAS platforms (country fora, sub-regional and regional networks)

The evaluation team estimated based on AAS agents interview findings that on an average 90% of AAS actors and stakeholders recognizing the added-value of AAS platforms. Based on the evaluation it was also found that AAS platforms members are recognizing more value in their organization as well as their personal skills as compared with the non-members of AAS platforms.

But the AAS agents opined that there is room for further improvement on accessing updated information, service delivery in the field with a coordinated way across DAE, DoF, DLS and NGO partners with more initiatives should be undertaken by the authority in future endeavor.

Indicator #3: Average percent of key organizational capacity areas where AAS platforms (CF, S-RN, RN) perform well as measured by a defined organizational capacity assessment tool Conducted Capacity Assessment of AESA in 2017.

Average 80% of key organizational capacity areas were identified where AAS platforms perform well. Key capacity areas refer to general network, organizational and institutional functionality, knowledge management, ICT use, professionalism of AAS and advocacy.

3.2 Results Area: Improve individual capacities of AAS to effectively serve smallholder farmers and respond to their demands

After the situation analysis on AAS capacity requirements and consultation and planning workshops, the priority directions for CNA and CF were packaged and circulated among the CF members in 2017, thus formulated following five (5) Working Groups for the capacity development strategy formulation and implementation for the CF and AAS agents in Bangladesh;

a. Gender and nutrition sensitive extension
b. Market and value chain development
c. ICT for monitoring and knowledge management
d. Adaptation to climate change
e. Curricula review

Those Working Groups conducted several meetings, identified learning events. The first four groups developed following Training Modules in their respective areas which were validated through the Pilot Trainings with AAS agents of IFAD funded "Promoting Agricultural Commercialization and Enterprises (PACE)" project and "National Agricultural Technology Program (NATP-DAE, DLS & DOF)", YPARD, and other Government and Non-government organizations:

Group Name	Training Name	Venue	Comple-tion date	No. of Trainees
Gender and nutrition sensitive agriculture	Gender and nutrition sensitive agriculture	SOJAG Center, Kalampur, Dhaka	13-15 May 2018	27
Market and value chain development	Market and Value Chain Development in Agriculture	Farmers Training Centre, SDI, Dhamrai, Dhaka	01-03 September , 2018	21
ICT for monitoring and knowledge management	ICT and Knowledge Management in Agriculture	ICT Lab, AIS, Khmarbari, Dhaka	08-09 February, 2019	25
Adaptation to Climate Change	Climate Change Adaptation in Agriculture	Sher-e-Bamgla agricultural University, Dhaka	12-14 June 2019	28

Trainees of these pilot trainings have been acting as the Trainers of the Trainings organized by their own organizations for their beneficiaries like rural small farmers including women and youth by using the Training Modules developed by BAEN.

Beside the training organized by Working Groups, BAEN also completed Training on “Web Operation and Content Management” conducted with 23

Figure 2: Training on web portal operation and content management on 29-30 July'17, SAU, Dhaka

Participants of different AAS providing organizations during 29-30 July 2017 at Sher-e-bangla Agricultural University, Dhaka.

Another working group namely 'Curricula review group' conducted several meetings for reviewing i) Undergraduate Course Curricula of Agriculture Extension & Information System discipline of Different Universities and ii) Training Modules of Extension Service Providers of Bangladesh. After reviewing of these, a policy dialogue on **"Improvement of Agricultural Extension & Information System Curricula of Universities and Training Modules of Extension Service Providers of Bangladesh"** was conducted at Sher-e-Bangla Agricultural University, Dhaka on 18 June 2019.

BAEN also organized following learning events for individual capacity deelopment in collaboration with other organizations by using their fund:

#	Name of Learning events	Collaborating organizations	Date of completion
Capacity Development			
1	Interactive workshop with fellow agricultural extension and advisory services stakeholders	DLEC	4-5 Dec, 2016
2	Workshop on Agricultural Extension Approaches and Experience Sharing	IFMC, DAE	19 May 2016
3	Presentation and Experience Sharing Workshop on Good practices /approaches	IFMC, DAE	10 January 2017
4	Workshop on Agricultural Extension Approaches and Experience Sharing	IFMC, DAE	30 March 2017
5	Workshop on Extension approach presentation and lesson sharing	IFMC, DAE	09 September 2017

Forty (40) organizations presented their activities during the knowledge sharing workshops organized by BAEN in Collaboration with IFMC, DAE. BAEN also visited the extension approaches/activities of 37 projects/organizations out of these 40 organizations and awarded 12 projects/organizations in the BAEN Bi-annual General Meeting in November 2017.

Figure 3: BAEN team visited IFAD funded PACE project at Coast Trust in Cox's bazar

BAEN participated on the "International Conference on Transforming Agricultural Extension Systems: towards achieving the Relevant Sustainable Development Goals (SDGs) for Global Impact" in Sri Lanka in 2018 jointly organized by Srilanka Agricultural Extension Association (SLAEA) and Participatory Rural Development Initiative Society (PRDIS) of India, supported by FAO and IFAD. Kbd. Hamidur Rahman (BAEN President) chaired in the fifth

session on "Water and Sanitation Management" and also attended in "Regional Workshop on Knowledge Management and MEAL and APIRAS Steering Committee Meeting" in Singapore in March 2019.

BAEN Secretary General attended in "AESA Governance Meeting" in Nepal in 2017, IFAD Supervision Mission in Philippines in 2017, "APIRAS Governance Meeting" in Indonesia in 2018, and Regional Learning Event and Experience Sharing for best Practices of AAS" in Thailand in July 2018. Four BAEN Members attended 9th GFRAS Annual Meeting in October 2018 in Korea and BAEN Vice President attended in the Policy Dialogue on "Role of EAS in Scaling-up Climate Smart Agriculture" in Sri Lanka in 2018. All these are being said that the knowledge and capacity of BAEN team increased from those international events which have been transformed to the AAS agents through different events under SAAS. The indicator what have been selected by the SAAS to measure the AAS agent's connection with different tools and opportunities is;

Indicator #2: Average percent of AAS actors harnessing tools and opportunities provided by AAS CF and networks to improve their services

The evaluation team estimated (based on interviews with selected AAS actors) that on an average 70% of AAS actors harnessing tools and opportunities provided by AAS CF and networks to improve their services. The project has developed knowledge products including AAS related manuals, good practices, and guidelines to strengthen quality services to the farmers which had been learnt during the field investigation. But the evaluator suggests to make this more functional in terms of active engagement with the tools, regular review and deliver service accordingly.

3.3 Results Area: Knowledge Management

Knowledge Management (KM) Assessment and Regional KM Strategy developed by APIRAS was adopted by BAEN. SEARCA signed a Memorandum of Agreement (MoA) with BAEN in November 2016 for implementing 3-year SAAS project. SEARCA is providing overall leadership and project management. APIRAS and Agricultural Extension in South Asia (AESA) are providing technical guidance and support. BAEN has been leading the implementation of the project activities at the country level in Bangladesh.

Since inception, the SAAS completed a number of events under the knowledge management component which are describing below. The AAS agents and stakeholders in the arena of agriculture are using the knowledge product and disseminates them among the farmers.

#	Activity Name	Status	Date of completion
Knowledge Management			
1	BAEN biennial General Meeting Souvenir developed with funding from OXFAM	Completed	November 2017
2	Workshop on the New Extension Learning kit & writing Good practice noted in Extension	Completed	10-11 March 2018
3	7 Good Practices has been developed and published by BAEN	Completed	By June 2019

4	BAEN Strategic Plan development	Completed	June 2019
5	Knowledge Management Strategy development	Completed	June 2019
6	37 Exposure Visits (in country)	Completed	June 2019
7	Validation Workshop on Knowledge Management Strategy of BAEN	Completed	22 June 2019
8	Validation Workshop on BAEN Strategic Plan	Completed	22 June 2019
9	Revalidation of BAEN Strategic Plan by a small group of stakeholders	Completed	25 June 2019

Two Consultants were appointed jointly to develop agricultural KM strategy in Bangladesh shortly. The goal of KM in BEAN was to transform information into actionable knowledge to support farming community and AgExtension Service Providers. BAEN has developed a website (http://baenbd.net) with various knowledge content on agricultural practices and technologies. An Agricultural Knowledge Audit platform is created and is available in the BAEN website. In addition, the website contains links of 85 agricultural apps and relevant links that are designed and resourceful for both the extension service providers and users like farmers. This is undoubtedly a comprehensive knowledge platform for the agriculture extension service of Bangladesh which is maintained by BAEN. However, in order to make the platform more functional, effective and sustainable, more work should be done on establishing/ installing regular information update system, system maintenance and dissemination of the knowledge and use of this platform among a wide range of stakeholders across the country including root level extension service providers and farmers. BAEN should design a new project for scaling up the benefit of this KM platform across all the AAS agents in Bangladesh.

A workshop on “Using New Extension Learning Kit (NELK) and Writing Good Practice Notes on Extension & Advisory Services (EAS)” was conducted under the KM component during 10-11 March in presence of AESA Focal Point Dr. Rasheed Sulaiman V. A total of 40 Participants attended the workshop including Working Group Members, Professors of Agricultural Extension discipline of different universities of Bangladesh, IFAD funded NATP and PACE project personnel of Bangladesh, BAEN Executive Committee Members, and National Steering Committee (NSC) Members of SAAS Bangladesh. In the workshop, it was decided that the participants will use NELK for Extension & Advisory Service (EAS) activities for their organizations. They will also take necessary action to motivate their colleagues to use the NELK for EAS. It was also decided that five Good Practice Notes on EAS will be written by the participants by June 2018.

Figure 4: Workshop participants on 10-11 March 2018 at Giasuddin Milky Conference, Farmgate Dhaka

By June 2019, there have been seven good agricultural practices developed and published on the BAEN website which are;

1. BAEN Mini Pond: A Way for Supplementary Irrigation in Drought Prone Areas Dr. Abu WaliRaghib Hassan, Consultant, DAE, Khamarbari, Dhaka, Bangladesh Dwipendra Chandra Sarker, Agriculturist, Dhaka, Bangladesh
2. BAEN Increasing Cropping Intensity: Way to Increase Crop Productivity by Kbd. Abdul Malek Prof. Dr. Md. Sekender Ali
3. BAEN Second Crop Diversification Project: An Integrated Extension Approach for Rural Development Dr. Ashoke Kumer Roy
4. BAEN Enhancing Hilly Agricultural Marketing Systems in Bangladesh through the Collection Center Dr. Noor Akter Naher (Reba)
5. Agriculture, Nutrition, and Gender Linkages (ANGeL) strengthened the Agriculture-Nutrition-Gender nexus Kbd. Masuma Younus Deputy Research Director, APSU, MoA
6. Bee keeping, a way of increasing mustard yield – Dr. Md. Shakhwat Hossain (Professor, Department of Entomology, SAU Dhaka)
7. Conservation of Urban Surroundings of Dhaka City through Roof gardening with changing environment – Md. Mahbub Islam (Professor, Department of Agriculture of Botany, SAU Dhaka)

Five Knowledge Sharing Workshops were conducted at IFMC conference room with the financial help from IFMC. Forty (40) organizations/projects presented their extension approaches/activities in the workshops.

It was found from the field research that those good practices are being reviewed by the AAS agents and replicate them in the field implementation. The indicators what have been selected by the SAAS to measure the KM component are;

Indicator #5: Number of AAS-related knowledge products generated, used and shared via the knowledge management platform by AAS providers with the assistance of SAAS
Indicator# 6: Number of AAS Knowledge Management Strategic and operational documents in each of the following stages of development as result of SAAS assistance:

Stage 1: AAS actors Knowledge Management (KM) needs assessed;
Stage 2: The regional Knowledge Management Strategy (MS) is drafted and cascaded at regional and national level;
Stage 3: State of the art assessed and implementation refined;
Stage 4: Priority areas of the KMs implemented including a functional online platform

One knowledge management strategy has been drafted at regional and national level with the relevant actor's need assessment. There are some priority areas were identified in AAS knowledge strategy and some of them started to implement through BAEN websites (http://baenbd.net). As a part of implementing knowledge management priorities some AAS related good practices, knowledge product including different types of agricultural apps already uploaded on the website for the stakeholders.

3.4 Results Area: Policy Engagement in High Level Policy Dialogue at National Level

In Bangladesh, a large number of Extension and Advisory Service (EAS) Providers are working under the public, private, NGOs and voluntary sector. Knowledge and skills related to agriculture (including crop, livestock and fisheries) are provided by these organizations. Bangladesh achieved a lot in the agriculture sector in last few decades but still there is a significant proportion of farmers of Bangladesh remain untouched in terms of integrated and coordinated services at grassroots level. To develop an effective and efficient service delivery system among the farmers through AAS agents following two policy dialogues were organized by the BAEN under SAAS:

#	Activity Name	Status	Date of completion
Policy Dialogue			
1	BAEN Policy Dialogue 1: Strengthening Coordinated Advisory Services for Sustainable Agriculture in Bangladesh	Completed	20 April, 2019
2	BAEN Policy Dialogue 2: Improvement of Agricultural Extension and Information System Curricula of Universities and Training Modules of Extension Service Providers of Bangladesh	Completed	18 June, 2019

Planning Commission (2015) noted that the main extension services provided by Department of Agricultural Extension (DAE), Department of Fisheries (DOF) and Department of Livestock Services (DLS) are mostly dependent on project funds. The major weaknesses of this project dependency were identified that certain areas seem to attract repeated projects whereas others get none; duplication of efforts, while similar approaches may be tried repeatedly without success. On this backdrop, a National Agricultural Extension Policy was proposed which was suggested to form “National Agricultural Extension System” by the coordination of Government and Non-Government extension organizations. The NAEP 2019 was made to encourage the various partners and agencies within the National Agricultural Extension System (NAES) to provide efficient and effective coordinated services which complement and reinforce each other, in an effort to increase the efficiency and productivity of agriculture in Bangladesh for ensuring food security and business development. Coordination of combined and integrated extension service is one of the important elements of proposed National Agricultural Extension Policy 2019. In this policy, it is suggested to form “National Agricultural Extension System” by the coordination of Government and Non-Government extension service providing organizations of crop, livestock and fisheries sectors.

Policy Dialogue 1: On these considerations, the Society for Bangladesh Agricultural Extension Network (BAEN) organized those Policy Dialogues in Bangladesh under the SAAS project. These dialogues aimed at empowering National Agricultural Extension System (NAES)”. The first policy dialogue was on **“Strengthening Coordinated Advisory Services for Sustainable Agriculture in Bangladesh”** with the financial help from IFAD funded SAAS project at BARC conference room on 20 April 2019.

A total of 66 individuals including Heads of Agricultural Organizations of Bangladesh, BAEN Executive Committee & Advisory Committee Members and National Steering Committee

Members of SAAS (Bangladesh) were participated in the event. The policy dialogue on "Strengthening Coordination of Combined and Integrated Extension Service" emphasized on issues like diversification of extension services with mechanization, agri-business, agro-processing, agro- climatic advisory service, on-farm water management, agro-product branding etc. Farmers' Organization based Extension Program with decentralization of extension plan, export of agricultural products, sequential enhancement of e-agriculture, use of alternative energy in agriculture, investment in commercial agriculture, instructional capacity building including knowledge and skill, strengthening research-extension relationship to provide services at the right time to right person, natural resources management and input use efficiency, agro-tourism, adjustment with climate change, specialized extension services for stressed regions, coordination with the international agricultural organizations, enhancing Nutritional Safety and conservation agriculture like minimum tillage.

After a long dissuasion, several policy issues were identified. "BAEN may lead the coordination for strengthening Agricultural Advisory Services in Bangladesh by empowering National Agricultural Extension System (NAES)" was the main recommendation of the dialogue. The Policy Dialogue on "Strengthening Coordinated Advisory Services for Sustainable Agriculture in Bangladesh" emphasized on a number of recommendations could be found in the *Annex 3.1.*

Policy Dialogue 2: BAEN organized a second policy dialogue on "Improvement of Agricultural Extension and Information System Curricula of Universities and Training Modules of Extension Service Providers of Bangladesh" at Sher-E-Bangla Agricultural University conference room on 18 June 2019. A total of 45 individuals including Heads of Agricultural Organizations of Bangladesh, BAEN Executive Committee & Advisory Committee Members and National Steering Committee Members of SAAS (Bangladesh) were participated in the event. The major recommendations of the policy dialogue were as follows:

- Curricula in every agricultural university should be revised and it should be done in a concerted way so that there is uniformity in courses and contents among the curricula in all the universities. Courses on extension services should be increased (at least 8 to 14 credits) and 50% of the credits should be field based (so that students have hands on experience). These curricula should be revised after each 4 to 5 years based on modern developments in relevant knowledge field.
- ICT based coursed and its applications should be incorporated everywhere, in courses and credit hours, teaching techniques, creating knowledge hubs, etc. Three credit course (Theory-2 and Practical -1) on "Agricultural Information System", "Livestock Information System", and "Fisheries Information System" should be included in the undergraduate syllabus of crop, livestock and fisheries related faculties respectively.
- Every Undergraduate course of agricultural sciences should include internship. Internship programs should be designed in a way so that interns can learn how to deliver the message to farmers, i.e., knowledge on extension service provision modalities. During internship, interns should be tagged local extension officers in the field, go to farm-doors with them and see how the message is delivered.

- At present agricultural universities are poorly connected to government extension service providers (and vice versa) and there is no established communication and knowledge transfer platform or channel in between them. This should be changed, and they should be more connected to each other so that students can have more internship opportunity options with DAE, DLS and DOF; this will also increase opportunity for more relevant research options and knowledge transfer in between the two parties.

The indicators that were selected by the SAAS to measure policy level engagement are;

Indicator#7 *Number of national AAS policies and AAS in policies in each of the following stages of development as a result of SAAS assistance:*

- Stage 1: Analyzed;
- Stage 2: Drafted and presented for public/stakeholder consultation;
- Stage 3: Presented for legislation/decree;
- Stage 4: Passed/approved;
- Stage 5: Passed for which implementation has begun

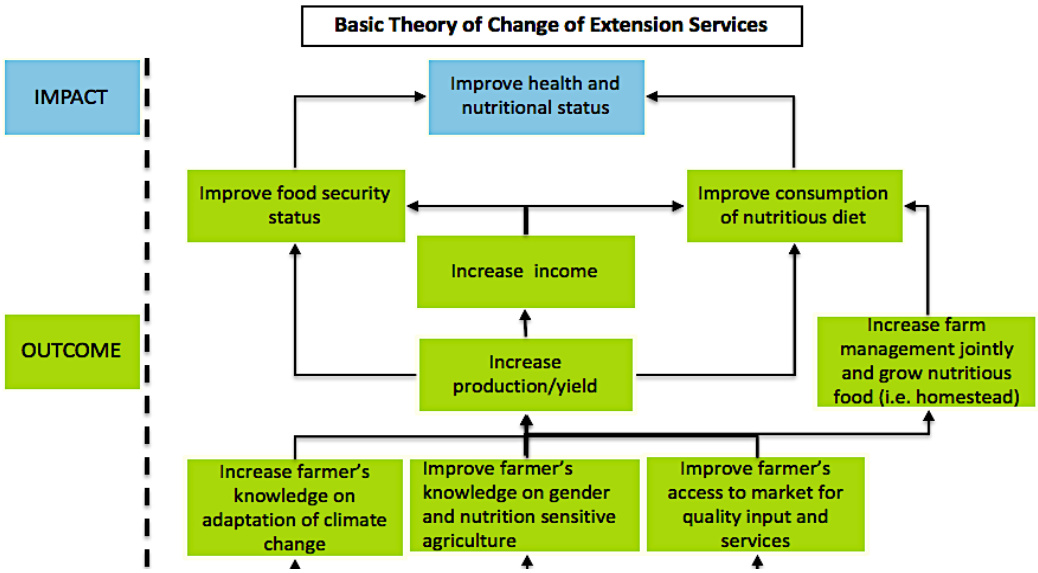
Indicator#8: Number of policy dialogues organized with the support of SAAS

Indicator#9: Number of AAS policy advocacy champions identified and involved by SAAS

As we have already discussed, BAEN organized the two planned Policy Dialogues including 1) "Strengthening Coordinated Advisory Services for Sustainable Agriculture in Bangladesh" and 2) Improvement of Agricultural Extension and Information System Curricula of Universities and Training Modules of Extension Service Providers of Bangladesh in Bangladesh. Policy recommendations were analyzed, drafted and presented in the stakeholder's workshop for public/ stakeholder consultation; but those policies have not yet been passed or accredited by higher authorities or implementation began officially due to small timeframe of the project. For indicator 9, BAEN visited a number of NGOs of them 12 NGOs were awarded for their exceptional good work in 2017. *The detailed proposed draft policies can be found under the Annex three 3.2.*

Chapter Four: Outcome/ Impact of Project Interventions

The project aimed to build capacity of AAS providers so that farmers can be reached with the improved production techniques and other agricultural messages by the AAS providers or extension workers. As discussed earlier, the SAAS project targeted major five themes to be covered under extension services. A basic theory of change on the agriculture extension work is given in Chapter Two, and a segment of the output and outcome sections is presented below to show the results of farming households who have access to the extension services capacitated by SAAS. As we can see, with increased access to extension services and improved adoption of better practices, there is increase in farmers' production, sales and income which leads improved food security and nutritional status.



Outcomes and impacts of strengthened extension services by SAAS are briefed below.

4.1 Increased Knowledge Level

SAAS project aimed to enhance technical knowledge of the AAS actors working in the GO, NGO extension service on the targeted five themes. The AAS actors were not adequately knowledgeable on those themes but had a basic understanding. On the other hand, all five themes were not covered by the existing extension project or organization.

The capacity development sessions by SAAS created an in-depth learning opportunities for the extension agents which enabled them to disseminate modern agro information to farmers through their existing projects. It was revealed during the field visit by the evaluation team *(PACE project, SDI, Dhamrai and BASA, Dhaka)* that the staff under PACE project who were also trained by the SAAS are also promoting their learning among the local farmers.

Training recipients (extension agents) stated that they learnt about many modern and new issues regarding market and value chain development, adaptation measures of climate change and nutritional knowledge from SAAS trainings. It was observed that the SAAS's capacity development initiatives have triggered agents' extension service provision behavior significantly. However, the evaluation team found that there some still areas of improvement in terms of knowledge transfer.

The evaluation team also found out increased linkage between the farmers and local private sector actor (e.g. Ispahani Biotech) where farmers are increasingly using organic Integrated Pest Management (IPM) technology called sex-pheromone trap that significantly reduced their vegetable production costs. It was also found out that some women within the visited community are producing organic compost fertilizer (vermicompost) which increase yield and decrease fertilizer cost. It was found that relevant knowledge on improved technology were provided to farmers by the trained extension service providers.

4.2 Farmers having Improved Access to Services

Indicator #1: Average percent of smallholder's farmers (men, women, youth and indigenous people) and producer organizations' (POs) with better access to quality AAS

From FGDs with farmers the it was found out that smallholder farmers and producer organizations now have better access to quality agricultural advisory services. At the same time, smallholders and producers organizations were asked about their satisfaction level over service accessibility and two-third of them reported that now they can access quality government extension services readily and without the barriers that they had faced before.

A wide range of vegetable production technologies was promoted among the beneficiaries which were promoted by the agricultural advisory service providers. The FGD participants also reported that it is the extension officers (capacitated by SAAS) from whom they learnt about these technologies and practices. Hence, the sustainability potential for these technologies seem to be quite high. Among the technologies promoted, usage of high yielding vegetable seeds was found to be the highest among the beneficiary households and it improved farmers' enterprise performance including farm productivity, sales and income. There were also increased adoption of vegetable cultivation technologies including sex pheromone trap, and vermicompost (organic fertilizer). Besides, more households were found to be involved in home gardening.

Beneficiaries of 'Increasing Cropping Intensity in Sylhet Region' project said that their lands were fallow because they did not cultivate their lands due to lack of labour. By the initiatives of the project, they were motivated to cultivate their fallow lands with varies types of crops including vegetables and fruits. After adopting the

Figure 5:BAEN team visiting increasing cropping intensity project in Sylhet

agro-technologies of the projects, they increased the cropping intensity of their lands and as a result, crop productivity of the lands was increased.

4.3 Impact related to Adaptation to Climate Change

The trained AAS actors were asked about their learning and extension experience regarding adaptation to climate change theme. A satisfactory knowledge on climate change adaptation was observed during the discussion. They were able to point out the major topics which they learned from the course. The AAS agents who were from the non-agriculture background, were found to be highly satisfied with the training content.

The SAAS project introduced AAS agents with knowledge on climate resilient agricultural techniques related to flooding, natural disaster, and salinity prone areas, and they are supposed to regularly disseminate these information to community farmers through their daily activities and field visits. Therefore, the study team also tried to understand farmer's level knowledge and practice regarding climate change adaptation measures through FGDs. The FGD areas were found to be drought prone with incidence of monsoon flooding and farmers were found to be well acquainted with the techniques on drought prone crop varieties and how to address the drought situation. They have learned on how to maintain the soil moisture (Mulching technique) during the drought situation and also how to save their pond fish by raising pond dike during heaving raining/flooding.

BAEN Team also visited IFAD funded NATP of DAE at Kutubdia Upazilla under Cox's Bazar district on 24 March 2018. The Team shared their views and ideas with the project personnel. The Team was satisfied after observing the 'Common Interest Group (CIG)' activities of the NATP Kutubdia Upazila for increasing agricultural production. Both male and female costal rural farmers were increased their agricultural knowledge for crop production in saline soil by fighting with changing climatic condition.

In addition, BAEN Team visited IFAD funded 'PACE' project activities of Coast Trust at Cox's Bazar sadar upazilla on 25 March 2018. Coast Trust, a Partner Organization (PO) of Palli Karma-Sahayak Foundation (PKSF) was conducting IFAD funded PACE project at Cox's Bazadar Upazila. They promoted chemical free dry fish production in the coastal areas. It was found that dry fish producers of the area were happy with the activities of the PACE project by using low cost fish drier. They are now able to produce chemical free dry fish which is very popular to the consumers.

4.3 Impact related to Gender and Nutrition Sensitive Agriculture

The SAAS project provided the training to extension service providers on gender and nutrition sensitive agriculture for the AAS agents. The training contained a number of important topics on the subject matter including antenatal and postnatal care, breastfeeding, complementary feeding, dietary diversity, homestead gardening, nutritional and feeding requirement for the pregnant and lactating women (PLW) etc. The training recipients shared with the evaluation team that the training knowledge was very important to them for their own capacity development and knowledge dissemination among farmers (both male and female members in farming

households). They stated that members in farming households have big knowledge gap regarding nutritional requirements for family members, breastfeeding, antenatal and postnatal care, safe food, dietary diversity and other relevant issues. The interviewed AAS agents mentioned that they did not have the chance to receive such in-depth knowledge on the gender and nutrition earlier and were highly satisfied to receive the training.

The pre-post training assessment found out 60% change or improvement in knowledge among participants (participants obtaining on an average 20 and 80 scores in the pre and post tests respectively). The AAS agents were interviewed as per a qualitative checklist to understand change in knowledge and also their overall experience regarding training. Most of the participants said they they are satisfied with the experience, however, also said that training time should be increased as it is too short right now and there should be at least two more refresher training with 6 month to one year gap. *Detailed training schedule, pre-posttest tool and participants list could be found in the Annex one - 2.1.*

The evaluation team also tried to understand farming household level changes in knowledge, practice and behavior regarding food security and nutrition. In FGDs with farmer family members, the women participants reported that they had minimum knowledge on the nutritional food requirements of women and children, antenatal and postnatal care, complementary feeding practice, homestead gardening, etc. However, in recent months they started learning few things from the extension officers. Women reported that their activities and decision making capacities also increased in recent time. They reported that they support men to irrigate, harvest, sort and grade vegetables at field. In case of poultry and livestock rearing, women were found to play a vital role. It was also found that male and female members jointly take decisions regarding food expenditure.

In addition, Agriculture, nutrition and gender were strongly linked in ANGeL project areas. Rural women farmers were trained and they were conscious about nutrition sensitive agricultural production and consumption to protect their health including their family members.

Nevertheless, they also said that there exists a big gap in their knowledge and practice yet and they hope that in coming days they would get more access to local extension officers and learn more about relevant issues. For example, in most of the cases, homestead vegetable gardens were found but most of them were unable to explain the nutritional benefits of that vegetable consumption.

4.4 Impact Against Market and Value Chain Development

The AAS agents received market and VC training by the SAAS which was another new knowledge to them. As they reported, they were not properly educated on the market system approach before the project. The extension service providers stated that they learnt about market development issues including market mapping and relationship analysis, constraints analysis, service market, M4P (market for poor) approach, benefit of value chain analysis and development, etc. The pre-post training assessment found out 40% change or improvement in knowledge among participants (participants obtaining on an average 25 and 65 scores in the pre- and post- tests respectively). The AAS agents were interviewed as per a qualitative

checklist to understand their knowledge which was observed moderately satisfactory during the conversation.

Figure 6: Farmer using sex pheromone trap through value chain development under IFAD funded PACE project (SDI), Dhamrai

It was revealed from the discussion with the AAS providers that Value Chain (VC) and Market Development training course accelerated their knowledge on the market system. Now they were found to know market actors who play a key role (or governing role) in the market systems. The course also created understanding on how to ensure competitive market price for the produce of smallholder. They stated that from the training sessions they have learned that collective purchase and sales practice can be an effective way of increasing accessibility to input and output market services and ensuring good prices for their products. A vegetable aggregation point was seen under construction with the support from IFAD funded Promoting Agriculture Commercialization and Enterprises (PACE) Project during the field data collection which expected to address farmers' constraints regarding price fluctuation, poor pricing and high transaction cost. *Detailed training schedule, pre-post test tool and participants list can be found in the Annex one - 2.2.*

It was found by the evaluation team that although their knowledge has increased as compared to pre-project situation but still there are lots of scope of improvement. The evaluation team also tried to understand farming household level changes in knowledge, practice and behavior regarding value chain and market accessibility. Quality of inputs and access to relevant technical messages timely were the main problem that they usually faced before. Pricing of produces during the pick season has also been a considerable constraint problem where they seek government o extension support. It was found during the FGD that the participants (including a few women) were able to name and locate major market actors who work in the local area. They also explained where and whom to contact if they encounter any problems with their crops and vegetables. During the FGD a private sector actor from the Ispahani Biotech attended and it was found that there had been a growing market/ business connection between NGO, farmers and market actors what can be partially contributed to SAAS trainings.

A vegetable aggregation point was found under construction with the support from IFAD funded Promoting Agriculture Commercialization and Enterprises (PACE) Project . During data collection, a vermicompost production centre was also found which was run by a woman who produces and sells vermicompost to other farmers. The SAAS can further establish such aggregation centers and women entrepreneurs and link them with the local lead farms and markets to promote increased production of crops, vegetables and organic fertilizers.

4.5 Impact Related to ICT for Monitoring and Knowledge Management

To assess the current architecture and practice of KM a web based survey has been conducted recently (June, 2019) by consultants where participants from different organizations including academic, research, extension, public, private, development, and NGO participated in the process. During the assessment, the respondents were asked about “Use of BEAN Website in last 30 days” and it has been found that 50% of them used website in last 30 days, 33% and 17% not used and not sure about their use respectively.

As stated in Chapter 3, BAEN developed a website (http://baenbd.net) with various knowledge content on agricultural practices and technologies. The website contains links of 85 agricultural apps and relevant links that are designed and resourceful for both the extension service providers and users like farmers. This is undoubtedly a comprehensive knowledge platform for the agriculture extension service of Bangladesh which is maintained by BAEN. From the user point of view, it has been found that their attitude towards the use of ICT based KM changed positively though BEAN have opportunity to improve knowledge product sharing practice among different agricultural extension service providers.

Chapter Five: Sustainability of Project Outcome

5.1 Sustainability of Agricultural Advisory Services (AAS)

The SAAS project has introduced some key themes with the AAS providers including NGOs and GoB extension workers which they promote with smallholder farmers through day to day activity. Good agriculture production practices, climate change adaptation, gender and nutrition sensitive agriculture are key themes that are being promoted by the AAS. The following paragraphs depict the areas that the evaluation team found (through KII and FGD) to be sustainable.

- They study team found that the smallholders farmers in the data collection areas are familiar with the AAS providers especially Paravet, SDI (NGOs), DAE staff (SAAO) etc. For any sort of emergency information if needed for their crops, they communicate directly with those actors and can receive services. However, they also reported that alike SAAO, there is no veterinary or fishery extension service provider available from whom they cn receive relevant services.
- Most of the extension service providers reported that now they have increased technical skills on production and business i.e. cultivation practices and technologies, production planning, and negotiating skills. However, they also suggested that to sustain those knowledge or skills in the long run, they need more refresher training on the technical and business aspects of agricultural production system.
- The study area was found to be drought prone area and the farmers found well acquainted with the technique on how to address this situation. They have learned how to keep soil moisture (Mulching) during drought period and also how to save their pond fish by raising pond dike during flooding. The SAAS project introduced some other climate resilient production techniques for flood, natural disaster, and salinity prone areas through the AAS providers. The extension service providers were found to be interested and committed to continue disseminating their knowledge on those techniques and practices.
- Large farmers were found to be connected both with the forward and backward market actors. However, smallholder farmers were found to have less accessibility to the inputs market and modern technologies (high yielding seeds, sex pheromone trap etc.). In case of forward market linkage, the smallholders often cannot have anticipated market price for their produce. A vegetable aggregation point was seen under construction through the IFAD funded Promoting Agriculture Commercialization and Enterprises (PACE) Project during the field data collection which expected to address high transaction cost and pricing constraints of smallholder producers.
- Vermi-compost producers lack a concrete business model and do not have proper plan to whom and how they will sell the vermi-compost when the production volume will increase (as the production increases exponentially). Unless the producers are trained on sales forecasting, production planning, promotional activities and overall business planning and management, their business might not sustain in the long run.
- Almost all the women members reported that they are now involved with the production activity, especially on the micro irrigation, harvesting, sorting and grading etc. Also they provide intensive support on livestock management as this is reared within the domestic

periphery. Sales revenue spend with their joint decision of husband and wife. Women were able to control their income and they have a significantly better role in decision-making (thanks to project intervention on household decision making, gender sensitivity and social empowerment).

- FGD findings also suggest that group members' awareness level about improved production techniques and practices has increased compared to earlier. However, the study revealed that awareness about the technology is there, but still less of a drive to go out and invest in different technologies like vermi-compost, improved feeding, etc. Thus, the demand for these products are yet to be transformed into effective demand which entails that there should be willingness to purchase a product followed backed by the ability to buy it.
- Sustainability of behavioral change refers to whether the behavioral changes induced by project activities will continue, even if the respective project phases out. There are strong evidences to state that increased income of the smallholders along with increased awareness about production technology/technique, climate change adaptation, market and value chain actor, gender, dietary and nutritional aspects led to increased household expenditure on food and increased accessibility to diversified food and enhanced. Behavioral change regarding dietary practice, expenditure in children's education, family health and household assets have also been observed through observation and discussion with group members. In addition, women are now investing more money to revamp their households or buying income generating resources

It was also found that it would take time to sustain understanding on agricultural and commercial value chain knowledge, nutrition sensitive agriculture as well as adaptation of climate change among the AAS providers and smallholder farmers. More capacity development initiatives with extension service providers, more refresher training and strengthening of knowledge management platform are needed to sustain results or intended project impacts.

5.2 Sustainability of Knowledge Management

BAEN has developed a knowledge management platform by introducing many apps which include information on the different agricultural advisory services to be promoted among the farmers through AAS providers. These platforms have created both for an excellent access to knowledge platform for both the users and exte ntno who can extract information as required.

This AAS apps need to be promote amon griuo AAS agents and lead farmers in the village level first. The platform also contained with a lot of information which needs to be updated and managed properly by a skilled technical person and also a continuous dissemination and technical capacity building events for the AAS providers and smallholder farmers need to be arranged by the Upazilla level GoB actors includes DEA, DLS and DoF. Union digital center should also need to be oriented on those AAS apps so farmers can avail timely quality services as quickly as possible at their doorstep.

Chapter Six: Efficiency of the Project

Efficiency relates to prudent measures in the acquisition and management of inputs for the attainment of the project objectives and sustainability of the outputs. In order to determine that, the study team assessed resource utilization with regards to manpower capacity and their utilization in different project requirement areas. The study team feels that based on the results so far observed under this review exercise, the project and partner management of this component has been well utilized and fairly efficiently delivered. The skills and capacity of the partner staff seemed quite good. Having said that, the team feels require that they needed more mentoring and coaching on the themes including Knowledge Management and ICT.

6.1 Project Outreach

According to SAAS literature, it is estimated that a total of 7,000 smallholders' producers and 600 extension service providers (both GoB and NGO partners) reached by the SAAS interventions. All those farmers received improved message and services by the AAS agents during the project period. At the same time project also reached at least 14,000+ (1:2 copying ratio) indirect smallholder producers who copied good practices from directly reached farmers (by trained extension staff) which was found during field visits and stakeholder interviews.

6.2 Human Resource and Role of Different Stakeholders in the Project

There has been a lack of specialized personnel in the team. The partnering projects lacked extension service experts or specialists in their teams to implement the project more efficiently in that spectrum. Also, some partner's staff were not from the agriculture background or didn't have specialist so they should be mentored and coached regular basis. The Project Country Focal Staff was found heavily burdened with activities and deliverables having only one executive officer to support him. Considering the very low human resource input produced commendable results in this project.

6.3 Budget Utilization

USD 136000 was initially allocated for the SAAS project, out of which the project received USD 126250. By June 2019, 100% of the received budget was utilized in the planned activities. There was no separate budget for conducting MEAL. Conducting MEAL activity was also covered within this received budget which was not included in the Project Document.

6.4 Monitoring and Evaluation

Although there was no separate budget head for monitoring and evaluation, the study team found that all the activities were documented properly and periodic reports were developed and shared by project team on regular basis. Besides, regular field visit were made by the SAAS and BAEN management team. Although Pre- and post- tests were taken in training sessions and reports were prepared for the workshops and capacity development events, process monitoring or documentation tools were not found (probably because of limited human and logistical resources). Periodic external assessments like mid-term review were conducted to see unbiased outcome of the interventions. A well-documented written monitoring and evaluation protocol should be in place to track and understand progress being occurred by the interventions.

Chapter Seven: Replicability and Lessons Learned from the Project

There are a number of good Extension practices and implementation model replicated. Some lessons learned also mapped and good agricultural extension practices/approaches promoted under the agriculture extension;

- Linking farmers with the backward and forward market in order to create accessibility in the market for quality agri-inputs and better market prices for the produces. An aggregation point for the produced vegetables was found to be under construction by the PACE project, funded by IFAD, which is supposed to increase farmers' profitability and reduce transaction costs. However, committees need to formed with local farmers to make such aggregation point financially and operationally sustainable.
- The SAAS project has been linked with existing GO-NGO projects by engaging different stakeholders/AAS agents who transformed knowledge on the project intended themes to the smallholder producers. This approach has been an excellent idea to reach a large number of population with minimal cost and resource engagement.
- The project has been promoting agricultural technologies like Vermi-compost, sex pheromone trap to decrease production costs and increase production of safe vegetables. Such learning should be replicated in other areas that will boost safe vegetable production countrywide.
- The project has introduced web-based knowledge management hub where different organizations or persons already can share their leanings to disseminate knowledge product to wider level stakeholders.
- An integrated households approach was found by engaging smallholders farmers with the different agricultural production including livestock, fish and vegetable production, adaptation with climate change, consumption and nutritional knowledge as well as market access to quality inputs and services. This approach will help sustaining the project benefits.
- Enhancing Hilly Agricultural Marketing Systems in Bangladesh through Collection Centers or Aggregation Points (the Chittagong Hill Tracts (CHTs) are located in the south eastern part of Bangladesh and are divided into three districts: Bandarban, Khagrachari and Rangamati). Such initiatives can help improve agricultural production in our poverty pockets.
- BAEN Practice Note on "Mini Pond: A Way for Supplementary Irrigation in Drought Prone Areas" has been a popular adaptation options to climate change in drought prone area in north-western part of Bangladesh.

Chapter Eight: Areas of Improvement and Recommendations

1) National Agricultural Extension System (NAES) should be formed as the Apex body of the Agricultural Advisory Service Providers comprised of different relevant stakeholders including public and private extension organizations (crop, livestock and fisheries), research institutions, universities, NGOs and so on to ensure coordinated agricultural advisory services
2) Strength of the Extension and Advisory Service (EAS) providing organizations should be increased by increasing the number of manpower, capacity of the manpower and physical facilities of the organizations.
3) New funding sources, donor support should be found out for increasing the capacity of extension service providers and to increase the farm production.
4) Front level extension workers of livestock and fisheries sectors should be increased. Capacity of the Sub Assistant Officers (SAAOs) of the Department of Agricultural Extension (DAE) should be increased by providing livestock and fisheries knowledge until increasing the number of front level extension workers of the Department of Livestock Service (DLS) and Department of Fisheries (DOF) for providing holistic consultation to the farmers.
5) Capitalized local knowledge should be integrated with improved (national and international) knowledge. Extension should be focused on 'pay-to-service' approach to promote and sustain agricultural services.
6) National and local level agricultural advisory tools and methods applying by different organizations should be harmonized and integrated to ensure clients' satisfaction. Good agricultural practices/approaches should be collected, corrected, documented and disseminated.
7) There were no handouts or IEC material provided in the sessions that could be used by the extension officers during extension service provision. Besides, a detailed user guideline in Bangla can be developed and shared with the AAS actors on the way of accessing benefit from the KM platform. Extension officers can carry those handouts in his/her field and can use them during farmers visit or training as well as their day to day field operations.
8) Value chain and market development modules should be split as per sub-sectors (e.g. Brinjal/Chilli/Honey/Milk) and should not be generic.
9) Facilitator needs to use easy communicative language (Bangali) during the training. Also, more time, energizer game, field visits, group work, and hands-on learning session should be provisioned for future training session. Content and discussion process should be developed considering the level of participants.
10) BEAN should facilitate access to demand-driven, high-quality, ready-to use and relevant information in the field of AgExtension and prioritize information needs as well as service

needs for different stakeholders. BAEN should facilitate organizations to translate knowledge resources into actions for promoting value-added services. They should facilitate to reuse of existing knowledge product and enable collaboration and networking at national and international levels and advocate adoption of KM practices in Ag-Extension organization by motivating internal and external employees to contribute knowledge resources.

11) Agricultural Universities and research organizations should actively participate in advisory services and disseminating agricultural innovations to the clienteles with coordination of extension organizations like DAE, DLS, DOF, NGOs, private organizations, etc.

12) Curricula in every agricultural university should be revised and it should be done in a concerted way so that there is uniformity in courses and contents among the curricula in all the universities. Courses on extension services should be increased (at least 8 to 14 credits) and 50% of the credits should be field based (so that students have hands on experience). These curricula should be revised after each 4 to 5 years based on modern developments in relevant knowledge field.

13) ICT based coursed and its applications should be incorporated everywhere, in courses and credit hours, teaching techniques, creating knowledge hubs, etc.

14) NGOs/ Development agencies have emerged as significant and increasingly powerful actor in our development paradigm. Therefore, DAE, DLS or DOF – they should join forces with NGOs and development agencies and work together so that available resources and budget are best utilized. Besides, new avenues should be created for public-private-development agency partnerships.

15) Farmer Clubs should be established where farmers will meet regularly for chatting, discussing about agricultural practice, issues and problems, knowledge sharing and even for social entertainment.

16) Monitoring, Evaluation, Accountability and Learning (MEAL) system must be ensured in Agricultural Advisory Service (AAS). The Society for Bangladesh Agricultural Extension Network (BAEN) can take this responsibility through NAES.

17) Bangladesh Agricultural Extension Network (BAEN) organized two Policy Dialogues in Bangladesh under the “Strengthened Agricultural Advisory Services (SAAS)” project. The proposed draft policies presented in the stakeholders’ workshop, should be finalized immediately on priority basis and need to be passed, accredited with a clear implementation/operational guideline mentioning roles and responsibilities (by stakeholders) so that implementation could be done smoothly.

18) BAEN developed four training Modules. These should be distributed among the Extension and advisory service providing organizations of Bangladesh so that they can use this for the improvement of the capacity of their man power as well as for the farmers. Attempt should be taken to conduct at least 64 such trainings in 64 districts of Bangladesh.

Chapter Nine: Annexures

Annex One: Training

Annex 1.1 List of Participants on the Gender and Nutrition Sensitive Agriculture

Sl. No	Name	Designation & Organization	Organization
01	Md. Gulam Mustafa	Assistant Coordinator, SOJAG	Shomaj o Jathi Ghathan (SOJAG)-3
02	Kbd. Md. AbdulWhab	Somaj o Jathi Gothon(SOJAG)	SOJAG
03	Md. Abdus Salam	Coordinator , SOJAG	SOJAG
04	Osimon Nesa	Marketing officer SDS	Shariatpur Development Society(SDS)-2
05	Sultiana Parvin	Assistant manager SDS	SDS
06	Mukta Akter	Agriculture Extension Officer, Dhamrai	DAE-3
07	Najiat Ahmed	AEO, Savar, Dhaka	DAE
08	Meherunnessa	Additional Agriculture Officer	DAE
09	Md. Imran Bulbul Siddiquee	Fisheries Extension Officer, Savar, Dhaka	DOF-3
10	Tahara Rohomania	Fisheries Extension Officer, Singair, Manikganj	DOF
11	Nusrat Hossain Nushy	Fisheries Extension Officer, Sreepur, Gazipur	DoF
12	Kulsum Ara	SACMO ,SDI	Society for Development Initiatives (SDI)-2
13	S.M.Aulad Hossain	VCDF & TC, SDI	SDI
14	Rupa Akter	Paramedic - SUS	Social Upliftment Society (SUS)-2
15	Sanjoy Ch. Bhattacherjee,	Value Chain Facilitator, Savar, Dhaka	SUS
16	Md. Moznu Sarkar	Deputy Manager PKSF, Dhaka	PKSF-3
17	Kazi, Abul Hasnat	Deputy Mana ger, PKSF	PKSF
18	Mahmuda Morshed	Deputy Manager, PKSF	PKSF

19	Dr. Sonali Debnath	Scientific Officer LRI, Savar,Dhaka	DLS-3
20	Dr. Farhana Nayem	Scientific Officer LRI, Savar,Dhaka	DLS
21	Dr. Kohinur Aktar	Scientific Officer LRI, Savar,Dhaka	DLS
22	Mst. Masuma Akter Panna	Assistant General Manager, BASA	Bangladesh Association for Social Advancement (BASA)-2
23	Md. Kamal Hossain	Junior Auditor	BASA
24	Md. Forlul Haque	Senior Officer, SSS	Society for Social Service(SSS)-2
25	Umme Salma Akter	Nutritionist, SSS	SSS
26	Alam Taz Begum	Deputy Registrar	SAU-1
27	Sk.Md. Nur-E-Alam	OS,SAAS	SAAS-1

Schedule of Training Program on the Gender and Nutrition Sensitive Agriculture

Day	Time	Title	Contents
1st Day	9:00-9:30 am	**Registration**	
	9:30-10:30 am	Inaugural session	• Introduction to The Course, Pre Test
	10.30-10.50am	**Tea Break**	
	10:55-11:55 am	Gender Concept	• Understanding perceptions and Gender • Understanding the difference between equity and equality
	12.00-01.00pm	Gender and Nutrition sensitive Agriculture	• Concept of Gender and Nutrition sensitive Agriculture • Role of Extension agents/ worker to disseminate Gender and Nutrition sensitive Agriculture • Extension integration of gender and nutrition
		Lunch & Pray	
	2:00- 3:00 pm	Nutrition re-introduce Basics on Food and Nutrition	• Food and Nutrients • Essential nutrients for the body with Sources & deficiency • The three different food groups that contribute to a balanced diet • Malnutrition

	3.00-3.15 pm	**Tea Break**	
	3.15-4.15 pm	Special requirement for Infant and Young Child Feeding (IYCF)	**Breastfeeding** ● Importance of Breastfeeding ● How to breastfeed **Complementary feeding** ● Why are complementary foods important ● Recommended complementary feeding practices with Feeding frequency ● Risks to starting complementary foods too early or too late
	4.15-5.00 pm	Nutrition care for adolescent girls, pregnant and lactating women	● Why adolescents require more food ● Important foods in the diet of an adolescent. Special nutritional concerns during adolescence ● Consequences of chronic energy deficiency among pregnant woman ● Nutritional needs during pregnancy ● Antenatal care ● Nutritional requirements during lactation ● Postnatal Care
	5.00-5.10 pm	Participant's feed back	● Sharing feelings with given sticker
2nd Day	9:00-9:30 am	Recap of 1st day	
	9:30-10:30 am	Safe food Production to ensure nutrition	● Why safe food ● Problems relating to produce ● quality and safe food ● Challenges for safe food ● Food safety laws and Government initiatives
	10.30-10.50 am	Tea Break	
	10:55-11:55 am	Safe food Production	● Pathways of safe food production
	12.00-01.00pm	Home food safety & food preparation techniques	● Food preparation techniques for minimizing nutrient losses ● Household processing and preservation ● Store food safety ● Using food additive and preservatives
		Lunch & Pray	

	2:00- 3:00 pm	Food handling and Hygiene	• Hygienic handling of vegetables and fruits • Personal & Household Hygiene
	3.00-3.15 pm	Tea Break	
	3.15-4.15 pm	Family nutrition by homestead farming and rooftop gardening	• Improving nutrition through integrated homestead farming • Space utilization for homestead far • Planning for year round Family Nutrition • Roof top gardening for Urban Horticulture
	4.15-5.00	Gender sensitization to ensure nutrition	• Working together to create communities • Gender sensitization for family food distribution
	5.10-5.20 pm	Participant's fee back	• Sharing feelings with given sticker
3rd day	9:30-10:00 am	Recap of 2nd day	
	10:00- 11:00 am	Communication behavior	• Concepts of BCC and role of BCC in Gender and Nutrition • Elements of communication • Steps of communication • Skills for effective communication and role play
	11.00-11.20 am	Tea Break	
	11:15- 12:15 am	Technology use (ICT, social media)	• Knowledge sharing with ICT • Cyber Extension: Role of Internet, Web portals & Social media for extension • m-Extension: Use of Mobile Phones & Apps in providing extension services
	12.15-01.15pm	Translate knowledge into action	• Planning & step forward (group work)
		Lunch & Pray	
	2:15- 3:15 pm	Translate knowledge into action	• Group work presentation
	3.15-4.00 pm	Evaluation	• Post evaluation & Training evaluation
	4.00-4.15 pm	Tea Break	
	4.20-4.50 pm	Closing & Certificate distribution	
	4.50-5.00 pm	Participant's feedback	• Sharing feelings with given sticker

Knowledge Appraisal of the Participants of Gender and Nutrition Sensitive Agriculture

SL No	Topics	No of Farmers		
		Good	Moderate	Not know
Gender Concept				
1	Can tell about Gender			
2	Can tell about the causes of discrimination between man and women			
3	Can tell about the difference between equity and equality			
Food and Nutrition				
4	Can tell about what is Food and what is Nutrition			
5	Can tell about importance of nutritious food			
6	Can tell about different activities of different food in our body			
7	Can tell about what is balance food and how we can make our food balance			
Essential nutrients : Iodine, Iron, Vitamin-A and Zinc				
6	Can tell about the deficiency symptom of Iodine and Iron and also can tell the sources of Iodine and Iron.			
7	Can tell about the deficiency symptom of Vitamin-A and also can tell the sources of Vitamin-A			
8	Can tell about the deficiency symptom of Zinc and also can tell the sources of Zinc.			
9	Can tell the name of food which contain required amount of Iodine, Iron, Vitamin-A and Zinc			
Breastfeeding for new born baby				
11	Can tell the meaning of only breastfeeding			

12	Can tell the about Importance of breastfeeding			
13	Can tell about how to breastfeed correct way			
Additional and Complementary feeding				
14	Can tell about additional and complementary feeding and its importance			
15	Can tell about the reason of and solution for infant feeding			
Nutrition care for adolescent girls, pregnant and lactating women				
17	Can tell about nutritional care of adolescent girl			
18	Can tell about nutritional care of pregnant mother			
19	Can tell about nutritional care of lactating mother			
Safe food preparation to ensure nutrition				
20	Can tell about importance of safe food and risks of safe food preparation			
21	Can tell about safe food preparation techniques for minimizing nutrient losses			
22	Can tell about good agricultural practices			
23	Can tell about preventive measures for safe food			
Food handling and Hygiene				
24	Can tell about hygienic handling of vegetables and fruits			
25	Can tell about Personal & Household Hygiene			
Family nutrition by homestead farming				
27	Can tell about Improving nutrition through integrated homestead farming			

28	Can tell about Space utilization for homestead farming			
29	Can tell about Planning for year round Family Nutrition			
Importance of gender sensitization to ensure nutrition				
30	Can tell about importance of working together to create communities			
31	Can tell about gender sensitization for family food distribution			

Annex 1.2: List of Participants on the Market and Value Chain Development

Sl.No	Name	Designation	Organization
01	MahbubaMoonmoon	ADD, Horticulture wing	DAE-5
02	Md. Abdul Malek	UAO(LR),Khamarbari, Dhaka	DAE
03	Tohomina khatun	AEO, Dhamrai, Dhaka	DAE
04	Mst. Moka Shefa	AEO, Savar, Dhaka	DAE
05	Md.Tipu Sultan Sapan	UAO,DAE	DAE
06	Dr. A.N.M Golam Mohiuddin	Deputy Director, NATP-2,DLS Component	DLS-3
07	Dr. Md. Abdul Kader	AD, NATP-2,DLS Component	DLS
08	Dr. Md.Mustafa Ashraf	AD, NATP-2,DLS Component	DLS
09	Md. Imran Bulbul Siddiquee	Extension Officer, Savar, DoF	DoF-1
10	Md. ShamsulAlam	AGM,BASA	BASA-2
11	Mst.Msauma Aakter Panna	AGM(Project),BASA	BASA
12	Md. SumonTalukder	AVCF,SSS	SSS-2
13	Prodeep kumarSarker	PM,SSS	SSS

14	Md. NobeAlam	Program Officer, SUS, Savar	SUS-2
15	Md. Aminul Islam	Credit Coordinator	SUS
16	Md. Mutashim Billah	SPO, Oxfam	Oxfam-1
17	Md. Ashraf Hossain	PO(Development),SDI	SDI-3
18	S.M Aulad Hossain	VCDF&TC,SDI	SDI
19	Md. Kamruzzaman	AD(ops),SDI	SDI
20	Md.Julfiker Moin	PhD Fellow, SAU	SAU-1
21	SK.Md. Nur-e-Alam	OS,SAAS	SAAS-1

Schedule of Training Program on the Market and Value Chain Development

Day	Time	Title	Contents
1st Day	9:00-9:30 am	• **Registration**	
	9:30-10:30 am	Inaugural session	• Introduction to The Course, Pre Test
	10.30-10.50am	• **Tea Break**	
	10:55-11:55 am	Market	• Concept of market, types of market, characteristic**s** of efficient and inefficient market
	12.00-01.00pm	The market actors	• Concept of market actors, roles of market actors, input suppliers, output buyers and service providers
		• **Lunch & Pray**	
	2:00- 3:00 pm	Market system	• Concept of marketing system • Factors of marketing system • Composition of marketing system
	3.00-3.15 pm	• **Tea Break**	

	3.15-5.00 pm	The market system development & use of ICT in marketing	• The market system development • Advantage and disadvantage of market system development approach • M4P approach • Conventional approach Vs M4P approach • Use of ICT in marketing
	5.00-5.10 pm	Participant's feed back	• Sharing feelings with given sticker
2nd Day	9:00-9:30 am	• **Recap of 1st day**	
	9:30-10:30 am	What is value chain? What is Value chain development?	• Definition of VC • Diagrammatic presentation of VC • Implication of VC development • Analysis of sector and sub-sector
	10.30-10.50 am	• **Tea Break**	
	10:55-11:55 am	Value chain analysis	• Concept of VC analysis • Example of value chain • Vegetable /Dairy VC analysis
	12.00-01.00pm	Triggers of Value Chain	• Factors affecting VC • Details discussion on different factor of VC
		• **Lunch & Pray**	
	2:00- 3:00 pm	Market map	· Concept on market map · Diagrammatic presentation of market map. · Component wise detail discussion on market map.
	3.00-3.15 pm	• **Tea Break**	
	3.15-4.15 pm	Market map	• Concept on market map • Diagrammatic presentation of market map. • Component wise detail discussion on market map.
	4.15-5.00 pm	Market map	• Concept on market map • Diagrammatic presentation of market map. • Component wise detail discussion on market map.

	5.10-5.20 pm	Participant's feedback	• Sharing feelings with given sticker
3rd day	9:30-10:00 am	• **Recap of 2nd day**	
	10:00-11:00 am	Market map exercise	• Market map exercise (Mapping market relationship and Mapping business services)
	11.00-11.20 am	• **Tea Break**	
	11:15-01:15 pm	Market constraints analysis	• Market constraints analysis • Make a list of constraints, identifying underlying causes of constraints andsolution of the constraints
		• **Lunch & Pray**	
	2:15- 3:15 pm	Potential partner identifying matrix	• Potential partner identifying matrix • Practical example of potential value chains and exercise
	3.15-4.00 pm	Evaluation	• Post evaluation & Training evaluation
	4.00-4.15 pm	Tea Break	
	4.20-4.50 pm	• Closing & Certificate distribution	
	4.50-5.00 pm	Participant's feedback	• Sharing feelings with given sticker

Knowledge Appraisal of the Participants of the Market and Value Chain Development Training

SL No	Topics	No of Farmers		
		Good	Moderate	Not know
Market				

1	Can tell about what is market			
2	Can tell about the types of market ,and characteristics of efficient and inefficient market			
The market actors				
3	Can tell about market actors and roles of market actors,			
4	Can tell about input suppliers, output buyers			
5	Can tell who are the service providers			
Market system and market system development				
6	Can tell about Concept of marketing system			
7	Can tell about Factors and Composition of marketing system			
8	Can tell about advantage and disadvantage of market system development approach			
9	Can tell the measures for market management development			
10	Can tell about the M4P approach of market management			
Value chain, Value chain development and Value chain analysis				
11	Can tell the Definition of VC and Implication of VC development			
12	Can tell the Concept of VC analysis and steps of VC analysis			
13	Can tell about the factors of VC analysis			
Marketing map				
14	Can tell the Concept on marketing map and why it is needed			
15	Can tell about Component of marketing map.			
16	Can practice marketing map.			
Market constraints analysis				
17	Can tell about market constraints analysis			

18	Can tell about listing market constraints			
19	Can tell about identifying underlying causes of market constraints			
Potential partner identification				
20	Can tell about Potential partner identifying matrix			

Annex Two: List of Tools Used for Primary Data Collection

A 2.1 Questionnaire for AAS Providers (NGOs and Public actors)

1. What were the issues covered in the capacity building training (TOT)?
    a. What were the issues you learnt from the training?
2. What other capacity building support did you get from BAEN/ SAAS project?
    a. How helpful those supports have been in providing better services? Please explain.
3. Are there any issues included in training module which is completely new for you?
4. Do you think, after getting training from the project your service delivery mechanism been changed positively?
    a. If yes, can you please explain, how it's happened?
5. How do transferring your knowledge to stallholders and producer group organization that you obtained from training?
6. Does AAS actors using tools (knowledge product, e.g. AAS related manuals, good practiced notes, policy guideline, videos) and opportunities provided by AAS, CF and networks to improve their services? (In-2)
    a. If yes, please briefly explain tools they are using and how it's contributing to improve their services?
8. Do you think, organizational capacity areas (general network, organizational and institutional functioning, KM, ICT use, professionalization of AAS, advocacy) being improved where AAS platforms performs? (ind-3)
    a. If yes, please explain how.

Performance level	Insert tick
Hidden strength	
Under-developed	

Overestimated	
Performing	

9. How do you (AAS actors) recognize the added-value of AAS platforms (Country Fora, AESA, PIRAS, APIRAS)? (ind-4)
    a. How do you think SAAS project/ BAEN platform makes sure coordination among the AAS actors?

10. Who do you think have been the biggest impact group from your extension works? Can you please explain impact of your extension works/ efforts regarding the following fields? –
    a. Adaptation of climate change
    b. Gender and Nutrition Sensitive Agriculture
    c. Market and Value Chain Development
    d. ICT for Monitoring
    e. Knowledge Management
    f. Curricula Review

11. How would you recognize SAAS project's contribution on the sustainable AAS development in the extension?
    a. Do you have any visible example (KM platform etc.)?

12. Would you explain number of KM product the SAAS has developed? (ind-5)
    a. What are they? Can provide some hard or soft copy of them?
    b. Among the developed knowledge product how many of them used & shared via knowledge management platform by AAS providers with assistance of SAAS?

13. Do you know about KM Strategic and operational documents that in place? (ind-6)

    a. Number of AAS actors Knowledge Management (KM) needs assessed
    b. Number of regional Knowledge Management Strategy (MS) is drafted
    c. Number of regional Knowledge management strategy cascaded at regional and national level
    d. Number of state of the art assessment done
    e. Among them number of implementation refined
    f. Number of priority areas of the KMs implemented including a functional online platform

14. Is there any policy dialogue, recommendations made by the SAAS on extension work, good practice, coordination mechanism on AAS? (ind-7)

    a. Number of national AAS policies analyzed?
    b. Among them number policies drafted and presented for stakeholder consultation
    c. Number of policy presented for legislation
    d. Number of policy passed/approved
    e. Among them how many of them implementation begun

15. Number of policy dialogues organized with support of SAAS? (ind-9)

16. Number of AAS policy advocacy champions identified and involved by SAAS (Ind-10)

18. What have been the gaps/ weaknesses of the TOTs, activities and initiatives by SAAS/ BAEN platform that you have observed?

a. What else could be done better? (probe- training hour; training content; curricula review process; policy dialogues; networking activities; etc.)

19. Do you think the initiatives or the outcome of the BAEN/ AAS platform would be sustainable?

a. Why do you think so? Please explain yourself.

A 2.2 FGD Checklist for Smallholder Farmers

1. What are the major sources of agricultural advisory services in this area?
2. Are the services accessible (timeliness, inclusion and scale) to you?
    a. How do you access those services?
    b. Tell me your experience regarding accessing the services (poor, average, good).
    c. What are the problems you face regarding accessing those services?

3. Do you think, the extension actors (those who received capacity building supports from SAAS platform) have been offering quality services to you?

a. If yes, then how? How is it different that before (probe – information timeliness, accessibility, availability and quality)

4. Have you observed any changes in your farming after getting agricultural advisory services from mentioned stakeholders? (probe – production amount/ yield, product quality, product price, sales, income)

5. What are the other benefits you experienced due to advisory services? (probe - changes in livelihood, children's education, food security, investment in IGAs, savings, health, women empowerment, etc.)

6. What are the gaps in present extension services? What type of extension services you expect but do not receive yet? Please explain?

7. Do you think current advisory services with continue after project ended?

8. Do you have any recommendations to improve project achievement/results?

Annex three:

Annex 3.1: List of Recommendations Made by the Policy Dialogue on Strengthening Coordinated AAS

1. National Agricultural Extension System (NAES) should be formed as the Apex body of the Agricultural Advisory Service Providers comprised of different relevant stakeholders including public and private extension organizations (crop, livestock and fisheries), research institutions, universities, NGOs and so on to ensure coordinated agricultural advisory services
2. Coordination of agricultural advisory service should be carried out at region, district and upazila level by forming Regional Coordination Committee, District Coordination Committee and Upazila Coordination Committee by involving actors from public & private extension, research and educational organizations, NGOs and producer groups
3. Strength of the Extension and Advisory Service (EAS) providing organizations should be increased by increasing the number of manpower, capacity of the manpower and physical facilities of the organizations
4. Holistic consultation (One Stop Service including crop, livestock and fisheries) should be provided to the farmers by establishing Agriculture Advisory Centers (AAC) at village/ward level to increase the capability for addressing adverse environment
5. New funding sources, donor support should be found out for increasing the capacity of extension service providers and to increase the farm production
6. Front level extension workers of livestock and fisheries sectors should be increased. Capacity of the Sub Assistant Officers (SAAOs) of the Department of Agricultural Extension (DAE) should be increased by providing livestock and fisheries knowledge until increasing the number of front level extension workers of the Department of Livestock Service (DLS) and Department of Fisheries (DOF) for providing holistic consultation to the farmers
7. As a part of Access to Information (A2I) activities, e-Extension service should be increased by establishing e-information center at the AAC in each world of the whole country
8. A national “Agricultural Knowledge Repository” or “Agricultural Knowledge Hub” should be developed and promoted containing good agricultural approaches, technological innovations, knowledge-based solutions with valid information. Extension workers should be equipped with advanced ICT-based knowledge and products to promote prompt and effective agricultural advisory service. Agricultural Apps should be updated regularly by valid information. National policy should be developed for using e-extension for e-agriculture
9. Equal opportunity should be provided to the female farmers for their farming and related activities
10. Knowledge-based agricultural advisory service should be promoted rather than input-based agricultural advisory service. Capitalized local knowledge should be integrated with improved (national and international) knowledge. Extension should be focused on ‘pay-to-service’ approach to promote and sustain agricultural services

11. All levels of public and private agricultural advisory service providers including input dealers should be provided with improved knowledge-based training based on skill-gap analysis to upgrade their skills in providing quality agricultural advisory services.
12. Universities should develop and offer a demand-driven curriculum to address the contemporary farm-related issues.
13. A crisis-response team should be formed comprising of multi-sectoral experts (e.g. scientists, academic staff, extension worker) to address the unique risk/disaster/epidemic issues.
14. Agricultural advisory service should promote and ensure 'compliance-based farming' practices that might ensure the profitable production system.
15. National and local level agricultural advisory tools and methods applying by different organizations should be harmonized and integrated to ensure clients' satisfaction.
16. Good agricultural practices/approaches should be collected, corrected, documented and disseminated.
17. Agricultural Universities and research organizations should actively participate in advisory services and disseminating agricultural innovations to the clienteles with coordination of extension organizations like DAE, DLS, DOF, NGOs, private organizations, etc.
18. All prior and existing agricultural advisory approaches should be reviewed, analyzed and reformed according to the current farming needs.
19. Strong linkage should be developed by involving Extension-Research-Education-Farmer-Market related personnel to provide better services at the right time to the right person to increase production, market information, weather prediction, agricultural credit, farm management, conservation agriculture, diversification & branding, create agricultural entrepreneurs, agricultural business, use of ICT, etc.
20. Participation of Extension Agent, Researchers, Academicians, and Farmers should be ensured in Research Institution Coordination Committee (RICC), Planning Meeting of Research Institutes, Extension-Research Workshop, Agricultural Extension Planning Workshop, Innovation Dissemination Workshop/Training, etc.
21. On-Farm Research and Multi Location Test should be conducted by involving Extension Agents, Researchers, academicians and Farmers.
22. Extension, Research organizations and universities will act together to solve the problems of Farmers' at Field level.
23. Appreciation should be provided to the successful organizations, projects, farmers, and extension personnel for good EAS
24. Studies to be carried out to find the best sustainable model for strengthening coordination and accountability of mainstream actors. More adaptive research should be conducted to find out the appropriate extension approaches.
25. Monitoring, Evaluation, Accountability and Learning (MEAL) system must be ensured in Agricultural Advisory Service (AAS). The Society for Bangladesh Agricultural Extension Network (BAEN) can take this responsibility through NAES.

Annex 3.2: List of Recommendations Made by the Policy Dialogue on Improvement of agricultural Extension and Information System Curricula of Universities and Training Modules of Extension Service Providers of Bangladesh

1. A new course should be introduced in the title of “Agricultural information system (AIS)” within the total existing credit hours in all faculties of Agricultural Universities.
2. Internship program should be included for B.Sc. Ag (Hons.) and B.Sc. Fisheries (Hons.) Program
3. All B.Sc. Ag (Hons.) degree offering universities should follow equal course credit for extension education.
4. Course credit under agricultural extension should be similar for all universities who are offering B.Sc. in Fisheries (Hons.) degree.
5. Pharmacology subject need to include making extension service more effective that will help disease prevention and protection
6. Field visit must include to strengthening two way channel of extension service
7. UGC should take initiatives to implement the recommendations.
8. A new course should be introduced in the title of “Fisheries information system (FIS)” for all universities who are offering B.Sc. in Fisheries (Hons.) degree.
9. The credit hour of the Agricultural Extension Education course should be increased with practical.
10. A new course should be included in the title of ‘Livestock Information System (LIS)’ for all universities who are offering B.Sc. in DVM/Vet.Sci & A.H (Hons.) degree.
11. Non Agricultural University like DU, NSTU should offer more courses on Extension related subjects.
12. There need to establish mechanism to strengthen linkage among the education, research and extension systems
13. BAEN should take initiatives to strengthen the extension education of different universities
14. Most of the Universities there have 13 to 14 credits under agricultural extension while only 2 to 3 credits remain in some Universities which are inconsistent. There have uniformity about credit hour among the universities and the universities where credit hours are few there should take initiative to increase credit hours.
15. The content of practical course should be checked against the credit hour.
16. There should research report submission system in the undergraduate level.
17. The credit hour for theory course should be reduced from existing but for practical course it should be increased. The credit hour for theory and practical should be equal.
18. There should have initiative to develop agricultural extension manual.
19. Unified course curricula should be incorporated with 80% common and 20% regional based both theory and practical.
20. There need to introduce ICT related courses.
21. The course title of extension education should be tag with faculty name like the name for Fisheries should be Fisheries Extension and for Livestock should be Livestock Extension.
22. Optional courses need to be incorporated.
23. Practical need-based research on Extension Methodologies and approaches need to be enhanced.
24. In case of Fisheries and Livestock, a certain portion of high officials should have higher education in Extension.
25. The duration and topics of ToT for teaching method module under NATA should be rearranged.

26. The training module namely ToT for eco-friendly plant protection technology under NATA should be hands on and participatory approach. Moreover, there need to increase duration and refresh training content.
27. The training provided by Integrated Farm Management Component (IFMC), DAE Integrated Farm Management Component (IFMC), DAE need to increase duration and content should be refreshed on need basis.
28. Training on modern production technology of crops provided by NATP 2, DAE should be field based.
29. Training provided by DLS and DoF namely ToT for MT and Basic training should be more practical.
30. BARD should arrange more practical and field practice base work while giving training on HYV vegetable seed production
31. The volume of content for the training program namely ToT on production technology of different crops provided by BARC should be reduced and rearranged.