Islamic Republic of Pakistan
National Agriculture Research Centre
Directorate of Agriculture Extension, Khyber Pakhtunkhwa Province

Islamic Republic of Pakistan

The Project for Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province

Project Completion Report

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Japan International Cooperation Agency

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Islamic Republic of Pakistan
The Project for Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province

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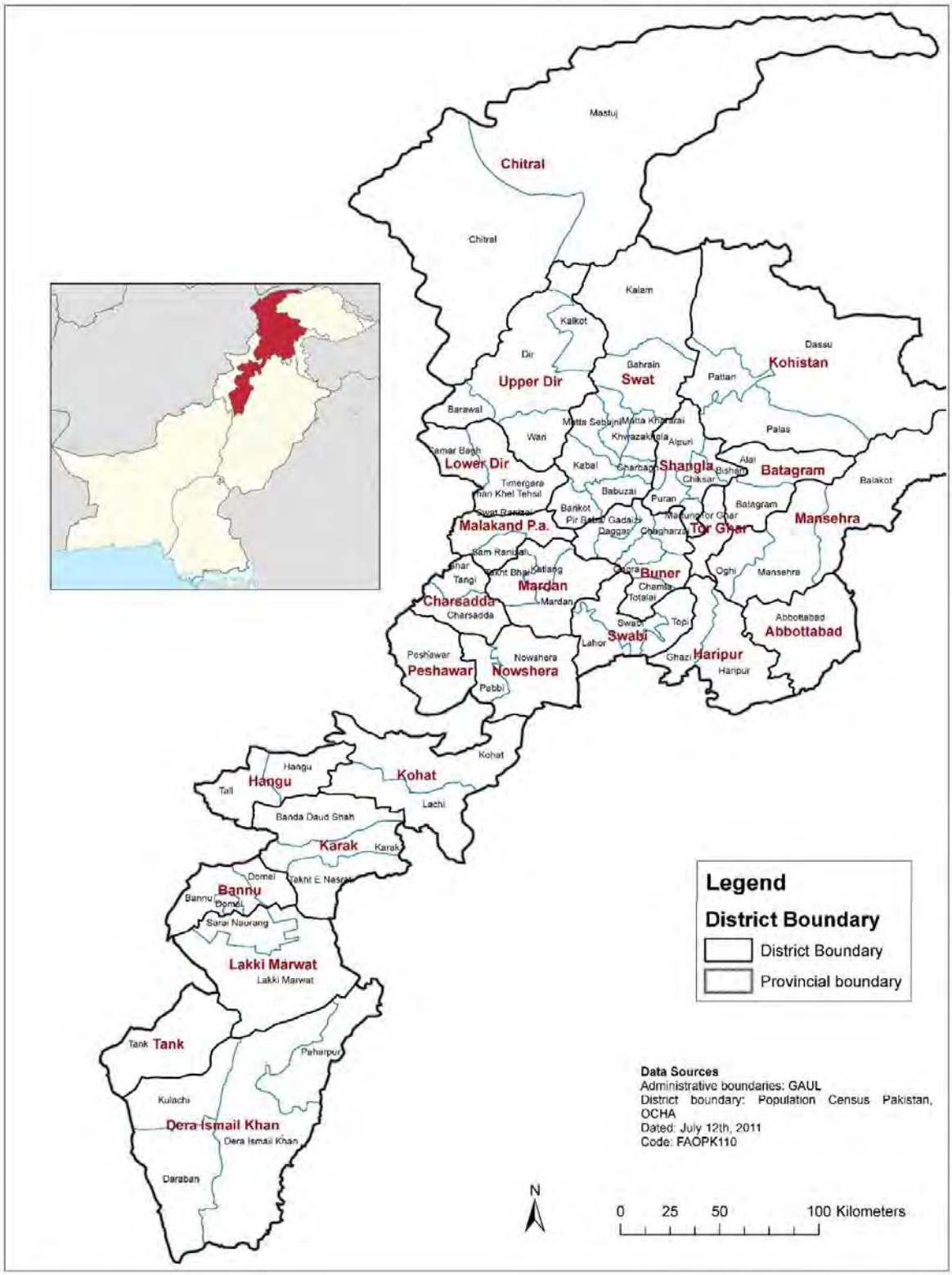
Capital: Islamabad
Target Province: Khyber Pakhtunkhwa Province



Abbreviation

AO	Agriculture Officer
API	Agriculture Poly-technique Institute
ATI	Agriculture Training Institute
CUDBAS	Curriculum Development Based on Vocational Ability Structure
DDA	District Director of Agriculture
DoAE	Directorate of Agriculture Extension
FA	Field Assistant
FAO	Food and Agriculture Organization of the United Nations
FATA	Federally Administered Tribal Areas
FUWS	Follow-Up Workshop
FW	Field Work
GB	Gilgit-Baltistan (Administrative Territory of Pakistan)
IDP	Internally Displaced People
JCC	Joint Coordination Committee
JICA	Japan International Cooperation Agency
KP	Khyber Pakhtunkhwa
MFSC	Model Farm Service Centre
NARC	National Agriculture Research Centre
PARC	Pakistan Agriculture Research Council
PDM	Project Design Matrix
R/D	Record of Discussions
SMS	Subject Matter Specialist

Chapter 1 Outline of the Project

1-1. Background of the Project

Khyber Pakhtunkhwa (hereinafter referred to as "KP") province is located in the mountainous area of north-western Pakistan, which was rather left behind from development compared to other provinces. Agriculture is the main industry of the KP Province, but agriculture production and infrastructures such as roads, bridges and water supply, have been largely destroyed, because of military operations against armed groups in 2009, and severe damages brought by the floods in 2010 and 2011. In addition, a large number of Internally Displaced People (IDP) have come out of the continuous military operations in Federally Administered Tribal Areas (FATA), which has brought social instability and generated difficult situations for economic reconstruction of the area.

More than 75% of the population in KP Province is engaged in agriculture in any kind of form, but income from agriculture accounts only 15% of average monthly household income, which implies that agriculture does not effectively contribute to the creation of income. Therefore, it is urgently needed to improve agricultural production technology and to develop markets for agricultural products, so as to improve people's livelihoods in the area.

Directorate of Agriculture Extension (DoAE) of the KP Province has been conducting a two-year training course for agriculture extension workers at Agriculture Training Institute (ATI) in Peshawar. And the graduated extension workers (Field assistants: FAs) are implementing extension activities for farmers under the supervision of Agriculture Officers (AOs) of each district. AOs are supposed to supervise and provide guidance to the FAs, as well as to report FA's activities to District Director of Agriculture (DDA) Extension. However, systematic in-service training for agriculture extension workers have not been implemented in ATI, which makes it difficult for the extension activities to be effective enough to disseminate latest techniques and information related to agricultural technology to farmers.

To address this situation, the Government of Pakistan requested to the Government of Japan to implement the Project for "Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province" (hereinafter "the Project") in 2012. The Project is aiming to promote extension activities conducted by extension workers, through training of both AOs and FAs. Consequently, the Project focuses on the improvement of farmers' agriculture production by disseminating appropriate knowledge and techniques of agriculture to farmers through agriculture extension workers.

Training courses were conducted under the Project at National Agricultural Research Centre (NARC), Islamabad, targeting both AOs and FAs of the KP Province with the full cooperation of Agriculture Poly-technique Institute (API) of NARC.

1-2. Objectives of the Project

The Project is implemented based on the Record of Discussion (R/D) which was agreed on 3rd September 2014, signed by Ministry of Economic Affairs and Statistics, Pakistan Agriculture Research Council (PARC), NARC, KP-DoAE, and Japan International Cooperation Agency (JICA). Overall goal of the Project is "the appropriate knowledge and skills for agricultural productivity are extended to farmers". The purpose of the

Project and the expected outputs are as follows.

【Project Purpose】
Agricultural Knowledge and Extension Skills of Extension Service Staff in KP are Improved
【Output】
Output 1 Demand-based Training Curricula for Capacity Development of Agriculture Extension Staff, i.e. Agricultural Officers (AOs) and Field Assistants (FAs), are Developed
Output 2 AOs Obtain Necessary Skills to Guide, Supervise and Monitor the Extension Activities through Training
Output 3 FAs Obtain Necessary Knowledge and Skills to Carry Out Extension Service Activities
Output 4 Field Implementation of Extension Activities and Monitoring in KP are Strengthened

1-3. Target Area of the Project

The Project covers the whole area of KP Province which is around 74,500 km^2, locating north western part of Pakistan, bordering with Afghanistan. The KP Province consists of seven divisions, which are further divided into twenty-five districts. Table 1-1 shows the divisions and districts of the KP Province to be covered by the Project. AOs, Subject Matter Specialist (SMS), and FAs of the KP Province are targeted under this Project.

Table 1-1: Target Division and Target Districts in KP Province

Division	District						
Hazara	Abbottabad	Battagram	Haripur	Kohistan	Mansehra	Tor Ghar	
Malakand	Buner	Chitral	Dir Lower	Dir Upper	Malakand	Shangla	Swat
Peshawar	Charsadda	Nowshera	Peshawar				
Mardan	Mardan	Swabi					
Kohat	Hangu	Karak	Kohat				
Bannu	Bannu	Lakki Marwat					
D. I. Khan	D.I. Khan	Tank					

1-4. Counterpart Organization

Counterpart organizations of the Project are NARC in Islamabad and KP-DoAE. NARC was established in 1984 and has been conducting various kinds of agricultural researches. NARC has different facilities such as experimental farm, laboratory, green house, gene bank, library, auditorium, store house, hostel, and audio-visual room. API is a training institute of NARC, which implements different training courses in various disciplines of agriculture in collaboration with the other institutes in NARC. The training activities of the Project are carried out by API and NARC, and NARC researchers are the resource persons of the training courses.

On the other hand, KP-DoA is responsible in supporting small-scale farmers, and providing agricultural inputs including seeds, fertilizers, and agricultural chemicals to farmers of the area. The extension activities are conducted mainly by FAs who are at the field level with the supervision of AO in charge.

1-5. Revision from the Initial Plan

■Number of Participants targeted for the Training conducted by the Project

In the initial plan proposed by the JICA Expert Team before the Project started in January 2015, it was proposed that 100 of AOs and 125 of FAs would be trained under the Project to ensure the effectiveness of the

training to enhance the extension activities in KP Province. However, there were series of discussions with the counterpart organizations after the Project started and the number of training participants increased to 100 of AOs and 250 of FAs, as these target numbers were stipulated in PC-1, which was found to be difficult to change.

■Training Period and Schedule

In the initial plan, it was proposed to hold integrated training cycle between i) AO training, ii) series of FA trainings per group, iii) 2 field works conducted by the FA per group, and iv) monitoring/ evaluation of the field activities by AOs, as to strengthen and enhance extension activities (Figure 1-1).

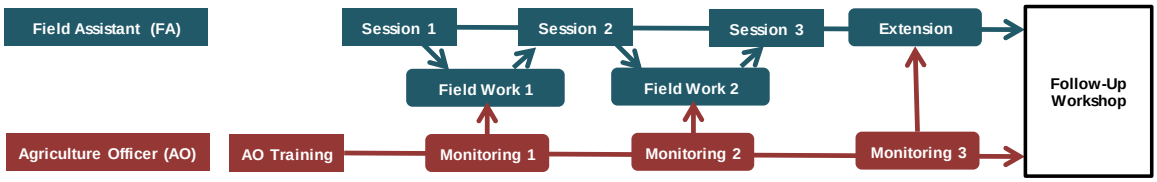


Figure 1-1: Flow of Training (Initial Idea by the Project Team before the Project Started)

However, prior to the Project commencement in January 2015, Curriculum Development Committee was established by API, KP-DoAE, and JICA Pakistan Office to develop training curriculum for AOs and FAs in KP Province. The Committee prepared 3 week curriculum for AOs and 5 week curriculum for FAs, which included various topics based on the request by KP-DoAE.

From January 2015, there were thorough discussions with Curriculum Development Committee and counterpart organizations to compromise different ideas with respective contents of PC-1 and the characteristics of training structure proposed by the Project. Finally, the followings were agreed at the 1st Joint Coordination Committee (JCC) meeting on March 17, 2015;

- Training for AO/SMS: 3 weeks training session per group, 25 participants per group, for 4 groups (100 AO/SMS in total)
- Training for FA: 2 weeks training per session, 2 sessions per group, 25 participants per group, for 10 groups (250 participants in total)

Based on the amendment, number of days for the training and training schedule were also revised along with training period and the number of training sessions. In addition, dispatch schedule of Japanese experts was also modified, including assignment duration and timing, and the number of trip.

■Assignment of a New Japanese Expert

FAs who participate the training are supposed to carry out extension activities in their area of jurisdiction, by utilizing the skills and knowledge acquired through the training sessions under the Project. The importance to support and advice the extension activities conducted by FAs increased along with the progress of the Project activities. Additional Japanese expert joined from October 2015 in order to ensure the support and advice on the Field Works, which are the extension activities included in the training.

■Extension of the First Period of the Project

The first period of the Project was from January 2015 to March 2016, and the second period to be from April 2016 to June 2017. Due to the following reasons, the first period was extended until the end of May 2016 and the second period to be from July 2016 to June 2017.

- KP-DoAE started a three-year program to enhance wheat production from autumn of 2015, and AOs and FAs who are the training target of the Project are engaged in the program. Under the program, AOs and FAs will be occupied in October and November for distribution of wheat seeds to the farmers, and in May for wheat harvesting. Though it was originally planned to conduct training during these periods, it became difficult for them to participate in the training sessions.

- In order to avoid unnecessary conflict between the above-mentioned program and the Project activities, it was proposed to conduct FA Group 5 (Session 1) and FA Group 6 (Session 1) from the end of March to April 2016 so as to complete the scheduled trainings within the Project timeframe. Accordingly, the first period of the Project was extended until the end of May 2016, and Japanese experts on Agriculture Extension Training and Project Coordinator/Monitoring were assigned to handle the training sessions till the end of April 2016.

■Training Schedule for AO/SMS and Participants' Number

Though training for AO Group 4 was rescheduled to be conducted in August 2016, it was found out that the training could not be held as there were not sufficient numbers of participants for the training. KP-DoAE was under recruitment process of AOs since early 2016, and was not finalized by August 2016. The training for AO Group 4 was agreed to be postponed till once the recruitment process completed and AO being dispatched to their assigned post, which took until beginning of 2017. There have been 33 newly recruited AOs, and adding those AOs who were still not participated in the training, there were more than 35 participants for the training. Taking into consideration that those newly recruited AOs have graduated Master Degree quite recently, thus are with basic knowledges, but are not that aware of the area-specific characteristics and farmers' modes of cultivation and production techniques, it was agreed to conduct 2 weeks training for AO Group 4 and AO Group 5, instead of 3 weeks training. The training curriculum was restructured to fit in 2 weeks for AO Group 4 and Group 5, which were conducted from the end of February to March 2017 after FA Group 10 (Session 2).

AO training included monitoring and supervision methods for Field Works, namely Field Work 1 (FW1), Field Work 2 (FW2), and Action Plan Activities, conducted by FAs. As the Field Work 2 which would be conducted by FA Group 9 and FA Group 10 would only be conducted till the end of March 2017, there were limited opportunities for those participants to actually accompany the FW2 to monitor and supervise the activities at the spot. Thus, the Project Session was re-organized taking into account that it would be difficult to obtain the same impacts as in the cases of previous AO groups.

Chapter 2 Project Activities

2-1. Activities for Output 1: Demand-based Training Curricula for Capacity Development of Agriculture Extension Staff (Agriculture Officers and Field Assistants) are Developed

As mentioned in Chapter 1, Curriculum Development Committee was established by API, KP-DoAE, and JICA Pakistan Office to develop training curriculum for AOs and FAs, and Activity 1-1 upto Activity 1-5 below were conducted prior to the Project commencement in January 2015. The Committee prepared 3 week curriculum for AOs and 5 week curriculum for FAs, including various topics covering wide range of technical fields which were requested by KP-DoAE. Since January 2015, series of discussions with the Committee and counterpart organizations were conducted and training schedule and curriculum were modified in line with the contents of PC-1 and the characteristics of training structure proposed by the Project. Major activities related to the Output 1 were as follows.

Activity 1-1 : Form a Working Group Composed of Trainers of NARC and Directorate of Agriculture Extension in KP to Jointly be in Charge of Curricula Development Customization

The Curriculum Development Committee was established by API, KP-DoAE, and JICA Pakistan Office prior to the Project commencement to develop training curriculum for the Project. Following Table 2-1 presents the members of the Committee.

Table 2-1: Working Group for Training Curriculum Development

Organization	Stakeholder
NARC Researcher	Directors of Different Directorates
API- NARC	Director, Program Leader for Human Resource Development
KP Province DoAE	KP-DoAE Peshawar (Director of Model Farm Service Centre, Director of Plant Protection) Representative of District Director, SMS, and AO
JICA Pakistan Office	Representative (Person in charge of the Project) National Staff in charge of the Project

Activity 1-2: Review and Evaluate Extension Services in KP

JICA Pakistan Office carried out a survey of agriculture sector including the status of extension services in KP Province before the Project started. The survey was conducted by a local consultant company[1], and the results were compiled as "Information Collection for Possible JICA's Assistance for the Agriculture-Sector Development in Pakistan-Afghanistan Boarder Area (January, 2013)". The survey results were utilized to prepare training curriculum for AOs and FAs by the Curriculum Development Committee. The Project has also reviewed the survey outcomes to understand the current situation of agriculture production and extension activities in KP Province, along with interviews to related organizations/personnel of the KP Province. In addition, "Khyber Pakhtunkhwa Agriculture ATLAS 2012" published by FAO was studied to identify the different characteristics of agricultural production as climate conditions and environment in KP

[1] CYNOSURE CONSULTANTS PVT. (LTD)

Province varies from north to south of the Province.

Activity 1-3: Organize Workshop for Inputs from Various Experts
Activity 1-4: Draft Curricula in Accordance with Discussion in the Workshop

The daft training curriculum for AOs and FAs were discussed and prepared by the Curriculum Development Committee before the commencement of the Project. The draft curriculum covered various topics of agriculture, including crop production, fruit and vegetable production, seed production, water management, plant protection, agricultural machinery, post-harvest, and agriculture extension. The draft training program for AOs was for a period of 3 weeks, and that for FAs was for 5 weeks (Table 2-2).

Table 2-2: Curriculum/ Module (Draft as of January 2015)

Module	Content
Module 1	Field Crop Production
Module 2	Horticultural Crop Production
Module 3	Seed & Nursery Production Technologies
Module 4	Water Management
Module 5	Plant Protection
Module 6	Agricultural Mechanization
Module 7	Honeybee Production
Module 8	Value Addition
Module 9	Extension Education & Marketing
Module 10	Others

Activity 1-5: Organize Workshop for Inputs from Extension Staff and Farmers from KP
Activity 1-6: Customize the Draft Curricula for Training Extension Service Staff (AOs and FAs) according to their Respective Roles

As described in Figure 1-1 in the previous chapter, the Project proposed a training which integrate AO/ FA training at NARC, along with series of Field Work by the FAs in the areas under their jurisdiction, as well as monitoring/ evaluation of field activities in order to improve the extension activities. However, the training curriculum for AOs and FAs were already drafted by the Curriculum Development Committee prior to the commencement of the Project, and it was obliged to conduct training of 100 AOs and 250 FAs during the Project period as stipulated in PC-1. KP-DoAE also requested integrated and practical training program for AOs and FAs as they had little opportunities to participate in training as such. The contents and the training duration for a couple of weeks to cover the contents were already agreed before the Project started.

Taking into account that the first training for AO Group 1 had to start by April 2015, the Project organized Curriculum Development Based on Ability Structure (CUDBAS)[2] workshop in February 2015 in order to analyze the knowledge, skills, and attitude required for extension workers, and to examine whether the draft curriculum covers the needs. The workshop participants were from API, NARC, KP-DoAE, and AOs/FAs of KP Province. Result of workshop discussion was compiled as CUDBAS chart which is shown as Appendix

[2] CUDBAS (Curriculum Development Based on Ability Structure) is a method of expediting work of management, human resource and functions in solving problems to ensure smooth work, which was developed in Japan. By applying the methodology, it can be used to describe required knowledge, skills and attitude, for certain target group. Based on the CUDBAS output, training goal for certain target group will be clarified, and training curricula will be organized. CUDBAS is also useful for all concerned parties to have/share the same idea about desirable abilities of target group and possible training goal for them.

6-1. The workshop result revealed knowledge and abilities which are necessary for the extension workers, including plant protection, production of fruits/ vegetables/ cereal crops, fertilization, extension methodology, agricultural machinery, post-harvest technique, and report writing. The result was shared among the participants, and the draft training curriculum was re-examined by reflecting the important knowledge, skills, and abilities for extension workers which were identified through CUDBAS.

Activity 1-7: Review the Draft in the Working Group and Finalize the Curricula for AOs and FAs

The training curriculum was discussed repeatedly among those concerned, particularly on the necessity of including Field Work i.e., extension activities by the participants in respective areas as a part of the training. Another point of discussion was to organize two sessions per a group for FAs so that the participants would come back with the results of their activities in the field and they can clarify and learn on more specific issues and subjects. This arrangement could be useful not just for FAs but also for the researchers in NARC as they would also obtain the first hand information from KP Province. The Project aims to enhance the extension activities in KP Province and one-shot training would not enable for the Project to understand how the participants are utilizing what they gained from the training or to ensure that the extension activities are enhanced. After the discussions, the flow of training cycle was agreed and finalized as Figure 2-1 below, including 3 week AO training, and 2 sessions (2 weeks per session) for FA training along with FA's Field Work after each session. At the end of the training cycle, a follow-up workshop was organized to review and evaluate training/extension activities and to formulate future action plans. The concept of the training under the Project was approved at the 1st JCC meeting in March 2015.

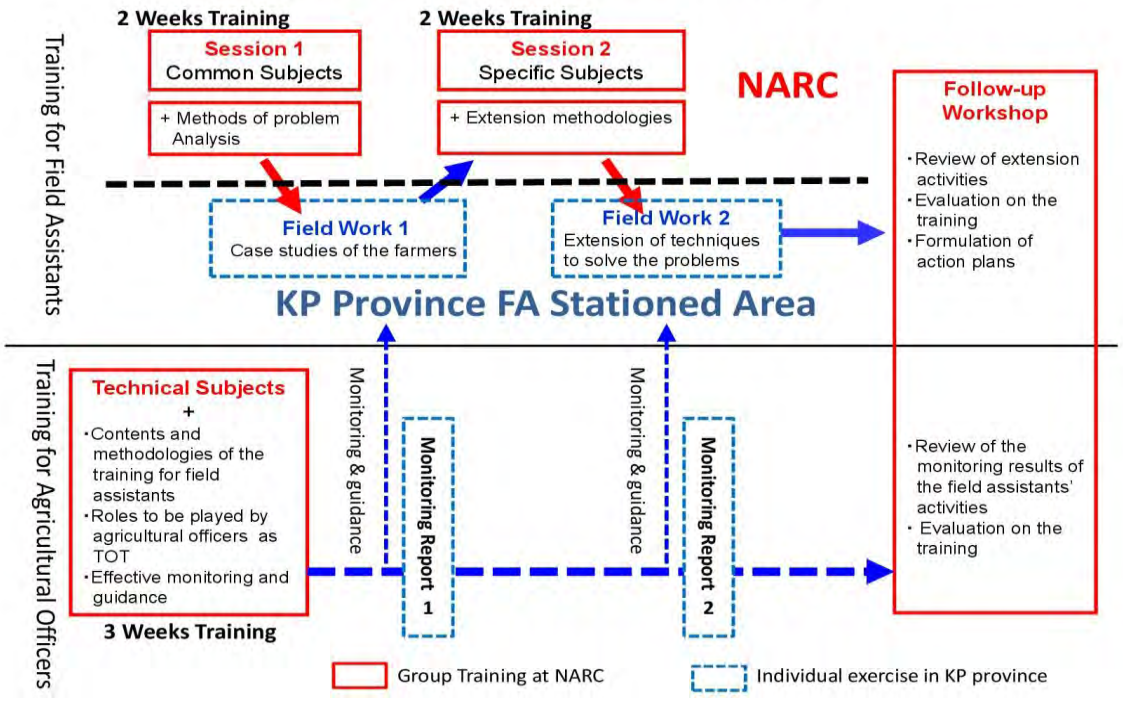


Figure 2-1: Flow of Training

Training curriculum/ module for AO and FA training were finalized and the first AO training in April 2015 and the first FA training in May 2015 were implemented as scheduled. Table 2-3 and Table 2-4 present the training curriculum / module for AOs and FAs as of March 2015.

Table 2-3: Curriculum/ Module for AO Training (as of March 2015)

Module	Content
Module 1	Field Crop Production
Module 2	Horticultural Crop Production
Module 3	Seed & Nursery Production Technologies
Module 4	Water Management
Module 5	Plant Protection
Module 6	Agricultural Mechanization
Module 7	Honeybee Production
Module 8	Value Addition
Module 9	Extension Education & Marketing
Module 10	Others
Others	Project Session: Roles and Responsibilities of AO, Support toward FA' Field Work

Table 2-4: Curriculum/ Module for FA Training (as of March 2015)

Session 1: Basic	
Module	Content
Module 1	Field Crop Production
Module 2	Horticultural Crop Production
Module 3	Vegetable Production
Module 4	Pre/ Post Harvest Management
Module 5	Seed & Nursery Production Technologies
Module 6	Agricultural Mechanization
Others	Project Session: Field Work 1

Session 2: Specific	
Module	Content
Module 1	Specific Issues/ Subject to be tackled in Field based on finding of Field Work 1. Thus, the sessions would depend on Participants' Findings and Interests.
Module 2	
Module 3	
Module 4	
Module 5	
Module 6	
Others	Project Session: Field Work 2

Activity 1-8: Prepare Training Materials and Install Necessary Equipment for Training

■Training Materials

a. Sub-Training Textbook in Urdu (3 types)

Each NARC resource person who would be providing lectures and practices for the training were responsible to produce PowerPoint presentations as training materials. Most of the materials were written in English, which were easy to be understood by AOs and SMSs who were university graduates. However, most of FAs were graduated from Agriculture Training Institute (ATI), and the materials in English were rather difficult for them to follow and understand fully. Although training sessions (lectures and practices) were conducted in Urdu, FA participants requested for the handouts to be in Urdu as they could not utilize the English handouts after the training.

Translating all training materials in Urdu was difficult as there were around 100 sessions in the training, and Urdu software was not widely used. Thus, the resource persons did not prepare their materials in Urdu. In order to overcome these difficulties, the Project has produced subject-wise textbooks on a) cereal crops, b) vegetables crops, and c) fruit crops, and distributed to SMSs, AOs, and FAs of KP Province.

For the session regarding agriculture extension and Field Works to be carried out by FAs which

Japanese experts were in charge of during AO/FA training, necessary presentation materials and documentation formats were prepared by Japanese experts and translated in Urdu, which have been utilized in conducting Field Works by the FAs.

b. Field Guidebook: Identification of Insects and Diseases for Major Crops

A field guidebook for extension workers to identify insects and diseases for major crops was prepared by the Project in collaboration with NARC researchers. The Guidebook was printed in A6 size so that it could be easy to carry to the field and to use at the spot. The Guidebook was also distributed to AOs, SMSs, and FAs.

c. Example of Good Practices of Extension Activities by Trained FAs

The Project has also produced and distributed a booklet in Urdu which introduced 27 cases of good extension activities conducted by FAs after the training, namely during action plan activities, which is expected to serve as future reference for AOs, SMS, and FAs (Appendix 6-3).

■Installation of Training related Equipment at NARC

Training related equipment was procured by JICA Pakistan Office, based on the discussions with API on items and specifications. The Project team provided necessary advice in finalizing the specifications of the equipment. The procured equipment was installed in a Project training room at API, including projector, laptop PC, UPS, movie camera, digital camera, and chairs with desk. In addition, Computer laboratory at API was also equipped with desktop computers, desks and chairs. Inauguration ceremony for the training room and computer laboratory was held on 12th August 2015, with the participation of PARC Chairman and Chief Representative of JICA Pakistan Office. List of the equipment is shown in Appendix 6-2.

■Extension Materials in Urdu

Extension supporting materials, such as posters, brochures, figures and tables, are useful to effectively carry out the extension activities. Before preparing these materials, the Project facilitated discussions with FAs during Session 2 of the FA training in terms of necessary themes of the supporting materials and three important areas were identified, i.e. “cultivation techniques of specific crops”, “identification and control of pests and diseases”, and “weed control”. As it would be difficult to accommodate all the requests, the Project produced following extension materials by taking into account the needs.

Table 2-5: Extension Materials Produced by Project in Urdu

Brochure/ Booklet	Insects/ Diseases Posters	Video
a. Wheat (3 types)[3]: Cultivation Techniques in General, Weed Control, Harvesting/Post Harvesting b. Fruit Production[4] c. Compost d. Vertebrate Pest Control e. Insects/ Diseases Control	a. Wheat : Disease b. Wheat : Insect c. Maize : Insect & Disease d. Potato : Disease e. Potato : Insect f. Onion : Insect & Disease g. Tomato : Insect & Disease h. Peach : Insect & Disease i. Citrus : Insect & Disease j. Apple : Insect & Disease	a. Fruit Fly Control b. Pruning c. Grafting

■Others

a. Project Newsletter

Project Newsletter was published in order to encourage understanding of Project activities among related personnel and was distributed to PARC, NARC, KP-DoAE, JICA Pakistan Office, and others.

Table 2-6: Project Newsletter

Vol. No.	Contents	Vol. No.	Contents
Vol.1	Introduction to the Project	Vol.5	Findings from Follow-Up Workshop
Vol.2	Outline of AO Training and FA Training	Vol.6	Sub-textbooks and Extension Materials produced by the Project
Vol.3	What is Field Work 1 which FAs conduct at their respective Areas during Training?	Vol.7	Action Plan Activities (Extension Activities) which FA conducts after the "Training"
Vol.4	What is Field Work 2 which FAs conduct at their respective Areas during Training?	Vol.8	Achievement and Impact of the Project

b. Project Introductory Video

Two sets of Project Introductory Video were produced so that the concerned stakeholders could enhance their understanding about the uniqueness and outcomes of the Project. The first video presents the "Flow of Training", which includes Field Works and extension activities within the "training". The second video focuses on how the capacity of the FAs who participated the training has been strengthened, as well as to highlight the outcomes and impacts of the Project, along with uniqueness of the Project.

[3] In connection with wheat seed distribution program conducted by KP-DoAE, which is a three-year program from autumn 2015 to spring 2018, the Project supported to publish brochures for KP Province farmers. The Project proposed to prepare and distribute brochures related to wheat production (A5 size, 4 pages) along with the wheat seed while distributing to the farmers based on the following points; 1) Some of the wheat seeds which are going to be distributed are not that suitable to KP Province, and it was anticipated that certain pests and diseases will damage wheat production in the province, 2) Wheat seeds will be distributed widely within KP Province, also to those farmers who have not had experience in producing wheat, and 3) Utilization of the learning of the training by the Project. The brochures were drafted by KP-DoAE, which were reviewed and verified by NARC researchers. Three different brochures were developed and printed by the Project

[4] KP-DoAEplanned for fruit tree seedling distribution and the booklet was produced so that those farmers who receive the seedling could have understanding on their production.

Activity1-9: Review the Curricula after Each Training to Make Necessary Adjustment

■AO Training

Five groups of AO training were conducted during the Project period. The training curriculum was adjusted after each training based on the feedback from training participants as follows and the major adjustment made to the AO training are summarized as Table 2-7;

- Results of pre-test and post-test to evaluate degree of understanding by the participants
- Participant's daily evaluation to each training session[5]
- Overall evaluation of training session conducted at the end of training session[6]
- Re-evaluation of each session conducted at the end of training session[7]

Table 2-7: Major Adjustment made to AO Training Curriculum

	Improvement made from Previous Training
AO Group 2	1) Incorporating resource person beside NARC so as to conduct more practical training based on the actual conditions of KP Province. ・ Organization which is running projects especially for females to produce/sell sun-dried vegetable and fruits (with no electricity) for value addition. ・ Resource persons from KP-DoAE. 2) Introducing session to enhance AO's roles and responsibilities who are supervising and supporting FAs ・ Facilitation skills session by a private training institute
AO Group 3	1) Established standard AO training curriculum with consideration of balance of each session along with re-organizing each module. 2) Replace specific crops from those which grow in Northern KP Province to which grows in Central/ Southern KP Province as the participants have shifted from Northern area of KP to Central/ Southern part of KP Province.
AO Group 4 AO Group 5	Majority of the participants were those AOs who were newly recruited in January 2017 (due to prolonged recruitment process) 1) Restructured training from 3 weeks to 2 weeks, by taking into account that the participants have recently graduated from Master Degree and are fresh with basic knowledge, but are yet not well aware about KP Province farming characters and farmers cultivation. 2) 2 weeks training in line with FA Session 1 training, and adding those sessions which are necessary for "newly recruited officers", such as facilitation skills, project management, time management, and report writing.

Table 2-8 presents the standard curriculum for the AO training which has been finalized through adjustment after each training session. Training modules have been reorganized into four modules; cereal crops, vegetable crops, fruit crops, and others. The fourth module "others" consisted of irrigation, soil & nutrient, seed

[5] Each participant evaluated the following eight points according to the four-grade evaluation system; i) Command over the Topic, ii) Relevancy to the Topic, iii) Presentation/ Communication, iv) Proper Use of Training Aids, v) Time Management, vi) Interest Shown by Participants, vii) Facilitating the Questions, viii) Overall Rating.

[6] Overall evaluation of training session consists of 10 evaluation topics according to the five grade evaluation system; i) Preparation by the Trainees, ii) Contents of the Training Course, iii) Teaching Materials, iv) Relationship with Other Trainees, v) Training Schedule, vi) Training Facilities and Training Rooms, vii) Food, Residence/Lodging and Transportation, viii) Facilitation, ix) Usefulness of the Course, x) Overall Evaluation.

[7] Each participant re-evaluate each session/lecture from following five points either "yes/ no" or four grade evaluation system; i) Needed for AO, ii) Performance, iii) Very Useful for Farmers, iv) Very Useful for FA, v) Relevancy for Myself.

production, value addition, and post-harvesting. In addition, facilitation skills and project management were also included, which was necessary to AOs.

Table 2-8: Standard Curriculum for AO Training

Week	Day		Contents
1	1	Mon	Orientation, Facilitation Skill
	2	Tue	Module 1: Cereal Crops (Production technology & Major crops)
	3	Wed	
	4	Thu	Module 2: Vegetable Crops (Production technology & Major crops)
	5	Fri	
	6	Sat	Field Visit
	7	Sun	
2	8	Mon	Module 3: Fruit Crops (Production technology & Major crops)
	9	Tue	
	10	Wed	Module 4: Others - Water & Irrigation
	11	Thu	Module 4: Others - Soil, Nutrients & Compost
	12	Fri	Module 4: Others - Seed & Others
	13	Sat	Field Visit
	14	Sun	
3	15	Mon	Module 4: Others - Value Addition & Post harvest
	16	Tue	General (Time Management, Project Management, Integrated Farm Management, Farmers Field School, Information Communication Technology, etc.).
	17	Wed	
	18	Thu	Project Session
	19	Fri	Evaluation

■FA Training

Similar to the AO training curriculum, FA training curriculum was also adjusted after each training based on the feedback from training participants as follows and major adjustments made to the FA training curriculum are summarized in Table 2-9;

- Results of pre-test and post-test to evaluate degree of understanding by the participants
- Participant's evaluation to each training session[8]
- Overall evaluation of training session conducted at the end of training session[9]
- Reevaluation of each session conducted at the end of training session[10]

[8] Each participant evaluated the following eight points according to the four-grade evaluation system; i) Command over the Topic, ii) Relevancy to the Topic, iii) Presentation/ Communication, iv) Proper Use of Training Aids, v) Time Management, vi) Interest Shown by Participants, vii) Facilitating the Questions, viii) Overall Rating.

[9] Overall evaluation of training session consists of 10 evaluation topics according to the five grade evaluation system; i) Preparation by the Trainees, ii) Contents of the Training Course, iii) Teaching Materials, iv) Relationship with Other Trainees, v) Training Schedule, vi) Training Facilities and Training Rooms, vii) Food, Residence/Lodging and Transportation, viii) Facilitation, ix) Usefulness of the Course, x) Overall Evaluation.

[10] Each session was reevaluated by the following five topics with Yes/No, or according to the four grade evaluation system; i) Needed for FA, ii) Performance, iii) Very Useful for Farmers, iv) Very Useful for FA, v) Relevancy for Myself.

Table 2-9: Major Adjustment made to FA Training Curriculum

Training	Session 1	Session 2
FA Group 2	・ Replace Resource Persons who were given Low Evaluation from the Participants	
FA Group 3	・ Replace Resource Persons who were given Low Evaluation from the Participants ・ Change in Specific Crops in accordance with where the participants are from.	1) Reorganizing Module and Session ・ Reorganized the sessions into 4 modules (cereal, vegetable, fruits, others) and organized each module starting from land levelling, crop production technologies, disease/ insect management, weed control, harvesting/ post harvesting) so that the participants could learn systematically. 2) Introducing New Session ・ Facilitation Skill (Half Day) ・ Practical Presentation by the Participants by utilizing what they learned from Facilitation Skill of the Training. ・ Formulation of Extension Support Materials by FAs Group ・ Group Presentation with using extension support materials which FA produced. ・ Visit to Organization which is running projects especially for females by producing and selling purely sun-dried vegetables and fruits from the point of Value Addition/ Food Processing/ Post-Harvesting
FA Group 4	Same as the 1st session of the training for FA Group 3.	・ Reorganize module and session based on FA Group 3 Session 2 and feedback from the participants.
FA Group 5 FA Group 6	1) Readjusting “Module” and “Session” Reorganize all the session in Session 1 and Session 2 as follows; ・ Session 1 to be “basic session”, covering cultivation methods in general, as well as basic knowledge including soil, water management, and seed production. ・ Session 2 to be “practice session”, including information on specific crops and plant protection along with extension methods. 2) Target crops have been reconsidered with focusing newly targeted areas of central and southern part of KP Province.	・ In Day 1, FA presented his Field Work 1 (case study) and farmers farming schedule, production techniques, issues which farmers are facing, and how the farmers are trying to solve the issue. Resource person would listen to the presentation so that she/he could understand the ground situation of KP Province as well as to be prepared for the coming session so that the answer how to solve the issue could be presented to FA. ・ Sessions by resource person for Session2, would be based on “Questions and Answers”, not lecture.
FA Group 7 – FA Group 10		・ Specific crops being adjusted taking into account where the participants are from; e.g., “peach” changed to “mango”, “chick pea” introduced.

Table 2-10 presents the standard curriculum for the FA training, which has been finalized through adjustment after each training session. Session 1 of the FA training was re-organized as a consolidated version of AO training curriculum, including general information on crop production. On the other hand, Session 2 focuses on specific crops and diseases/ insects, in order to provide useful knowledge and skills to the participants, so that they could learn countermeasures to solve problems of farmers in their areas of jurisdiction. In addition, second week of the Session 2 focuses on how to conduct extension activities effectively, including facilitation skills practice and preparation of extension materials. The following table shows standard curriculum for the FA training.

Table 2-10: Standard Curriculum for FA Training

Week	Day		Session 1	Session 2
1	1	Mon	Orientation Session	Orientation, Facilitation Skill
	2	Tue	Module 1: Cereal Crops (Production technology)	Cereal Crops (Major cereals)
	3	Wed	Module 2: Vegetable Crops (ditto)	Vegetable Crops (Major vegetables)
	4	Thu	Module 3: Fruit Crops (ditto)	Fruit Crops (Major fruits)
	5	Fri	Module 4: Others (Soil, Nutrient)	Production Technology (Other crops)
	6	Sat	Field Visit	Field visit
	7	Sun		
2	8	Mon	Module 4: Others (Pest, Disease)	Question and Answer for major problems
	9	Tue	Module 4: Others (Mechanization, Apiculture)	Facilitation Skill (Presentation)
	10	Wed	Module 4: Others (Value addition, Post-harvest)	Extension method and Extension material
	11	Thu	Project Session	Project Session
	12	Fri	Evaluation	Evaluation

As the Project designed Session 2 to address the area specific issues and to solve what the farmers are facing, the Project emphasized especially on the followings to ensure the effectiveness of the session;

- In Day 1, FA presented his Field Work 1 (case study) and farmers farming schedule, production techniques, issues which farmers are facing, and how the farmers have been trying to solve the issue. Resource persons would listen to the presentations so that she/he could understand the ground situation of KP Province as well as to be prepared for the coming session so that the answer how to solve the issue could be presented to FA.

- Sessions by resource persons for Session 2 should be based on “Questions and Answers”, not the lectures. Main actors for Session 1 were basically resource persons so that they could provide basic information to the participants. However, the participants became the main actors in Session 2 by asking questions to the resource persons, and the roles of the resource persons shifted to understand the real field situations in KP Province and to provide suitable answers to the specific questions.

2-2. Activities for Output 2: AOs Obtain Necessary Skills to Guide, Supervise and Monitor and Extension Activities through Training at NARC

Activity2-1: Conduct Training for AOs and SMSs at NARC

AO training is targeting not only AO but also SMS of KP Province as the total number of AO is less than 100. Understanding that one of the AO's roles is to supervise FAs' activities, AO/SMS were selected starting from northern districts of KP Province in correspondence with the selection of FA participants to increase the effectiveness of the Project. Table 2-11 shows training period and number of the participants, and table 2-12 shows district-wise number of the participants to each AO training course, respectively.

Table 2-11: Group-wise AO Training General Information

Training	Start	End	Number of Participants
AO Group 1 (AO-1)	6 April 2015	24 April 2015	25
AO Group 2 (AO-2)	31 August 2015	18 September 2015	24
AO Group 3 (AO-3)	8 February 2016	26 February 2016	24
AO Group 4 (AO-4)	27 February 2017	10 March 2017	14
AO Group 5 (AO-5)	13 March 2017	24 March 2017	20
		Total	107

Table 2-12: District-wise Number of Participants for AO Training

	Total (No.)		
	SMS	AO	計
Hazara	7	18	25
Abbottabad		5	5
Battagram	1	2	3
Haripur	3	5	8
Kohistan	1	1	2
Mansehra	2	5	7
Malakand	8	14	22
Buner	1	2	3
Chitral		1	1
Dir Lower	1	2	3
Dir Upper	1	2	3
Malakand	2	2	4
Shangla	1	1	2
Swat	2	4	6
Peshawar	2	11	13
Charsadda		3	3
Nowshera	1	4	5
Peshawar	1	4	5

	Total (No.)		
	SMS	AO	計
Mardan	3	8	11
Mardan	1	5	6
Swabi	2	3	5
Kohat	3	9	12
Hangu		2	2
Karak	2	3	5
Kohat	1	4	5
Bannu	2	4	6
Bannu	2	2	4
Lakki Marwat		2	2
DI Khan	4	5	9
DI Khan	3	4	7
Tank	1	1	2
Total	29	69	98
DoAE	9*		
Grand Total	107**		

*KP DoAE Staff (5 staffs) and ATI Lecturers (4 Instructors)
**Include 13 Female Staffs

In order to evaluate knowledge improvement of the participants, pre-test and post-test were conducted in each training session. Table 2 reveals that the results of pre-test varied from group to group, however, all groups showed significant increase in the post-test results. 74.8% of the participants, which is 87 out of 107 participants, increased their post-test mark.

Table 2-13: Result of Training based on Pre/Post Test by AO

Group	Number of Participants who Increased their Score	Most Increased Score
AO Group 1 (AO-1)	6 out of 25	16.0 points
AO Group 2 (AO-2)	22 out of 24	17.3 points
AO Group 3 (AO-3)	21 out of 24	22.0 points
AO Group 4 (AO-4)	13 out of 14	20.3 points
AO Group 5 (AO-5)	18 out of 20	24.8 points

Table 2-14 presents the result of overall evaluation of training session by the participants. According to the result, the participants were greatly satisfied with training facilities and usefulness of training course as well as relationship with other participants. They also generally gratified with contents of the training course, teaching materials, and residence/ lodging. To note, some of the participants pointed out that the training for 3 week was rather long, which might have the chance to reconsider.

Table 2-14: Overall Training Course Evaluation by the Participants (AO)

	AO1	AO2	AO3	AO4	AO5	Average
Contents of the Training Course	3.69	3.88	4.05	4.30	3.96	3.98
Teaching Materials	3.50	3.99	4.08	4.46	4.14	4.03
Relationship with Other Trainees	4.30	4.19	4.24	4.74	4.40	4.37
Training Schedule	2.28	3.18	3.57	3.38	2.67	3.02
Training Facilities/ Training Room	4.38	4.43	4.41	4.59	4.29	4.42
Food, Residence/Lodging	3.62	3.60	3.38	4.53	3.70	3.76
Usefulness of the Course	4.57	4.26	4.29	4.75	4.63	4.50
Overall Evaluation	3.83	4.38	4.29	4.86	4.50	4.37

Note: Max Point = 5, Min Point = 1

Activity 2-2: Monitor the Field Activities in KP

AOs summarize the monthly extension activities conducted by FAs, and prepare the reports to District Director of Agriculture (DDA). The DDA summarizes the district-wise data to report to KP-DoAE. Most of FAs' activities are related to different programs conducted by the District, and the report includes various numerical data which are indicators of program progress, such as the number of distributed seedlings, contacted farmers, and newly registered farmers to Model Farm Service Centre (MFSC). In addition, AOs are responsible to organize monthly meeting with FAs, in order to understand the current status of FAs' activities under the AOs' supervision.

Considering such roles and duties of AOs, the Project provided a one-day project session during the AO training, which was conducted mainly by the Japanese experts. The Project session included roles and duties of AO, flow of training and extension activities under the Project, monitoring of FA's Field Works conducted as a part of training, and preparation of dissemination plans to support farmers with technology/ knowledge acquired through training.

After the AO training, AOs were to monitor the Field Works conducted by FAs under the training, and write a monitoring report so that they could further increase their chance to supervise the contents of FAs' extension activities. The monitoring reports were to include the three-grade evaluation of FA's activity on i)

relevancy of activity, ii) level of understanding regarding techniques to be disseminated, iii) FA's facilitation skills, iv) FA's attitude and communication skills in contacting with farmers, v) use of extension materials, and vi) time management. The report also included feedback to FAs on aspects as mentioned. Furthermore, farmer's reaction to the FA's activity was included in the report as well, which would help evaluation regarding the level of understanding by farmers, and degree of acceptance to introduced techniques through observation of farmers.

During the Project, 549 Field Work 1 (case studies) and 497 Field Work 2 (extension activities) were conducted by 250 FAs. 17.6% of the FA's Field Works was attended by corresponding AOs, which indicates that AOs were busy with their routine works and found it difficult to support/advice their FAs by directly participating in FAs' activities. At the same time, it has been observed that even though the AOs could not attend FAs' Field Works, most of the FAs consulted with relevant AOs about content of extension activity and preparation works before conducting activities, and reported the result to them after the activity implementation.

2-3. Activities for Output 3: FAs Obtain Necessary Knowledge and Skills to Carry Out Extension Service Activities through Training at NARC

Activity 3-1: Conduct Training for FAs at NARC

The target number of FAs to be trained under the Project was 250 FAs, which was almost a half of the total number of FAs in KP Province. In other word, approximately half of FAs of each district were the target for the FA training. In correspondence with the selection of AO training participants, FAs were selected starting from northern districts of KP Province, and total of 10 groups of FA training were conducted, for each of which 25 FAs per group were nominated as the participants. Table 2-15 shows the general information about the training, and Table 2-16 presents district-wise number of the participants for the training conducted.

Table 2-15: Group-wise FA Training General Information

	Session 1 (2 weeks)	Session 2 (2 weeks)	No. of Participants
FA Group 1	4 May – 16 May 2015	3 August – 14 August 2015	25
FA Group 2	2 June – 15 June 2015	17 August – 28 August 2015	24
FA Group 3	1 December – 12 December 2015	11 January – 22 January 2016	25
FA Group 4	14 December – 25 December 2015	25 January – 5 February 2016	25
FA Group 5	28 March – 8 April 2016	18 July – 29 July 2016	24
FA Group 6	11 April – 22 April 2016	1 August – 12 August 2016	25
FA Group 7	15 August – 26 August 2016	28 November – 9 December 2016	25
FA Group 8	28 August – 9 September 2016	13 December – 24 December 2016	25
FA Group 9	2 January – 13 January 2017	30 January – 10 February 2017	26
FA Group 10	16 January – 27 January 2017	13 February - 24 February 2017	26

Table 2-16: District-wise Number of Participants for FA Training

Division	District	Total	Division Total
Hazara	Abbottabad	10	39
	Battagram	4	
	Haripur	5	
	Kohistan	2	
	Mansehra	18	
Malakand	Buner	26	55
	Chitral	4	
	Dir Lower	5	
	Dir Upper	3	
	Malakand	6	
	Shangla	4	
	Swat	7	
Mardan	Mardan	25	44
	Swabi	19	
Peshawar	Charsadda	18	44
	Nowshera	10	
	Peshawar	16	
Koht	Hangu	1	14
	Karak	5	
	Kohat	8	
Bannu	Bannu	8	16
	Lakki Marwat	8	
DI Khan	DI Khan	32	38
	Tank	6	
Total		250	250

In order to evaluate knowledge improvement of the participants, pre-test and post-test were conducted in each training session. Table 2-17 reveals that the results of pre-test varied from group to group, however, more than 20 participants out of 25 for all the groups increased post-test scores, and 91.2%, i.e. 228 out of 250 participants increased their post-test scores.

Table 2-17: Result of Training based on Pre/Post Test by FA

Group	Number of Participants who Increased the Score	Most Increased Score
FA Group 1 (FA-1)	20 out of 25	30.0 point
FA Group 2 (FA-2)	22 out of 25	39.6 point
FA Group 3 (FA-3)	24 out of 25	40.6 point
FA Group 4 (FA-4)	24 out of 25	31.3 point
FA Group 5 (FA-5)	21 out of 24	47.7 point
FA Group 6 (FA-6)	23 out of 25	35.0 point
FA Group 7 (FA-7)	24 out of 25	45.7 point
FA Group 8 (FA-8)	22 out of 25	22.8 point
FA Group 9 (FA-9)	24 out of 26	37.4 point
FA Group 10 (FA-10)	24 out of 26	43.3 point

The results of overall evaluation of training session by the participants are summarized in the Table 2-18 below. The result indicated that the participants were greatly satisfied with the training course, and average score was more than 4 for all aspects evaluated. Especially, "usefulness of the course" was scored nearly with full mark, which shows the training course was very beneficial to the participants.

Table 2-18: Overall Training Course Evaluation by the Participants (FA)

	FA1	FA2	FA3	FA4	FA5	FA6	FA7	FA8	FA9	FA10	Av.
Contents of the Training Course	4.29	4.24	4.09	4.05	4.40	4.43	4.28	4.72	4.02	4.70	4.31
Teaching Materials	4.36	4.30	4.11	4.22	4.44	4.49	4.32	4.85	4.19	4.77	4.38
Relationship with Other Trainees	4.60	4.45	4.61	4.22	4.43	4.49	4.32	4.88	4.26	4.69	4.50
Training Schedule	4.40	4.08	3.76	4.13	4.29	4.24	3.75	4.77	3.35	4.66	4.18
Training Facilities/ Training Room	4.73	4.63	4.70	4.82	4.62	4.67	4.62	4.97	4.59	4.89	4.72
Food, Residence/ Lodging	4.34	4.11	4.44	4.35	4.52	4.53	4.24	4.86	4.03	4.73	4.42
Usefulness of the Course	4.79	4.68	4.61	4.55	4.76	4.67	4.60	4.95	4.64	4.96	4.70
Overall Evaluation	4.82	4.60	4.46	4.68	4.85	4.79	4.48	4.96	4.48	4.85	4.70

Note: Max Point = 5, Min Point = 1

Activity 3-2: Facilitate the FAs to Conduct Field Activities for Farmers in KP

FA training consisted of two sessions, namely two weeks of Session 1 and another two weeks of Session 2, and each session was followed by Field Work with which the FAs had chances to utilize the knowledge and techniques acquired through the training. Field Work (FW) 1 is to conduct case study, and FAs carried out farmer interview survey in their areas of jurisdiction to understand their farming practices and to identify farmers' problem in their areas. Session 2 of the training was organized so as to provide solutions/ countermeasures against the identified problems found during the FW1, and FAs prepared dissemination plans to conduct extension activity as FW2 to be conducted after completing Session 2. In order to effectively conduct two different kinds of Field Works, the Project team provided one-day session to FAs during each training session. The contents of the Project sessions in FA training are as Table 2-19.

Table 2-19: Contents of Project Team Session for FA Training

Session 1	Session 2
・ Problem Analysis (Area/ Farmers) ・ Introduction to FW1 (Case Study of Farmer by Conducting Interview) ・ Explanation of Format used for Field Work (General Information of the Farmer, Crop Production and Cultivation methods/ steps, issues which farmer think as "the issue and problem", countermeasures taken by the farmers to tackle the problem. ・ Practice on How to Conduct Interview by Using Field Work 1 Format ・ Formulate Field Work 1 Plan	・ Understanding Various Extension Methods, Characters of Each Extension Methods. ・ Tips to Plan Extension Activities (Understanding what points to be examined for planning, Selecting extension methods which is suitable for the activity, Setting WHO/ what kind of farmers to be targeted, necessary materials to conduct activity, necessary logistical arrangement, etc.) ・ Formulating Field Work 2 Plan including Date, Venue, Theme of Extension Activity Topic (Crop/ Topic), Method of Extension, Dotting out preparation and necessary preliminary arrangement with deadline; such as informing participants/ AOs, securing necessary equipment and supporting materials, etc., Program for the Day

The Project established a system of monitoring of FA's FWs with the cooperation of AOs and Project Monitoring and Evaluation (M&E) Officers. In addition to FA's implementation report, AOs and M&E Officers submitted their monitoring reports on each FW. Various formats for interview survey and activity report necessary for FAs, monitoring formats necessary for AOs and M&E Officers, other necessary tables for data processing used in the Project are shown in Appendix 6-5. Table 2-20 presents the number of FWs conducted by 250 FAs who participated the training conducted within the Project period.

Table 2-20: Field Work carried out by FAs

Division (No. of FA)	Hazara (39 FAs)	Malakand (55 FAs)	Mardan (44 FAs)	Peshawar (44 FAs)	Kohat (14 FAs)	Bannu (16 FAs)	D.I.Khan (38 FAs)	Total (250FAs)
FW1	126	156	88	88	28	32	76	594
FW2	75	110	88	88	28	32	76	497
Total	201	266	176	176	56	64	152	1,091

The data derived from these reports were compiled and analyzed as per activity-wise (FW1, FW2, and Action Plan) and area-wise (Division and District) distributions, which were fully utilized in the process of Project

activities. For example, the findings of the FW1 were explained to the participants and the resource persons during the orientation session (Day 1) of Session 2. This feedback of the findings of the FW1 was useful for the FAs as well as to the resource persons as the FAs could clarify what they need to learn during Session 2 to solve the issues which farmers were facing, and resource persons could understand farming practices in KP Province as well as what questions they have to answer during Session 2. Results of FW2 and Action plan activities were also useful to understand target crops and themes which FAs selected for extension activities, with which area-wise tendency and characteristics of conducted extension activities could be identified. Full detail of the Field Work results, such as crops, themes, and pests/diseases targeted, are presented in Appendix 6-6 along with the results of action plan activities which would be described later.

The results of the FW1 interview, which were used at the orientation session of Session 2, could be summarized as follows;

Box 2-1: Summary of the Result of FW1 Interview

a. **Land Preparation: Most of farmers used tractors for land preparation**, and **very little farmers used animals**. Those farmers used different machineries such as cultivator, rotary cultivator, or disk harrow according to kinds of crop.

b. **Seeds**: **Wheat** - many farmers were using **seeds provided by DoAE,** or they used wheat seeds from the **previous harvesting**. **Chick pea** - almost farmers used **previously harvested seeds**. Other crops - farmers used seeds purchased from the market.

c. **Certified Seeds**: Many farmers used certified seeds of cereals, vegetables, and fruit trees, but **little farmer was satisfied with the quality of those certified seeds**.

d. **Seed Treatment:** Most of farmers in the **southern Districts did not use treated seeds**. On the other hand, some farmers **purchased treated seeds, or they treated the seeds by themselves**, especially in case of **maize and vegetables, in the northern districts**.

e. **Sowing Method: Direct sowing is popular for cereals** such as wheat and maize, on the other hand, **transplanting seedlings is common in case of vegetables and fruit trees**.

f. **Fertilizer:** Amount of fertilizer use differed from farmer to farmer. In general, **many farmers used 12.5 kg/10a of DAP and 12.5 kg/10a of urea for wheat**.

g. **Use of Chemicals:** Many **cereal farmers applied agriculture chemicals to control weeds**, on the other hand, **vegetables and fruit trees farmers tended not to use chemicals for weeds**.

h. **Water/ Irrigation:** Generally, **cereals were cultivated either under rain-fed or canal irrigated**, but chick pea was mainly grown under rain-fed. Many of vegetables and fruit trees were irrigated by canals or tube wells.

i. **Insects/ Diseases Control:** Most of **cereal farmers did not conduct diseases/insects control**. Vegetables and fruit trees farmers generally applied agriculture chemicals to control diseases and insects.

j. **Harvesting:** Most of farmers harvested **almost all crops by hand,** however, only s**ome farmers, especially rice farmers used machinery** for harvesting.

k. **Post-harvesting:** In most cases, **wheat and maize were stored for self-consumption**, on the other hand, **vegetables and fruits products were sold to local markets.**

The crops, themes and kinds of insects/diseases dealt during the FW1 and FW2 are shown in Appendix 6-6 and the major target crops of the Field Work were wheat, maize, vegetables (tomato and onion), and fruit trees (peach and citrus). Furthermore, diseases, insect/pest, and weed were predominately major target themes which

were selected. Concerning the major diseases, rust and smut for wheat, and blight and downy mildew for vegetables were dominant. Prominent insects were fruit fly for fruit trees and vegetables, and stem borer for maize. The detailed results including area-wise analysis can be summarized as follows;

Box 2-2: Characteristics of Crops and Themes for Field Works

a. There was little difference in the target crops between the FW1 and FW2. Division-wise analysis of the target crops indicated that **cereals such as wheat and maize were common in Hazara**, and **vegetables such as tomato and onion are popular in Malakand**. **Mardan was characterized with higher portion of industrial crops (sugarcane and tobacco)**. On the other hand, **cereals were dominant with low percentage of fruit trees in Peshawar.** In **Kohat, chick pea, garlic, okra and guava** were common, which was not listed as crop legend, and cereals were less. In addition, **Bannu was also cereal-dominant division, with higher portion of wheat**. Finally, f**ruit trees were less and sugarcane was common in D.I. Khan**.

b. Regarding the target theme of the FW, **diseases, insects and weed were predominately major in FW1**, while **cultivation methods were remarkable in FW2**. This shift might be reflecting that the **FAs tried to deal with farmers' problems through improvement of cultivation methods which includes preventive measures, rather than insects/diseases symptomatic treatment.**

c. Major crop diseases were "blight", "rust", "smut", and "downy mildew". Especially, **downy mildew was very common in Malakand Division as vegetables are dominant crops in the area**. Those areas where vegetables are major crops, such as **Hazara, Kohat, and D.I. Khan Divisions, blight** was popular, while in cereal crop dominant areas, such as **Mardan, Peshawar, and Bannu Divisions, rust** was observed commonly.

d. Major insects were **"fruit fly" and "stem borer"**, and especially **fruit fly was very common in Malakand, Kohat, and Bannu Divisions**. On the other hand, **stem borer was dominant in Hazara, Mardan, and Bannu.**

Appendix 6-6 also shows various extension methods actually applied in dissemination activities during the FW2, along with extension materials used, AO attendance, and the number of farmers participated. Most of the FAs applied group meeting as the extension method, in which group of farmers were target of the activity. The detailed results including area-wise analysis could be summarized as follows;

Box 2-3: Characteristics of Extension Methods for Field Work 2

a. **Extension Methods: Group meeting was very common extension method** in general, but **individual visit was dominant in Mardan, Peshawar, and Bannu Divisions**.

b. **Extension Supporting Materials: Posters and brochures** were remarkably utilized during the activities. Especially, nearly **90% of FAs used such materials in Bannu and D.I. Khan Divisions**. T**ools such as pruning kits and sprayer, and agricultural inputs such as fertilizers and agriculture chemicals, were frequently used in Hazara and Kohat Divisions.**

c. **Use of Extension Supporting Materials:** Those FAs from FA Group 3 and onward were trained on how to prepare extension materials by themselves in Session 2 of the training. It was found out that those FAs who leant how to prepare the materials, conducted more activities with utilization of such materials, compared to the FAs from FA Group 1 and Group2 who were not trained on that topic.

d. **AO Attendance to FW2:** AO attendance to the extension activities conducted by FAs was around 18%.

e. **No. of Farmers participating FW2 per Activity:** The number of the participants to the group meetings varied from **2 to 20**. In total, **4,022 farmers participated in 497 dissemination activities**, and this implies that around **8 farmers on average participated in one activity.**

2-4. Activities for Output 4: Field Implementation of Extension Activities and Monitoring in KP are Strengthened

Activity 4-1: Install Necessary Equipment in Model Farm Service Centres in KP for Implementation

Model Farm Service Centre (MFSC) locates adjacent to each District DoAE which includes sections related to soil analysis, livestock, and irrigation etc. MFSCs are managed by the staff of DoAE and the activities such as lending farm machinery (tractor, etc.), and selling seeds and fertilizers with subsidized price for registered farmers are conducted. The Project visited some of the MFSCs to understand the roles and activities of MFSCs and discussed with KP-DoAE and JICA Pakistan Office and finalized the item and specification of equipment for MFSCs. JICA Pakistan Office procured and supplied the equipment such as lap top computers, projectors, printers, cabinets, balances, and installed them in February 2016 (refer to Appendix 6-7 for list of equipment supplied).

Within each District, two to three Agriculture Circle Offices are located as sub-offices of District DoAE, and an AO manages each of the Agriculture Circle Office to provide technical backstopping and supervise the FAs in the area. Through discussions with KP-DoAE, the Project supplied pruning kits and scales to all 77 Agriculture Circle Offices so that the FAs could enhance their extension activities by utilizing the knowledge and skills they acquired through the training (Table 2-21). Those tools which are supplied have been used in FW2 of the training or routine extension activities.

Table 2-21: List of Tools for Agriculture Circle Office

Particular	Qty/ Per Circle Office	Qty/ Total
Pruning Saw	1	77
Flower Cutter	1	77
Hand Trawl	1	77
Hedge Shear	1	77
Aluminum Ladder	1	77
Measuring Tape	1	77
Tool Bag	1	77
Respiratory Mask	1	77
Gloves	1	77
Long Plastic Shoes	1	77
Scale	1	77

Activity 4-2: Monitor Field Implementation in Coordination with AOs in KP
Activity 4-3: Facilitate the Field Implementation by the FAs in KP

■Allocation of Project M&E Officers

To support the FAs to effectively conduct 2 kinds of FWs, the Project employed M&E Officers and posted them to the respective Divisions/Districts. The Project selected the M&E Officers by conducting interviews from a number of candidates recommended by DDA, and allocated them to the District or Division where they came from by considering their local language and accessibility. As the FA training participants were clustered on the basis of district or division starting from the northern area of KP Province, M&E Officers were recruited in stages when FAs from the new District/Division joined the training.

In order to carry out Project activities smoothly and effectively with the cooperation of KP-DoAE

personnel concerned, these M&E Officers were introduced to the relevant DDA by the Project staff before starting their duties in their responsible areas. In addition, the M&E Officers participated the training sessions, especially Project sessions at Session 1 and Session 2, when their target FAs attended the training course, so as to build a good relationship with them.

Table 2-22: Project M&E Officers

Division	District	Number of M&E Officer	Starting
Hazara	Haripur/ Abbottabad	(1)*	May 2015
	Mansehra/ Battagram/ Kohistan	1	May 2015
Malakand	Buner	1	August 2015
	Chitral/ Dir Upper	1	August 2015
	Dir Lower/ Malakand	1	August 2015
	Swat/ Shangla	1	August 2015
Mardan	Mardan/ Swabi	1	December 2015
Peshawar	Peshawar/ Charsadda/ Nowshera	1	March 2016
Kohat	Hangu/ Karak/ Kohat	1	August 2016
Bannu	Bannu/ Lakki Marwat	1	December 2016
D. I. Khan	D.I. Khan/ Tank	1	August 2016
Total		10	

*M&E Officer in charge of Haripur/Abbottabad Districts was recruited from May 2015 to March 2016. From April 2016, Secretary/ Monitoring Coordinator was assigned as acting M&E Officer for the said districts for Follow-Up Activities of FW2 and Action Plan Activities by the concerned FAs.

M&E Officers worked in coordination with both AOs and FAs, and supported the FWs conducted by FAs. The Project monitored the FWs based on 1) activity reports by FAs, 2) monitoring reports by AOs, and 3) observation reports by M&E Officers. The Project established a system to timely capture the progress of activities at the field, outputs of training and FAs' problems in extension activities through these three reports. As mentioned above, all the report formats and data processing tables utilized for the monitoring activities of Field Work 1 & 2 and action plan are shown in Appendix 6-5.

■Formulation of Action Plan and Implementing Action Plan Activities

All FAs who participated FA training prepared three Action Plans of extension activities per each for the coming 12-months at the time of Follow-Up Workshop (FUWS, refer Activity 4-4), thus 750 action plans were formulated within the Project period. Implementing schedule of each action plan differed according to the themes of the extension activities selected by FAs. The Project shared the detail of action plan prepared by the FAs to their respective DDAs and AOs in charge with the FAs.

As the FUWSs were organized in January 2016 for FA Group 1 and Group 2, March 2016 for FA Group 3 and Group 4, September 2016 for FA Group 5 and Group 6, and April 2017 for FA Group 7 up to Group10, the Project could only monitor those action plan activities conducted by FAs in Group 1 to Group 6. In total, 264 action plan activities were conducted by April 2017, with 1,800 farmers' participation. M&E Officers followed up the activity carried out by the FAs and submitted monitoring reports to the Project so that the result could be analyzed. By comparing the monitoring results of action plan activities with the results of FW1 and FW2, it became apparent that the themes selected by the FAs shifted from "insects/ disease" to "cultivation techniques/ methods" as shown in Figure 2-2. Furthermore, based on the analysis of the results and comparison

of FW1 and FW2 (see Appendix 6-6), characteristics of the activities could be summarized in Box 2-4;

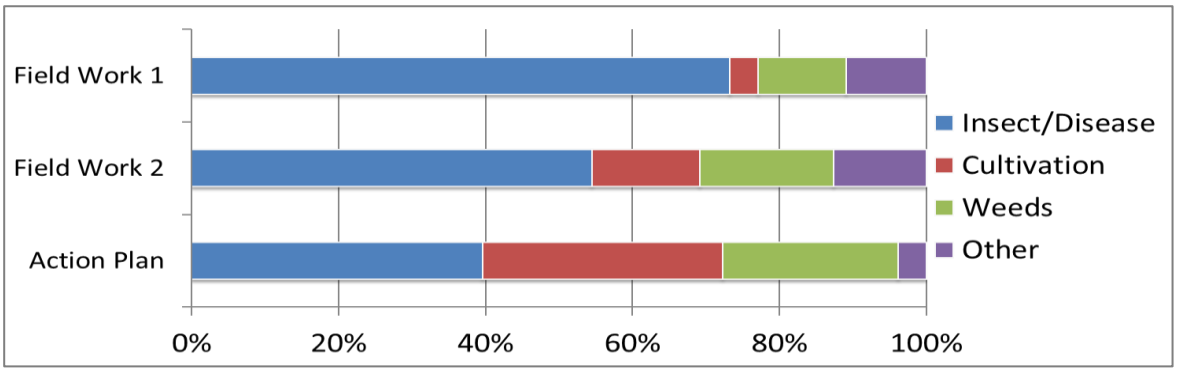


Figure 2-2: Changes found in "Themes" of Extension Activities by FAs

Box 2-4: Comparison between Result of Action Plan and FW1/ FW2

a. **Target Crops:** There were basically no differences from FW1 to FW2.

b. **Target Themes:** As indicated in Figure 2-2 above, there were clear **shift in themes, from "insects/disease" to "cultivation methods"**. It could be analyzed that FAs tried to **disseminate more preventive measures** such as cultivation methods to the farmers in the action plan activities, instead of suggesting symptomatic treatments by applying agriculture chemicals. This could be understood as one of the important impact of the training which aimed for "capacity development of extension workers".

c. **Extension Methods: "Group meeting"** was common extension method in general, but more number of individual visit or field visit was conducted in the action plan activities compared to FW2.

d. **Extension Supporting Materials:** Less number of FAs used extension supporting materials compared to FW2. The reason could be that the majority of those FAs who conducted action plan activities were from FA Group 1 and Group2, which the session on how to prepare extension materials by themselves were not yet being conducted. Those FAs who participated in the later training courses understood the effectiveness of utilizing extension materials, and accordingly, they would use more extension materials in their action plan activities.

e. **AO Attendance:** AO attendance to the extension activities conducted by FAs was around 18% which was similar to FW2.

f. **No. of Farmers participating per Activity:** The number of the participants to the group meetings varied from **2 to 20, which was similar to FW2**. In total, **1,800 farmers participated in 264 action plan activities**, and this implies that around **7 farmers on average participated in one activity**.

■Follow-Up of Field Work 2

In addition to Action Plan, FAs and M&E Officers in conjunction with respective AOs, started follow-up of the FW2 (extension activity) since March 2016. This monitoring work was conducted by FAs to grasp the effectiveness of the techniques that he introduced to the farmers during FW2. FA investigated i) the number of farmers who accepted the introduced technique, ii) effects of techniques introduced, iii) whether farmers would continue in utilizing the introduced technique, and iv) reason why farmer did not apply introduced technique, if she/he did not. Through these reviews, FAs could evaluate the effect of extension activities carried out by themselves. This follow-up of FW2 was also been reported by M&E Officers for further analysis by the Project, and the results are shown in Table 2-23 and the findings are as in Box 2-5;

Table 2-23: Results of the Follow-Up of Field Work 2

(Number of cases carried out by FAs)

	Hazara		Malakand		Mardan		Total	
No. of Activity	78		108		80		266	
No. of Follow-Up	31	40%	72	67%	33	41%	136	51%
Direct visit with FA	23	74%	66	92%	2	6%	91	67%
Direct visit without FA	0	0%	3	4%	0	0%	3	2%
Hearing from FA	8	26%	3	4%	31	94%	42	31%
Technology Applied	27	87%	67	93%	29	88%	123	90%
Technology not applied	4	13%	5	7%	4	12%	13	10%
No. of applied farmer	207	73%	794	80%	107	86%	1,108	80%
Technology satisfied	27	100%	67	100%	29	100%	123	100%
Technology not satisfied	0	0%	0	0%	0	0%	0	0%
Technology to be applied	27	100%	67	100%	29	100%	123	100%
Technology not to be used	0	0%	0	0%	0	0%	0	0%

Box 2-5: Findings from Follow-Up of FW2

a. **No. of Follow-Up of FW2 Conducted:** The follow-up of FW2 has so far been carried out in Hazara, Malakand, and Mardan divisions, where around a half of the number of FW2 activities conducted were being followed up.

b. **Method of Follow-Up:** Some **70% of the FAs visited the target farmers again with the M&E Officers,** and conducted face-to-face interviews with the farmers. On the other hand, the rest of 30% of FAs was interviewed by the M&E Officers on the phone.

c. **Adoption of Disseminated Knowledge/ Technologies: 90% of the farmers actually used technologies** which were disseminated by FAs through FW2, and there were only 10% of farmers who did not use the disseminated technologies. Those farmers who did not apply the knowledge/ technologies gave reasons such as "could not use the technologies as it was not in accordance with the season", "necessary materials/inputs were not available in the market", or "effectiveness of the technologies was not prominent to be introduced". Little farmer did not understand the contents of disseminated technologies themselves.

d. **Satisfaction of the Applied Knowledge/ Technologies:** 100% of those farmers who applied the disseminated knowledge/ technologies were satisfied as they got good results and expressed their willingness to continue to apply them in the future as well.

Activity 4-4: Obtain Feedback from Field Implementation

The Project organized Follow-Up Workshop (FUWS) to review the entire course of training including FWs with the participants to grasp the degree of learnings, to identify problems faced by the participants during the extension activities, and to obtain suggestions to improve the training. Participants of the FUWS are clustered per training cycle; one AO training group and two FA training groups. After the FUWS, the Project distributed the certificates to the participants who completed the entire process up to FUWS.

A total of 10 FUWS from FUWS-1 to FUWS-10 were organized during the Project period, the details of which are shown in the Table 2-24 below.

Table 2-24: Follow-Up Workshop

1	Date/ Major Participants	1) FUWS 1: 4 January 2016 – FA Group1, FA Group 2 2) FUWS 2: 7 January 2016 – ditto 3) FUWS 3: 29 February 2016 – FA Group 3, FA Group 4 4) FUWS 4: 3 March 2016 – ditto 5) FUWS 5: 22 September 2016 – FA Group 5, FA Group 6 6) FUWS 6: 26 September 2016 – ditto 7) FUWS 7: 3 April 2017 – FA Group 7 to FA Group 10 8) FUWS 8: 6 April 2017 - ditto 9) FUWS 9: 10 April 2017 - ditto 10) FUWS 10: 13 April 2017 – ditto
2	Agenda of FUWS A: Review of the Training, including the Field Work and Sharing among the Participants	1) Questionnaire to the participants on effectiveness of training, utilization of the knowledge gained from training, 2) District-wise Group Discussion and Presentation on the Following 4 Points; ・ What you gained from the training ・ Issues which you face while conducting your usual field activities ・ Issues which you faced while conducting Field Work 2 and countermeasures ・ Suggestion to Improve the Training
	B: Formulation of Action Plan	・ Each FA to Formulate 3 Action Plans *Note: As the training cycle ends with this FUWS, the activities of the Action Plans are to be implemented voluntarily by the trained FAs. Thus, it was emphasized that they have to utilize any possible opportunities to reach to the farmers as well as to synchronize these activities with existing programs of DoAE. A part of the action plans formulated in FUWS-1 to FUWS-6 has been followed up by the M&E Officers.*

The feedbacks from the participants during these FUWS are shown in Appendix 6-8, which could be summarized as follows;

Table 2-25: Feedback from the Participants at Follow-Up Workshop

	Feedback form Participants
Result of the Training	・ Enhancement of technical knowledge and new technologies ・ Improvement of communication/ facilitation skills ・ Abilities to communicate with farmers and to respond to their inquiries ・ Abilities to discuss with farmers to identify their problems as well as to suggest solutions ・ Better interaction with farmers and trust from farmers ・ Improvement of agricultural practices of the farmers ・ Recognition of the importance of extension planning and effective implementation based on the plans ・ Building up of relationship with NARC and researchers ・ Better linkage among the extension staff, especially among those from different districts ・ Utilization of posters and other extension materials developed by the Project ・ Increase of self-confidence and motivation in carrying out extension activities.
Issues which Hinders Extension Activities*	・ Insufficient provision of the resource for the Field Work (e.g., tools and inputs to conduct demonstration, transportation, refreshments, handouts for farmers) ・ Wide geographical coverage and voluminous workload of field staff ・ Aid dependency / over expectation among the farmers

	・ Farmers' reluctance in adopting new technologies

*Note: The "Extension Activities" refers to their routine activities, not the Field Work of the Project training.

Many of the routine extension activities which FAs conduct are related to distribution of inputs such as seedlings, seeds, or to support the farmers to get the fertilizers/ pesticides at subsidized price. In the training of the Project, however, FAs are tasked with the series of field activities during the FWs which are focused on "problem-solving approach". FAs are encouraged to identify the problem which farmers face, conduct extension activities to disseminate how to solve the farmers' problems by utilizing the learning gained through the training, and understand the farmers' responses during the extension activities as well as during the follow-up activities. From these "results of the training" above, it could be understood that the results of this cycle of the Project training have led to enhance capacities and even motivations of extension workers, which has also been indicated by the results of the questionnaire on self-evaluation by the participants conducted during FUWS. As shown in the Figure 2-3 and Figure 2-4 below, almost all of the training participants consider that their capacities to play the expected roles of extension workers have improved through this training. More than 80% of the trained FAs and more than 90% of trained AO/SMS evaluated that their capacities were "improved" or "improved very much".

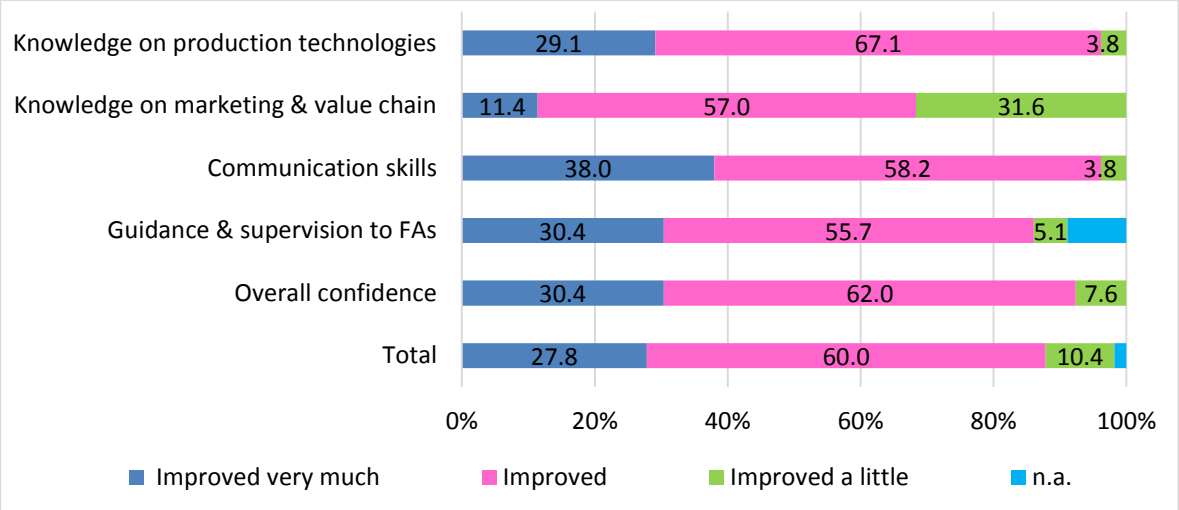


Figure 2-3: Result of Self-Evaluation by the Trained AOs

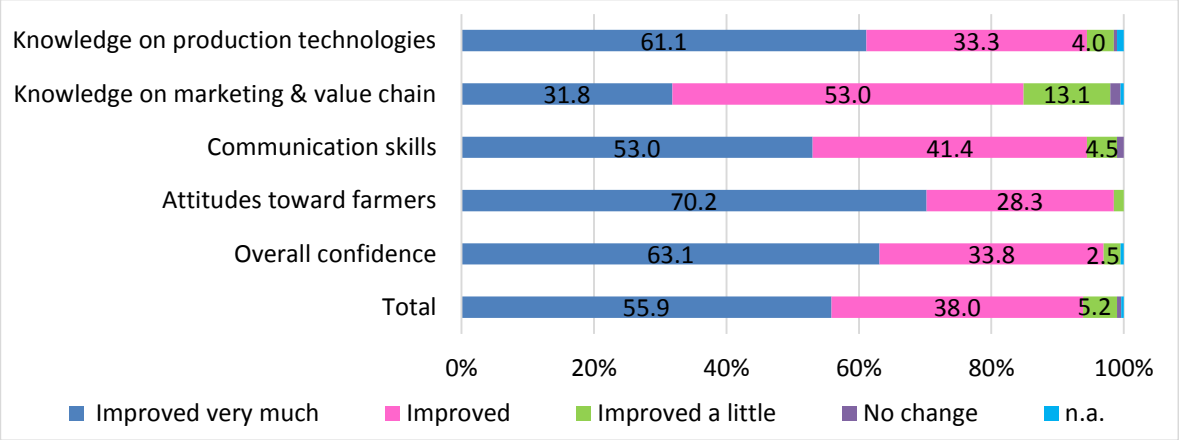


Figure 2-4: Result of Self-Evaluation by the Trained FAs

As for the issues in conducting the field work, mobility of FAs to reach the farmers has repeatedly been raised as the major constraints. It was also reported during the FUWS, however, that some FAs have tried to solve some of the hindrances in field extension activities: There was a case in which necessary inputs for demonstration were procured on cost-sharing basis between extension department and farmers, in other cases FAs improvised the insect traps using plastic bottles of soft drinks, and in many other cases they created by themselves some extension materials such as flipchart, drawing as well as multimedia presentations to be shown to the farmers. Despite of such efforts and individual initiatives, there still remains various difficulties, and the trained field staff unanimously appealed the necessity of further support for their field activities.

All these feedbacks and opinions discussed during the FUWS are shared with KP-DoAE and District DoAE through JCC and stakeholders' meetings referred to in the section below so that the further support would be provided to extension activities in the field could be supported and conducted effectively.

2-5. Other Activities

Joint Coordination Committee (JCC) Meeting

■1st JCC Meeting (Appendix 5: Minutes of the Meeting)

On 17th March 2015, the 1st JCC Meeting of the Project was organized. During the meeting, the Project explained the adjustments made after the Project started, such as duration of training, flow of training, schedule of the training, etc., which were approved by the members. It has strongly been requested by the members to make the training as practical as possible, not just theory, so that it would benefit the training participants.

■2nd JCC Meeting (Appendix 5: Minutes of the Meeting)

The 2nd JCC Meeting was held on 9th March 2016. The Project presented the Project framework, progress of activities (curriculum development, result of training, result of FW1 and FW2, result of FUWS, development of training/ extension support and other materials), upcoming plan of activities till the end of the Project (May 2017), and Project Indicators, which were then discussed among the members and duly approved.

■3rd JCC Meeting (Appendix 5: Minutes of Meeting)

The 3rd JCC Meeting was held on 5th October 2016. The Project presented the Project framework, progress of activities (curriculum development, result of training, result of FW1 and FW2, result of FUWS, development of training/ extension support and other materials, progress of monitoring and its' findings), and upcoming plan of activities till the end of the Project (May 2017). The progress, findings and schedule were then discussed among the members and duly approved.

■4th JCC Meeting (Appendix 5: Minutes of Meeting)

The last JCC Meeting was held on 26th April 2017. The Project presented the Project framework, achievement of activities (curriculum development, result of training, result of FW1 and FW2, result of FUWS, development of training/ extension support and other materials, findings from the monitoring), achievement of

Project Indicators, and impact of the Project. In addition, the Project shared the recommendations which resulted from the Project by taking into account the Project uniqueness and its' characteristics. Participants including PARC Chairman congratulated the completion of the Project, which not only have achieved its purpose but had good impacts at the farmers' level. It has been agreed among the participants that the recommendations which were presented by the Project would seriously be taken and should be incorporated in the similar projects.

KP Province Stakeholders Meeting

■1st KP Province Stakeholders Meeting

On 8th March 2016, 1st KP Province Stakeholders Meeting was organized. The participants were the representatives of KP Province DoAE, Peshawar, DDAs-DoAE of all 25 districts in KP Province, representatives of API, and JICA Pakistan Office. The Project presented the framework of the Project and the progress of the activities (curriculum development, training result, result of FW1 and FW2, findings from the FUWS, development of training / extension materials), and the schedule of training up to the completion of the Project.

There were positive feedbacks from those DDAs whose AO/SMS/FA participated in the training, such that their skills and knowledge increased and their attitude and behavior improved as well with confidence. On the other hand, there were complaints raised by some of the DDAs that they were not briefed about the Project in the beginning, thus their considerations have not been well reflected in the Project. It has also been raised that the involvement of the DDAs in this Project should further be enhanced.

Since the understanding and cooperation of DDAs were essential for the FAs to implement extension activities by utilizing what they learned in the training. Sharing information such as the progress of the Project with DDAs and ensuring the cooperation of DDAs under the extension system at the District were considered to be the important challenges in the succeeding course of the Project implementation.

■2nd KP Province Stakeholders Meeting

KP Province Stakeholders Meeting was organized on 4th October 2016. The participants were the representatives of KP Province DoAE, Peshawar, DDAs-DoAE of 24 districts in KP Province, representatives of API, and JICA Pakistan Office. The Project presented the framework of the Project and the progress of the activities (curriculum development, training result, result of FW1 and FW2, findings from the FUWS, development of training/ extension materials, progress of the monitoring and findings), and the schedule of training up to the completion of the Project.

Those DDA's whose AO/SMS/FA had already participated the training expressed their observations on the positive changes on the attitude and knowledges of their staff, as had been in the 1st KP Province Stakeholders Meeting. After the 1st KP Province Stakeholders Meeting, the Project made efforts to foster further understanding among the DDAs regarding the Project activities and to gain their supports toward FAs on their extension activities, through various ways of sharing information on progress of the Project, and it was noted that there have been more positive responses compared to the previous meeting. In addition, it was agreed to discuss about how to set the training opportunities for those remaining FAs who could not participate the training of the Project.

National Seminar

A National Seminar was organized on 20th April 2017 to present the Project achievement and impact to the concerned stakeholders. In the Seminar, the achievement of the Project purpose and the impacts of capacity development of extension staff were presented by the Project personnel as well as by some representative of the DDAs and training participants. Five representative FAs of those trained FAs presented their learnings as follows; i) poet about the "training", ii) knowledge, iii) facilitation skill, iv) Field Works of the Project, and v) confidence gained from the training within which extension activities to the farmers were included. As those trained FAs made the presentation and expressed with their own words how their capacities were developed and changes took place through the training, the Seminar could provide the opportunity for the participants including NARC, KP-DoAE, District Directors, AOs and FAs, to understand the tangible outcomes of the Project.

Study Visit to JICA Project in Gilgit-Baltistan

A study visit to JICA Technical Cooperation Project "Promotion of Value Added Fruit Products in Gilgit-Baltistan" (JICA GB Project) was organized from 29th September 2015 to 4th October 2015. The participants of the study visit were selected from those who participated in AO Group 1 Training, FA Group 1 Training and FA Group 2 Training. Together with the resource person from NARC on value addition and Project staff, a total of 14 persons participated in the study visit.

Table 2-26: Schedule of Study Visit

	Date	Activity	Place of Stay
Day 1	29th September 2015 (Tue)	Travel	Besham
Day 2	30th September 2015 (Wed)	Travel→Arrive Kalimabad, GB	Kalimabad
Day 3	1st October 2015 (Thu)	・ Courtesy Call to DoA, GB ・ Introduction of JICA GB Project and DoA ・ Move to Hunza ・ Visit Apricot Farmer ・ Presentation on Project Activities and Activities of Baltit Rural Support Organization (Local Support Organization) on cultivation techniques, post-harvesting, marketing, extension activities, tasting of apricot ・ Visit core-farmers' orchards (observation of training: pruning and Bordeaux mix, Q&A	Hunza
Day 4	2nd October 2015 (Fri)	・ Visit Apple Farmers ・ Presentation on Project Activities and Activities of Rakaposhi Development Organization on cultivation techniques, post-harvesting, marketing, extension activities, tasting of apple) ・ Visit core-farmers' orchards (observation of training: tree management training, Q&A ・ Visit DoA's Fruit Nursery in Multazabad ・ Move to Kalimabad, GB	Kalimabad
Day 5	3rd October 2015 (Sat)	Travel Back	Balakot
Day 6	4th October 2015 (Sun)	Travel Back	

Though the team could visit JICA GB Project just for 2 days, it was highly evaluated by the participants as they could learn the cultivation technologies and extension system which are different from the ones in the KP Province. Major learning raised by the participants are as follows (details are given in Appendix 6-9);

- Cultivation Techniques/ Use of Organic Fertilizers (Bokashi, Bordeaux Mixture , Bio Insecticides Preparation, Mountain Micro-organism Liquid, Pruning, etc.)
- Post-harvesting and Marketing (Harvesting, Drying, Grading, Packing, Linkage with Private Agri-business Company, etc.)
- Local Government Structure and System in GB
- Women playing active role in GB

The participants shared their learning with other colleagues in their respective district as well as to the farmers. Furthermore, as the participants joined FUWS-1 and FUWS-2, the participants presented their experience to the group and have distributed the printed materials which could be utilized in the extension activities.

Training in Japan

Followings are the counterparts and relevant personnel of the Project, who attended the training in Japan.

Table 2-27: List of Participants who Attended Training in Japan

	Name	Organization	Name of Training	Training Duration
1	Mr. Abid Kamal	Director of Model Farm Service Centre (MFSC), DoAE, Peshawar, KP Province	Country Focused Training on Farmer-led Extension Method (A)	From 6th May 2015 to 5th June 2015
2	Mr. Yousuf Marri	Program Leader for Human Resource Development , API, NARC		
3	Mr. Khisro Nawaz Ahmad,	Deputy Director Horticulture HQ, DoAE, Peshawar, KP Province	Country Focused Training on Agricultural Extension Planning and Management	From 5th July 2015 to 5th September 2015
4	Mr. Muhammad Anwar Khan	SMS, Agriculture Office, Tank District, D.I.Khan Division, KP Province	Farmer-Led Extension Method (B)	From 5th January 2016 to 5th February 2016
5	Mr. Shah Alam	SMS, Office of the District Director Agriculture Extension, Shangla District, KP Province		
6	Mr. Shahid Hussain	Agriculture Officer, Swat	Agriculture Extension Planning and Management	From 28th August 2016 to 29th October 2016
7	Mr. Asad Ali	Senior Instructor, Agriculture Training Institute (ATI), Peshawar	Country Focused Training on Farmer-Led Extension Method Curriculum Development for Motivating Farmers (B)	From 9th January 2017 to 9th February 2017
8	Mr. Muhammad Abbas Khan	Agriculture Officer, Swabi District		

Chapter 3 Challenges and Countermeasures taken on Project Management

The challenges and countermeasures of the Project were as follows.

Table 3-1: Challenges and Countermeasures

Challenges	Countermeasures
1. Challenges related to PC-1	
・ Although the Project proposed to cover suitable number of participants based on the training contents and the Project period, the number of participants had to be increased as stipulated in PC-1. There seemed to be a gap of information between what the Project has initially proposed and the processes that had already been taken by those involved in Pakistan. Various activities related to Output 1 had also been implemented prior to the commencement of the Project.	・ Through the discussion with relevant parties, some modifications of the curriculum and schedule of the training were made, according to which the activities of the Project could be carried out. However, the Project had to operate the training activities under very tight schedule because of the wheat program in KP Province which mobilized all of the extension workers for 3 months when the training of the Project could not be conducted. As PC-1 is a binding document for Pakistani implementing agencies, the contents should carefully be streamlined with scheme of assistance at initial stage, especially in case of Technical Cooperation Project, which might require flexible modification of activities based on the actual progress to maximize the effectiveness of the project.
・ It seems that there is a misunderstanding as if the Project is a financial assistance project in which API is executing the budget granted by JICA. API has, therefore, been requested to submit account statement by the higher authority thus API requested the Project to submit the necessary information and documents, including the receipts which, however, the Project had to submit to JICA Headquarters.	・ Regarding the challenges mentioned in the left column, the Project had to repeatedly explain that this project is the Technical Cooperation Project and the procedures are completely different from those of grant or yen loan projects. The initial misunderstanding has, however, continued for quite a long time and caused cumbersome handling for both the Project and API. It is therefore important for JICA Pakistan Office to explain directly to the implementing agencies at initial formulation stage as well as to higher authorities concerned about different financial mechanism to be applied among technical cooperation, grant and yen loan projects so as to foster clear understanding on the different schemes associated with different financial arrangements.
2. KP Province DoAE Routine Activity	
・ KP-DoAE is conducting vast ranges of activities, including field day, farmers field school, demonstration plot, and distribution and / or sales of subsidized priced agricultural inputs. These activities are well covered by the budget. At the same time, KP-DoAE and District DoAE is facing difficulties in supporting FAs as like with mobility and small expenditures which takes place while FA organize farmers group meeting and these expenditures are more or less covered by FA on personal bases. Thus, beside those activities such as field day and farmers field school which are allocated with budget, FA are rather focusing on individual	・ DoAE staff became aware of the effectiveness of the practical extension work in the field from FW2 and other Project related activities. Farmers' meeting with a minimum number of participants could be organized with relatively small cost, which could reach out more farmers rather than individual visits. The Project raised the issues during the stakeholder meeting so that KP-DoAE and District DoAE could consider about allocating more budgets for the extension activities in the field as such. During the final JCC meeting, the Project emphasized the importance of monetary support to FAs to implement the action plans formulated by the trained FAs at

farmer visit as it would require no or less expense to be covered by himself compared to farmers group meeting.	Follow-Up Workshop so that they could continue with field dissemination activities similar to the Field Work 2 of the Project which would benefit the farmers. Furthermore, the Project made recommendation for KP-DoAE and District DoAE to provide such supports as well as to continue monitoring on these field activities by FAs.
Challenges	**Countermeasures**
3. API as Training Management/ Coordination Organization	
API is the training management / coordination body for all the training activities carried out in NARC. The major roles of API are focused on logistic works for training implementation, such as lodging and meal services for participants, communication with resource persons, and coordination with relevant institute. Although API has effectively been playing these expected roles, further capacity development may also be desirable for API to enhance its functions as "training institute", as described below.	API adequately showed its capacity and advantage as training institute in logistical works necessary to implement the training program. Especially on handling with the unexpected issues, such as the resource person could not start on time or change in schedule, were handled in a timely manner so as to avoid confusion.
・ Under this Project, the original curriculum was formulated through discussions among the resource persons from the institute executing the training, relevant stakeholders in KP and API staff. The contents of the curriculum should continuously be improved in further collaboration among all parties along with the progress of the Project.	・ The Project was tasked to train 10 groups of FAs for Session 1 and Session 2. Thus, it became easier task to modify and improve the curriculum and contents by reflecting the lessons learnt from each group and each session, compared to formulate the curriculum from scratch. Improvement in curriculum is being carried out under the collaborative works with API counterparts, and this may lead to the capacity building on curriculum development by API.
・ API had the experience in evaluating the conducted trainings with those they have organized beside this Project. API could be more capable in utilizing the "results of the evaluation" to improve future training courses and evaluation from multiple aspects, including conducting pre and post-test to understand the degree of learning by the participants, and data compilation and analysis for utilization of the data obtained.	・ The Project shared the result and the analysis of the evaluation data since the first training, which were utilized in discussions on how to improve the curriculum. Both API staff and Project staff were involved in the evaluation works for each session and for entire course, and the evaluation results had contributed to modify and finalize the curriculum by reflecting the needs and aspirations of participants.
・ There has been some cases, especially in the very initial stage of the Project, in which the contents of the lectures given by some resource persons were not exactly fit to the requirement and needs of the participants due to various factors such that the resource persons did not well understand the structure of the training, that some of them have not been exposed to the agricultural situation in KP.	・ In addition to provide the right and relevant information to the resource persons regarding the training, the Project tried to increase the opportunities for the resource persons to enhance their understanding on the flow of training in the Project, and also to increase the chances to communicate with the participants so that they could better understand the situation in KP Province. As also being supported by the repetition of Session 1 and Session2 for 10 groups of FA Training, many resource persons, especially those who have regularly being engaged in the training, gradually understood the structure and aim of the training and appreciated the features of the Project's training.
・ The flow of the Project and the details of the Field	・ The Project involved API staff, who was in charge

Works were explained in the Project sessions and was administered directly by the Project team, not by NARC resource person, until the middle of the Project. The integration of FWs in the "training" is the unique feature of this training, and it was essential to have clear understanding on what to be taught and how the sessions are conducted, details of FWs, and how the field data should be compiled and analyzed.	with extension material development, to take part in the Project session from FA Group 5, Session 2 training. The particular staff left for academic program abroad, and another API staff took over the roles to be played in project session, sessions on extension methods, and preparation of extension materials.
Challenges	**Countermeasures**
4. Understanding "Curriculum" and "Module"	
・ Some of the contents related to a specific field were repeated in different sessions. It was considered as waste of training time, and at the same time it was disturbing the systematic learning by participants.	・ In order to avoid the repetition of same contents in different sessions, arrangements before session with each resource person was elaborated. ・ The session contents and module were restructured in a way, i.e., a certain crop to be learnt in order of "production techniques, insects/ diseases control, and harvesting/ post harvesting", so that the participants could understand the crop systematically.
・ The classification of module and the contents varied from training to training and some of the modules were not reflecting what was mentioned as module title.	・ In the beginning, the serial numbers of the modules and the sessions in each module were different from one training to another. The Project examined the classifications, and resorted and integrated into 4 modules.
5. Remote Operation due to Security Concern	
・ This Project was executing the training activities for AOs/SMSs and FAs from KP Province, at NARC which is located in the capital city, Islamabad. Japanese experts were allowed to visit only Hazara Division out of 7 Divisions in KP Province, and there was no chance for them to visit the remaining 6 divisions.	・ The Project allocated M&E Officers on division/ district wise and established the system in which the activities and the progress at the field level would be reported to the Project office in NARC. For the recruitment of M&E Officers, the Project tried to keep good relationship with KP-DoAE through the close contact to DDA (District Director of Agriculture) and the recruitment interview were basically with those who were nominated by the DDAs. Moreover, the Project arranged for M&E Officers to partially participate in the training course, e.g., Project Session at Session 1 and Session 2, to secure the smooth communication with trainees for the future field works. For the actual monitoring works of the M&E Officers, M&E Officers continuously submitted all the necessary information of FWs with reporting formats prepared by the Project. Sharing photos and movies through cloud system by M&E Officers were also useful for Japanese expert to understand the Field Works carried out by FAs. The Project kept close communication with M&E Officers through telephone and e-mail along with field reports and monthly reports. Blessed by young and competent staff members, the monitoring system functioned effectively and all the necessary information were collected and streamlined in Project Office in Islamabad, despite of the situation in which the

・ Although the observation of field activities carried out by FAs is very important to understand the effectiveness of the training as well as to improve the Project activities, field visits by Japanese experts are rarely approved. They could obtain permissions to visit the field to participate in the Field Work only 4 times during the entire period of the Project.	Japanese experts could not have chances to visit FWs by FAs. This method could be applied to any future projects to be operated under remote control due to security reasons. ・ The Project performed remote control by supervising the M&E Officers for them to perform appropriate feedback as required. Nonetheless, it is still important for the Japanese expert to observe the field activities by the FAs by themselves, thus, it might be desirable for JICA Office to make flexible arrangement according to the situations.
Challenges	**Countermeasures**
6. Remaining 250 FAs who cannot attend Training	
・ The total number of FAs in KP Province is around 500 and the target number of training participants under this Project was 250, which is about a half of all FAs. It is also difficult for trained FAs to transfer all the training contents to FAs who are not participating in the training of the Project.	・ The Project developed sub-training textbooks on cereal crop, vegetables, and fruits production in Urdu, which contains major components of the training. The textbooks were distributed to all FAs in KP Province for their reference. ・ The Project modified the procedure of FW2 from FA training Group 6, and requested each of the trained FA to carry out his FW2 with non-trained FA as a pair. Through this arrangement, the non-trained FAs were given opportunity to have similar experience of trained FAs through more communication with the trained FA, and could learn about effective extension activity. More than 70% of the FAs trained from Group 6 invited their colleagues to join their FW 2. From this "pair" Field Work activities, the Project, to some extent, could provide the chance for trained FAs to share their leaning to non-trained FAs, and non-trained FAs to have hands-on experience of "how to conduct effective extension activities to the farmers".

Chapter 4: Achievement of Project

4-1 Achievement of Output

■Output 1: Demand-based Training Curricula for Capacity Development of Agriculture Extension Staff i.e., Agriculture Officers and Field Assistants) are Developed

	Indicator	Achievement
Indicator 1	Training curricula are developed according to the requirement of AOs and FAs.	【Achieved】 A training curriculum for AOs and SMS and another training curriculum for FAs have been developed.
Indicator 2	At least 80% of the training participants evaluate the curricula as useful for their extension services.	【Achieved】 93.2% of the training participants evaluated the curricula as useful for their extension services.

■Output 2: Agriculture Officers Obtain Necessary Skills to Guide, Supervise and Monitor Extension Activities through Training at NARC

	Indicator	Achievement
Indicator 1	At least 70% of the trained AOs increase the scores of post-tests from the scores of pre-tests.	【Achieved】 74.8% of the trained AOs increased the scores of post-tests from the scores of pre-tests.
Indicator 2	At least 80% of the trained AOs evaluate their knowledge and skills to guide and supervise the FAs as improved through the training.	【Achieved】 94.4% of the trained AOs evaluated their knowledge and skills to guide and supervise the FAs as improved through the training.

■Output 3: Field Assistants Obtain Necessary Knowledge and Skills to Carry Out Extension Service Activities through Training at NARC

	Indicator	Achievement
Indicator 1	At least 70% of the trained FAs increase the scores of post-tests from the scores of pre-tests.	【Achieved】 91.2% of the trained FAs increased the scores of post-tests from the scores of pre-tests.
Indicator 2	At least 80% of the trained FAs evaluate their extension skills as improved through the training.	【Achieved】 94.2% of the trained FAs evaluate their extension skills as improved through the training.

■Output 4: Field Implementation of Extension Activities and Monitoring in KP are Strengthened

	Indicator	Achievement
Indicator 1	At least 80% of the trained FAs conduct field extension activities for farmers by utilizing their learning from the training.	【Achieved】 100% of the trained FAs conduct field extension activities for farmers by utilizing their learning from the training.
Indicator 2	At least 50% of the field extension activities by the FAs are monitored / supervised by relevant personnel.	【Achieved】 All (100%) of the dissemination activities conducted by the trained FAs by the end of April 2017 have duly been reported to respective AOs and other relevant extension personnel. According to the report of the Monitoring and

		Evaluation (M&E) officers, more than a half (50%) of FAs consulted with the respective AO/SMS prior to the actual conducts of dissemination activities to seek advices from them, while 134 activities (17.6%) were accompanied directly by respective supervising AOs.

4-2 Achievement of Project Purpose

■Project Purpose: Agricultural knowledge and extension skills of extension service staff in KP are Improved.

	Indicator	Achievement
Indicator 1	A total of 350 extension service staff are trained and certified by the end of the Project.	【Achieved】 A total of 357 extension service staff was trained (107 AO/SMS and 250 FAs) and certified by the end of April 2017.
Indicator 2	At least 400 dissemination activities are conducted to deliver agricultural knowledge and/or production techniques to farmers by the trained Field Assistants (FAs) by the end of the Project.	【Achieved】 761 dissemination activities have been conducted by the trained FAs by the end of April 2017, through which agricultural knowledge and/or production techniques were delivered to farmers in KP.

Based on the confirmation on the achievement of outputs described in the previous section as well as on the indicators above, the Project purpose is considered to have successfully been attained by the end of the Project.

4-3 Impact of the Project

As described above, the Project purpose and outputs have already been achieved. Beyond those achievements on the capacity development of agriculture extension staff stipulated in the Project Design Matrix (PDM), there are further impacts which are observed at the level of the farmers in KP Province.

The foremost objectives of the training of extension staff are to equip them with knowledge and techniques which are useful to solve the problems and to increase production and/or productivity of the farmers, and to enable the extension staff to perform good dissemination of these knowledge and technologies to the farmers. It is also important for the extension staff to actually utilize and teach what they learnt from the training to the farmers, through the process of which they could reinforce their understanding and further familiarize themselves with these knowledge and skills. Nonetheless, in the training for the extension staff in general, application of learning will depend on the participants' initiatives as well as on the conditions where the trained staff would work in, and the learning could be applied only after the completion of the entire training course, therefore the results of application of learning and impacts on farmers' practices will not be known to those who trained the staff. Under the circumstances wherein various constraints and challenges exist for the staff to conduct field activities, merely improving the level of knowledge and skill of extension staff would not enough to attain the ultimate purpose of training, i.e. to disseminate the solutions of problems or to introduce better practices to farmers to improve their production activities.

Based on these notions and recognitions on the existing issues pertaining to the agricultural extension in

KP Province, the Project has introduced a certain mechanism to integrate the field work to conduct actual extension activities as essential part and parcel of the entire training course, the details of which were explained in previous Chapter 2. Also, the trained staffs were requested to formulate the "Action Plans", i.e. continuous extension activities after the completion of the training. Through these activities, a total of 761 field extension activities were conducted by the trained FA, and more than 5,800 farmers have disseminated with new knowledge and techniques related to their agricultural production. Moreover, it was revealed during the follow-up information gathering that knowledge and techniques disseminated through 90% of these extension activities above were adopted by farmers, and 100% of farmers who have adopted these knowledge and techniques obtained good results in their production.

The purpose of integration of actual field extension activities into the "flow of training" was initially to ensure and reinforce the learning from the training among extension staff, but the Project has also intended to bring about the direct impacts at the farmers' level, i.e. dissemination of knowledge and technologies to the farmers, application of extended technologies, and hence the improvement of the production activities of the farmers. It is thus concluded that, as the results of the Project's training, the expected capacity development of extension staff as well as the intended impacts on the farmers farming practices have simultaneously been achieved, thus that the approach and mechanism of Project was proven to be effective.

Chapter 5 Recommendation to Achieve Overall Goal of the Project

5-1. Capacity Building of AOs and FAs under the Project

The "training flow" of the Project has its uniqueness in incorporating actual extension activities within "training" so that the training participants could have the chance to actually "apply" the knowledge and technologies at field level and to understand how to apply. In addition, it also provides those who are organizing the training to understand whether the training was useful for the participants as the application of the learning and impacts on farmers' farming practices, could be tracked from Field Works conducted by the participants within the "training". Before the discussion, situation and regular "extension activities" by KP-DoAE could be summarized as follows;

Box 5-1: Regular "Extension Activity" in KP Province

a. Regular extension activities includes "delivering agricultural inputs, such as seeds, seedlings, and fertilizers" and/or "selling inputs at subsidized price" to farmers. These activities were evaluated by figures such as the number of seeds sold, seedlings distributed, number of farmers registered to MFSC, the number of farmers visited by FAs, and so forth.

b. Dissemination of technical information to farmers, are mainly done through large-scale activities such as field day or farmers field school at District level, held a couple of times per year. On the other hand, conducts of small-scale and/or practical technical guidance to individual farmers or small group of farmers were limited and were based on FA's own efforts.

c. New and updated information was not transferred to FAs, and extension supporting materials which could be used in extension activities were not made available to FAs.

d. Farmers expectation toward FAs were more on provision/deliver of agricultural inputs, rather than the support for the farmers with technical knowledges as FAs were mostly seen in those input-related activities. On the other hand, when farmers were not satisfied with delivered seeds and seedlings, and found that the FAs could not support them with technical knowledge to solve their problem, some feelings of distrust of FAs would be generated.

e. As FAs were not confident with their knowledge nor were acting more as "delivery of agriculture input," FAs had little confidence to conduct "extension activities".

In addition to the situations described in Box 5-1, other constraints such as unavailability of transportation and vast area to be covered by each FA could be understood as inhibiting factors for FAs in their conduct of effective dissemination activities to the farmers. Taking into account these circumstances, the Project tried to develop the capacity of extension staff as presented in Box 5-2 below through the training flow which combines actual extension activities in the "training".

Box 5-2: Capacity Development of Extension Staff under the Project

a. Participants to acquire the basic as well as the updated knowledge and technologies which the farmers could apply, which they could disseminate to farmers.

b. FAs were tasked to conduct Field Works, such as case studies on farming practices of farmers and dissemination activities after each session. The Field Works provided opportunity to the participants to meet the farmers directly, to increase the interaction with the farmers, to understand their farming practices and their issues, and to think about what could be the best way for the farmers to solve the issue at farmers' level. It was also the opportunity for FAs to understand that extension activities are to provide useful and applicable knowledge/ techniques to farmers.

c. Understanding that there have been limited extension supporting materials which would be attractive and facilitating better understanding of farmers, the training included a session on the effectiveness of extension supporting materials and how to produce them. The participants were also given the chance to learn how to use those materials as a part of facilitation skill training.

d. The Project developed various extension supporting materials including posters, brochures/ booklets, field guide books, training sub-textbooks, and videos.

According to the participants' evaluation during the follow-up workshop, many FAs highlighted their improvement in facilitation skills, alongside with improvement in knowledge and techniques through participating this training cycle. Consequently, the participants have increased their self-confidence and have now become confident enough to carry out extension activities to the farmers. It could be understood that facilitation skill training with actual presentation in front of the co-participants contributed to increase their self-confidence, but also the implementation of FW2, which provided them with opportunities to carry out extension activities in front of farmers, allowed them to increase their self-confidence as they could find out the direct reaction from the farmers. Furthermore, the Project developed different kinds of extension materials, and even the participants themselves learned how to produce extension materials, which made it easier for them to carry out extension activities effectively. These positive changes seemed to have led to notable improvement in conducting extension activities, out of which the extension staff gained more trust from farmers. Consequently, the Project has contributed to enable extension staff to be more confident and more motivated to conduct extension activities, which could be understood as shift in paradigm as illustrated in Figure 5-1 bellow;

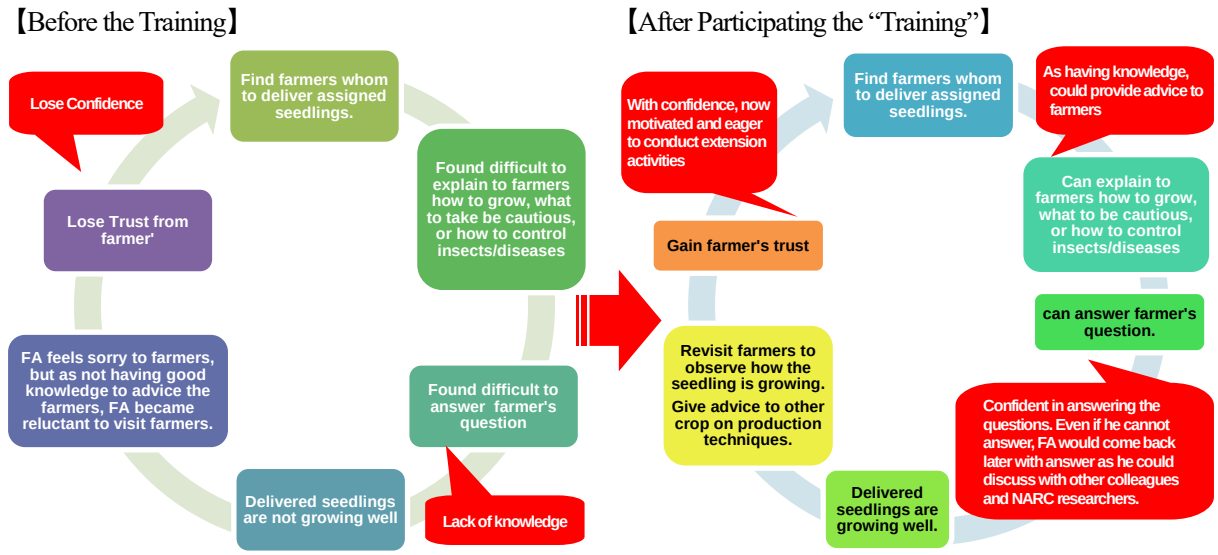


Figure 5-1: Paradigm Shift through "Training including Practical Extension Activities"

As mentioned above, the Project has successfully achieved the capacity development of extension staff, and now they are ready to carry out their extension activities effectively. Maximum mobilization of those trained extension staff and utilization of those extension materials produced by the Project could result in achieving overall goal of the Project, i.e. "appropriate knowledge and skills to improve agricultural productivity are extended to farmers". Taking into account the notion of overall goal of the Project and sustainability of the achievement of

the Project, the Project would like to suggest the following recommendations.

5-2. Recommendation

A: "Training" Activities

Recommendation A-1: Structure of "Training"

It is recommended to incorporate field works in the "training structure" for any training which would aims to develop "the capacity" of the participants in comprehensive manner, not limited to the acquisition of particular skills. Generally speaking, participants do gain knowledge and skills which are useful to conduct extension activities from the training courses. However, it is often found out that the participants are not well aware of "how to utilize" such knowledge and skills in their actual activities. Under the built-in field work structure, participants are able to learn how to apply those learning in the field. In addition, they will gain more confidence to conduct extension activities, after experiencing good response and/or positive evaluation from the target farmers of field activities. The training structure under the Project could be considered as a good example of "built-in field work" type training, therefore it would highly be recommended to apply such structure in future training for "capacity development".

Recommendation A-2: Curriculum Development

CUDBAS workshop is one of the useful methods to develop training curricula. The method has been established for curriculum development of vocational training, and it has been applied to develop appropriate training curriculum for specific training targets through participatory approach. Moreover, once a curriculum is prepared, it is often necessary to continuously modify and improve the curriculum according to the result of training so as to better accommodate the participants' needs. In order to meet the needs of the participants, it is essential to conduct evaluation on the training course from various viewpoints, and incorporate those evaluation results to modify and improve the curriculum. Under this Project, the training curricula have continuously been modified and improved after each undertaking, which resulted in high satisfaction among the participants regarding the contents of the training. Therefore, it is recommended that the training curricula to be developed based on the participatory needs analysis of the participants, and to be continuously modified and improved by reflecting the result of training evaluation to make the curricula adequately meet the needs of the participants.

Recommendation A-3: Evaluation of the Training

The Project employed various types of training evaluation such as 1) Pre/ Post-Test, 2) Daily Session Evaluation, 3) Re-Sessions Evaluation, and 4) Overall Training Evaluation. The results of the evaluation were utilized to understand the degree of understanding, knowledge gained through the training, whether the contents of each session were matching the needs of the participants, and requirements/suggestions from the participants to improve the training course. Through the training course evaluations conducted by the Project, the processes to adjust and accommodate target crops and cultivation technologies necessary for the participants has become easier, even though there were participants from different regions in one group and the Project also had to keep on adjusting to the different characteristics of districts of the participants which varied from group to group. Thus, it

is considered to be very useful to apply similar training evaluation methods to other training activities in the future, which would contribute to enrich the training.

B: Extension Activities

Recommendation B-1: Utilization of Good Practices and Extension Support Materials

Different kind of extension support materials have been developed by the Project, including "Example of Good Practices" which describes good examples of extension activity conducted by the participants after the training. These extension materials would be useful for better implementation of extension activities by the extension staff. Therefore, the Project recommends KP-DoAE to fully utilize these materials whenever the extension staff would carry out an extension activity in their command areas.

Bureau of Agriculture Information of KP-DoAE is in charge of their website and these extension support materials, such as in PDF documents and videos, could be uploaded on their website. Once being uploaded, these materials could be shared more widely among the extension staff and farmers. In addition, KP-DoAE is currently developing application software for smartphone users on agriculture, fisheries, livestock and soil related information. Once the application is completed with information, it is planned to be installed in tablet computers which would be distributed to District officers and registered MFSC farmers. Such kind of data sharing could accelerate disseminating and utilizing of the information, and the Project strongly recommends to up-load those extension materials which the Project produced, so that these materials shall fully and effectively be utilized by extension staff and farmers, as well as by any other parties who may also need such information.

Recommendation B-2: Utilization of the Equipment which were Provided through the Project

Equipment was provided to MFSC of KP Province, which includes PC, projector, printer, and electric balance. Furthermore, pruning kits were delivered to the circle offices under the Project. It has already been observed that the equipment has been utilized during Field Works conducted by the trained FAs. For example, some FAs already used PC and projector at MFSC in their extension activities, and pruning kits were also utilized in practical training for the farmers to understand proper pruning of fruit trees. It is desirable to continue and even enhance utilization of those provided equipment and tools in future extension activities in order to make extension activities more effective and successful.

C: Sustainability of the Project Activities

Recommendation C-1: Support FAs in Implementing "Extension Activities"

It has been observed that there was remarkable change in the contents of extension activity and/or of selection of countermeasures to solve farmer's problems throughout the Field Works and extension activities conducted by the trained FAs. For example, insects and diseases control has been one of the biggest issues among farmers, and the major solution provided by FAs in the beginning was mostly applying insecticides and pesticides. However, after the FAs learned appropriate knowledges and techniques related to the issues systematically, they started to suggest alternative measures to farmers instead of using chemicals, such as to use treated seeds which are tolerant to insects/diseases, or to apply unconventional cultivation method like line

sowing/ different planting density to avoid some kind of diseases. These cases show that FAs become capable to suggest appropriate and relevant measures for farmers to solve their problem by carefully examining their situations, and that they have utilized their improved knowledge and techniques obtained through the training.

The overall goal of the Project, "Appropriate knowledge and skills to improve agricultural productivity are extended to farmers" could be achieved through continuous extension activities to be conducted by the trained FAs, who could fully utilize the knowledges and skills obtained from the Project activities through the actual extension activities, such as FW2 and action plan activities. For those FAs to continue their "extension activities" and to achieve the overall goal of the Project, supports from KP-DoAE and District DoAE are deemed essential and inevitable. During Follow-Up Workshop (FUWS), each of the trained FAs formulated 3 action plan activities which are their extension activity plans after the training, and support to realize the conduct of those planned activities could become a small but important step for FAs. To conduct large-scale events such as field day and agriculture show by inviting more than 100 farmers at once are one of the efficient methods of extension activities as they could target a big number of farmers. However, such large-scale event also has its limitation, as a big number of farmers with different scales and experiences of farming may come from various places with different area characteristics, it would become difficult to disseminate "production techniques" which the farmers could surely apply. On the contrary, such types of extension activities as those conducted by FAs through FW2 and Action Plan Activities could target around 5 to 20 farmers at one go, thus could allow farmers to acquire hands-on techniques which they could apply at their field and get good results. Such small-scale type of extension activities may require small amount of activity cost such as transportation cost, i.e., fuel for motor cycle, which has been one of the biggest constraints, and refreshment cost, as has been raise by the FAs during FUWS.

To conduct these small-scale type of extension activities, the Project estimated that the average cost could be around PKR. 1,000 per activity. The actual cost would vary depending on the venue of the activity and how far the FA has to travel, but the figure is calculated based on the operation cost of M&E Officers of the Project for them to accompany and support the FAs to conduct their FWs. Against PKR. 1,000 to be covered by District DoAE, there should be considerable returns expected, as it could result in improvement of farmers' production as they could learn appropriate technologies which they could apply. Out of 750 Action Plan Activities which were formulated by FAs trained by the Project, 264 activities have already been conducted and 486 Action Plan Activities are remaining. To realize these 486 Action Plan Activities, it could be estimated that around PKR 500,000 is required, out of which 3,300 or more farmers would be benefited. The results of the follow-up of FW2 have implied that 90% of those farmers who participated in FW2 adopted the disseminated technologies, and 100% of those farmers who applied were satisfied with the good results derived from technologies disseminated. Therefore, KP-DoAE is strongly requested to examine and establish any mechanism to provide these supports, which may be small in amount yet essential for effective extension activities.

Recommendation C-2: Monitoring Extension Activities

Implementation of the Field Works and action plan activities by the training participated FAs were monitored by the M&E Officers employed by the Project. The monitoring activities brought useful information, such as usefulness of conducted extension activity, responses from farmers, and areas which could be further

improved. Moreover, FAs also raised their voices that the monitoring by the M&E Officers, who accompanied all the FWs conducted by FAs, did motivate and encourage FAs to carry out their action plan actively. The Project conducted very detailed monitoring by employing the M&E Officers under the Project and could obtain very useful data by analysis of gathered information as presented in Appendix 6-5, however, KP-DoAE and District DoAE alone could also gather similar data which could be useful to understand their area and to plan strategically for the future activities as also suggested in Appendix 6-5. The extension activities by the FAs could be monitored by utilizing FW2 formats and could be processed in the following procedure; 1) implement action plan activity (or field extension activity) by FAs, 2) FAs to submitting activity reports (FW2 format) to District, and 3) District enter necessary data based on submitted reports and provide feedback to FA as well as analyzing the data to understand the field situation and to plan for further activities. These procedures could be tried out and streamlined by KP-DoAE in order to carry out the effective monitoring activities. Furthermore, the monitoring methodology which the Project undertook could be applicable to the situation where operation by remote control is unavoidably necessary due to security reasons.

Appendix

Appendix

Appendix 1: PDM (Version 0, Version 1)

Appendix 2: Work Flowchart

Appendix 3: Detail Plan of Operation

Appendix 4: Japanese Expert Dispatch Schedule

Appendix 5: Joint Coordination Committee Meeting Minutes of Meeting

Appendix 6: Other Activities

1) CUDBAS Workshop Result (February 2015)
2) List of Equipment for API-NARC
3) Example of Good Practices of Extension Activities by Trained FAs
4) Standard Curriculum Examples : AO Group 3, FA Group 10 (Session1), and FA Group 10 (Session 2)
5) Monitoring Field Activities
6) Result of Field Works in FA Training
7) List of Equipment for KP Province Model Farm Service Centre
8) Result of Follow-Up Workshop
9) Learning from Study Visit to Gilgit-Baltistan by the Training Participants

Appendix 1: PDM

Annex 1

Project Design Matrix (PDM)

Project Title: Capacity Development of Agriculture Extension Services in KP Province
Project Period: 3 years
Project Site: National Agriculture Research Centre (NARC), Islamabad
Target Beneficiaries (Direct): Extension staff of Directorate of Agriculture Extension in KP, NARC
Target Beneficiaries (Indirect): Farmers in KP Province

Narrative Summary	Objectively Verifiable Indicators	Means of Verifications	Important Assumptions	Achievement	Remarks
Overall goal: The appropriate knowledge and skills for agricultural productivity are extended to farmers	Number of farmers attended in field activities	Annual report from KP	- The security condition in KP does not further deteriorate		
Project purpose: Agricultural knowledge and extension skills of extension service staff in KP are improved	1. Number of extension service staff who are certified by the project 2. Number of field activities conducted by field assistants	KP official records /NARC report	- Leadership and commitment of NARC and Directorate of Agriculture Extension in KP towards project framework remains consistent throughout the project		
Outputs: 1. Demand-based training curricula for capacity development of agriculture extension staff (Agricultural Officers and Field Assistants) are developed by NARC 2. Agricultural Officers obtain necessary extension activities and monitoring skills by training in NARC 3. Field Assistants obtain necessary knowledge for extension service activities by training in NARC 4. Field implementation of extension activities and monitoring in KP are strengthened	1-1 Training curricula developed by NARC 1-2. Satisfaction of trainees 2 Number and percentage of Agricultural officers who are certified by the project 3 Number and percentage of field assistants who are certified by the project 4 Feedback report from local coordinator	Submission/completion report by NARC Certificates Certificates	- There is no change in policies and decisions of extension service in supporting and collaborating with the project implementation - trainees can spare enough time for the training -trainees contribute proactively to the project implementation		

Activities:	Inputs		
	Japanese side	Pakistani side	
Output 1: 1-1. A working group composed of trainers of NARC and Directorate of Agriculture Extension in KP will be formed to be jointly in charge of the curricula development/customization 1-2. Review and Evaluate extension service in KP 1-3. Starting workshop for input from various experts 1-4. Draft curricula in accordance with discussion in workshop 1-5. Mid-workshop for input from extension staff, farmers from KP 1-6. Customize curricula for training extension service staff (Agricultural Officers, Field Assistants) according to their role 1-7. Review the draft in the working group and finalize curricula for Agricultural Officers and Field Assistants 1-8. Prepare training material and install necessary equipment for training **Output 2:** 2-1. Conduct training/consultation for Agricultural Officers at NARC 2-2. Make necessary adjustment for training curricula if needed 2-3. Monitoring field activities in KP **Output 3:** 3-1. Conduct training for Field Assistants at NARC 3-2. Make necessary adjustment for training curricula if needed 3-3. Conduct field activities to farmers in KP **Output 4:** 4-1. Install necessary equipment in Model Farm Service Center in KP for implementation. 4-2. Local coordinator assist monitoring field implementation with Agriculture Officers in KP 4-3 Local coordinator assist field implementation by Field Assistants in KP 4-4 Feedback from local coordinator to Project team at NARC	• Assignment of Japanese Expert at NARC • Assignment of Local coordinator(s) in KP • Necessary equipment to organize training at NARC • Necessary equipment to organize extension service at Model Farm Service Centers in KP	NARC • Assignment of the sufficient number of project counterparts (project manager, trainers/instructors, support staff) • Salaries and other allowances (if any) for Government staff to be assigned as counterparts • Custom clearance, storage, domestic transportation and installation expense for equipment • Operational and maintenance expenses for the equipment, • Other necessary local expenses of the project • Provide training facilities, available equipment, including utilities and other contingencies for the training and field activities • Provide necessary matter for JICA expert such as security arrangement, suitable office space, including furniture, utilities and telephone line during the project period • Issue certificates to trainees who have successfully completed the course. • Submit course reports to JICA • Coordinate any matter related to the Course. DOAE • Assignment of the sufficient number of project counterparts (focal person, support staff) • Select extension service staff for the training at NARC at appropriate timing. • Secure sufficient budget for implementing field activities (workshop, seminar, field visit, field day, farmers' field school, etc.) by the agriculture extension staff to be trained at NARC and monitoring during the project period. • Custom clearance, storage, domestic transportation and installation expense for equipment. • Operational and maintenance expenses for the equipment, • Other necessary local expenses of the project	- NARC and Directorate of KP will not change its policy and plan to collaborate with the project to improve extension service **Pre-conditions:** - There will be no significant incidents (e.g. natural disaster, a large scale of military operations, etc.) in KP province which may hinder the project implementation **<Issues and countermeasures>**

MINUTES OF MEETINGS
ON
AMENDMENT
ON
RECORD OF DISCUSSIONS

ON

THE PROJECT FOR
CAPACITY DEVELPOMENT OF AGRICULTURE EXTENSION SERVICES IN KHYBER PAKHTUNHWA PROVINCE

AGREED UPON BETWEEN

THE AUTHORITIES CONCERNED OF
THE ISLAMIC REPUBLIC OF PAKISTAN

AND

JAPAN INTERNATIONAL COOPERATION AGENCY

Islamabad, 25 April 2016

Yasuhiro Tojo
Chief Representative
Pakistan Office
Japan International Cooperation Agency

Muhammad Azeem Khan
Director General
National Agricultural Research Centre
Government of Islamic Republic of Pakistan

Akira Koto
Leader of the JICA Expert Team
for Capacity Development of
Agriculture Extension Services in
Khyber Pakhtunkhwa Province

Iqbal Hussain
Director General
Directorate of Agriculture Extension
Agriculture, Livestock & Cooperation Department
Government of Khyber Pakhtunkhwa

Japan International Cooperation Agency (hereinafter referred to as "JICA") held a series of discussion with the authorities concerned of the Islamic Republic of Pakistan (hereinafter referred to as "GOP") including National Agricultural Research Centre (hereinafter referred to as "NARC"), Directorate of Agriculture Extension, Agriculture, Livestock & Cooperation Department, Government of Khyber Pakhtunkhwa (hereinafter referred to as "DOAE") regarding an amendment of the Record of Discussion (hereinafter referred to as "R/D") on the Project for Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province (hereinafter referred to as "the Project") signed on September 3, 2014.

As a result of the discussion, both sides agreed the matters referred to in the document attached hereto.

THE ATTACHED DOCUMENT

I. Amendment of R/D

Annex 1 of the Appendix 1 of the R/D: Project Design Matrix (PDM)

Original PDM will be revised as shown in the Appendix.

II. Others

All matters other than mentioned above will be treated in the same manner as prescribed in the Articles of R/D.

END

Appendix: Revised Project Design Matrix (PDM)

Appendix

Proposed Revision of Project Design Matrix (PDM)

Version 1 Date: April 25, 2016

PROJECT TITLE: Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province (KP)

PROJECT PERIOD: 3 years

IMPLEMENTING AGENCIES: National Agriculture Research Centre (NARC), Directorate of Agriculture Extension (DOAE) in KP

TARGET AREA: Khybar Pakhtunkhwa Province (KP)

TARGET BENEFICIARIES (DIRECT): Extension Staff of DOAE in KP, NARC

TARGET BENEFICIARIES (INDIRECT): Farmers in KP

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Appropriate knowledge and skills to improve agricultural productivity are extended to farmers.	1. At least 15,000 farmers (*Note 1) are extended with new knowledge and skills on agricultural production.	1. Annual report of DOAE and hearing from the ex-participants	
Project Purpose Agricultural knowledge and extension skills of extension service staff in KP are improved.	1. A total of 350 extension service staff are trained and certified by the end of the Project. 2. At least 400 dissemination activities are conducted to deliver agricultural knowledge and/or production techniques to farmers by the trained Field Assistants (FAs) by the end of the Project.	1. Project Progress Report, API/NARC Certificate record 2. Field work reports by the FAs and by M&E officers of the Project	Necessary supportive measures and resources are provided to extension service staff to carry out field activities for farmers
Outputs 1. Demand-based training curricula for capacity development of agriculture extension staff, i.e. Agricultural Officers (AOs) and Field Assistants (FAs), are developed	1. Training curricula are developed according to the requirement of AOs and FAs. 2. At least 80% of the training participants evaluate the curricula as useful for their extension services.	1. Project Progress Report 2. Results of training evaluation by participants	- The extension service staff who are trained by the Project continue their services in KP. - Training participants proactively contribute to the project implementation.
2. AOs obtain necessary skills to guide, supervise and monitor the extension activities through training	1. At least 70% of the trained AOs increase the scores of post-tests from the scores of pre-tests. 2. At least 80% of the trained AOs evaluate their knowledge and skills to guide and supervise the FAs as improved through the training	1. Project Progress Report 2. Results of evaluation by participants.	
3. FAs obtain necessary knowledge and skills to carry out extension service activities through training	1. At least 70% of the trained FAs increase the scores of post-tests from the scores of pre-tests. 2. At least 80% of the trained FAs evaluate their extension skills as improved through the training.	1. Project Progress Report 2. Results of evaluation by participants.	
4. Field implementation of extension activities and monitoring in KP are strengthened.	1. At least 80% of the trained FAs conduct field extension activities for farmers by utilizing their learning from the training. 2. At least 50% of the field extension activities by the FAs are monitored / supervised by relevant personnel.	1. Field work reports by the FAs and by M&E officers of the Project 2. Field work reports by the AOs and by M&E officers of the Project	

Activities	Inputs		
1-1 Form a working group composed of trainers of NARC and Directorate of Agriculture Extension in KP to jointly be in charge of curricula development and customization	Japanese side - Assignment of Japanese Experts at NARC - Assignment of Project staff in KP - Provision of necessary equipment to organize training at NARC - Provision of necessary equipment to organize extension services at Model Farm Service Centers in KP	Pakistani side NARC - Assignment of sufficient number of project counterparts (project manager, trainers/instructors, support staff) - Provision of custom clearance, storage, domestic transportation, installation, operational and maintenance expenses for equipment - Provision of training facilities, available equipment including utilities and other contingencies for training and field activities - Other necessary local expenses of the Project DOAE, KP - Assignment of sufficient number of project counterparts (focal person, support staff) - Provision of sufficient budget for implementation of field activities (workshop, seminar, field visit, field day, farmers' field school, etc.) by the agriculture extension staff to be training at NARC and monitoring during the project period. - Provision of custom clearance, storage, domestic transportation, installation, operational and maintenance expenses for equipment - Provision of training facilities, available equipment - Other necessary local expenses of the Project	- There is no drastic change in the policies and plans of NARC and KP to collaborate with the Project to improve the extension services. **Pre-Condition** - There is no significant incident (e.g. natural disaster, a large scale military operations, etc.) in KP that may hinder the Project implementation.
1-2 Review and evaluate extension services in KP			
1-3 Organize workshop for inputs from various experts			
1-4 Draft curricula in accordance with discussion in the workshop			
1-5 Organize a workshop for inputs from extension staff and farmers from KP			
1-6 Customize the draft curricula for training extension service staff (AOs and FAs) according to their respective roles			
1-7 Review the draft in the working group and finalize the curricula for AOs and FAs			
1-8 Prepare training materials and install necessary equipment for training			
1-9 Review the curricula after each training to make necessary adjustments			
2-1 Conduct training for AOs at NARC			
2-2 Monitor the field activities in KP			
3-1 Conduct training for FAs at NARC			
3-2 Facilitate the FAs to conduct field activities for farmers in KP			
4-1 Install necessary equipment in Model Farm Service Centres in KP for implementation			
4-2 Monitor field implementation in coordination with AOs in KP			
4-3 Facilitate the field implementation by the FAs in KP			
4-4 Obtain feedback from field implementation			

Note 1: The figure is based on the assumption that each of the trained FAs would conduct extension activities with at least 20 farmers each year. The overall goal is to be evaluated at three (3) years after the completion of the Project, thus the target figure is calculated by the formula, i.e. 250 FAs x 20 farmers x 3 years.

Appendix 2: Work Flowchart

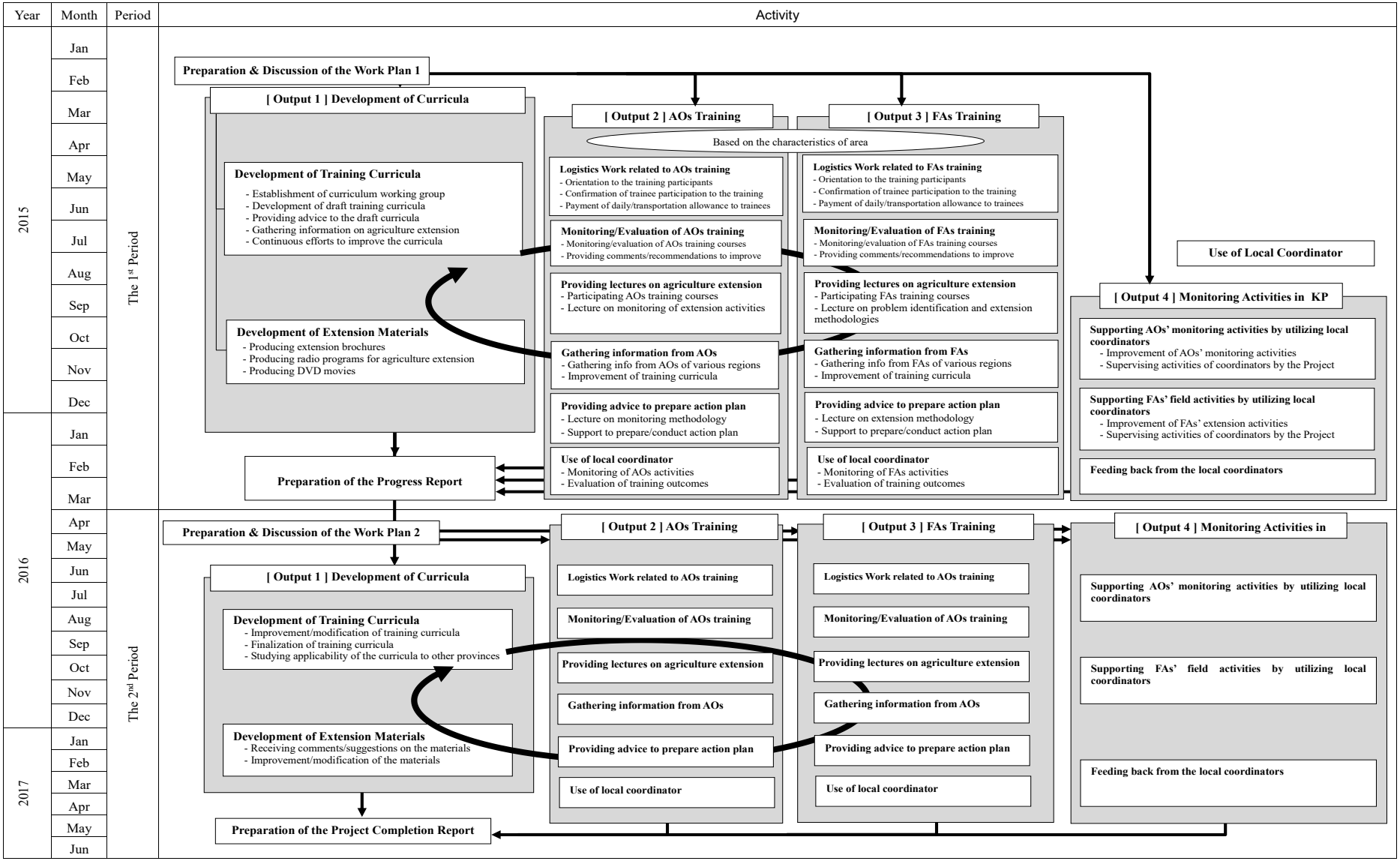


Figure 1: Work Flowchart of the Project Implementation – Plan (as of Work Plan Jan 2015)

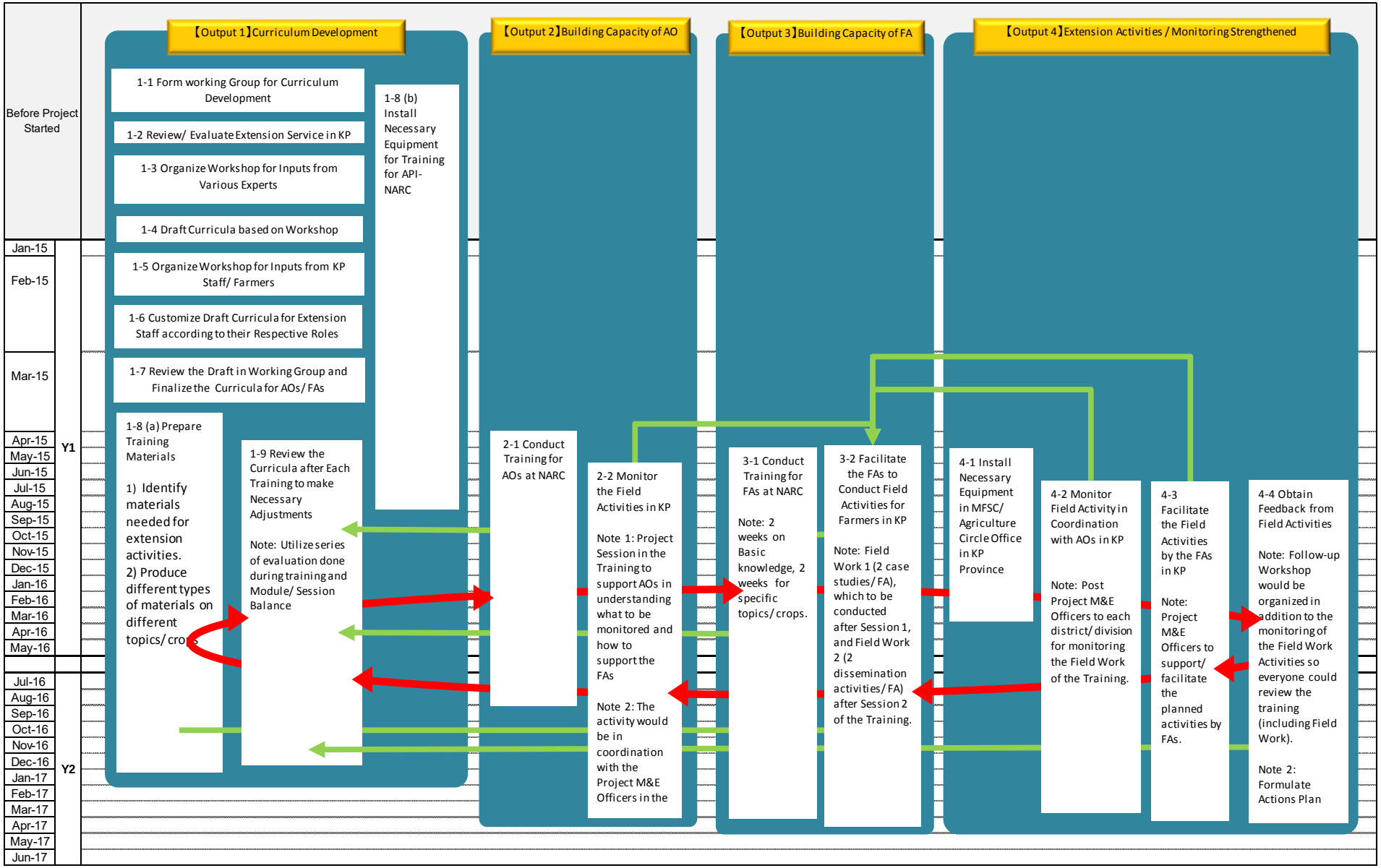


Figure 2: Work Flowchart of the Project Implementation - Actual

Appendix 3: Detail Plan of Operation

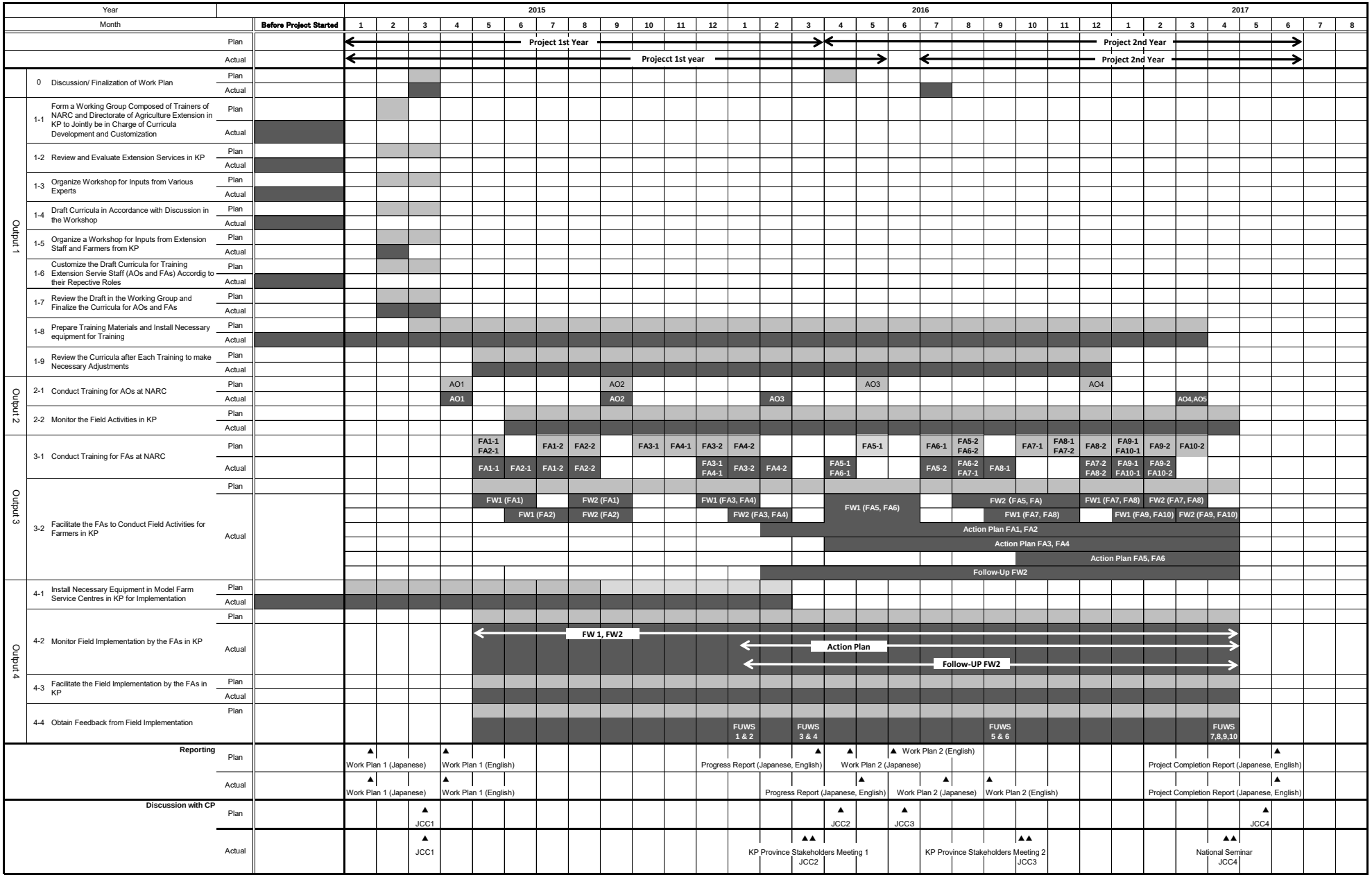


Figure: Plan of Operation - Plan (as of Wor Plan April 2015 and Actual -

Appendix 4: Japanese Expert Dispatch Schedule

Dispatch Schedule of Japanese Experts

The Project for Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province
Project Year 1

Name	Title		No of Trip	1st Year 2015 1	2	3	4	5	6	7	8	9	10	11	12	2016 1	2	3	4	5	Days	M/M
Akira KOTO	Team Leader / Training	Original Plan	3				75		90						90						255	8.50
		Revised Plan (1)	4	1/28		110		5/17			65				91			30			296	9.87
	Team Leader / Training 1	Revised Plan (2)	4	1/28		110		5/17			60		12		60						242	8.07
		Actual	4	1/28		(105)		5/17			7/22 (60)	9/19	10/9 (12)	10/20	11/14 (60)	1/12					242	8.07
Hiroyasu ONUMA	Training 2	Original Plan	0																		0	0.00
		Revised Plan (2)	1										(13)				54				54	1.80
		Revised Plan (3)	2										(13)				54		30		84	2.80
		Actual	2										(10/5-10/17)		(12/14)	1/17 (54)		3/10 3/25		4/23 (30)	84	2.80
Keiko ITAGAKI	Agriculture Extension	Original Plan	2					30						15							45	1.50
		Revised Plan (1)	3					5/9 30	6/7				16				21				67	2.23
		Revised Plan (2)	4					5/9 30	6/7				13			1/2-1/9 8	16				67	2.23
		Actual	4					5/9 (30)	6/7				10/10 (13)	10/22		1/2-1/9 (8)	2/24	3/10 (16)			67	2.23
Hiromi TAKENAKA	Project Coordinator/ Monitoring	Original Plan	3				60					60					60				180	6.00
		Revised Plan (1)	3			3/28 81			6/16				81				70				232	7.73
		Revised Plan (2)	3			3/28 81			6/16				79				72				232	7.73
		Revised Plan (3)	4			3/28 81			6/16				79				72		34		266	8.87
		Actual	3			3/28 (81)			6/16		8/31		(79)	11/17		1/2 (76)		3/17	4/4 (30)	5/3	266	8.87

		Days	M/M
Total	Original Plan	480	16.00
	Revised Plan (1)	595	19.83
	Revised Plan (2)	595	19.83
	Revised Plan (3)	659	21.97
	Actual	659	21.97

Dispatch Schedule of Japanese Experts

The Project for Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province
Project Year 2

Name	Title		No. of Trip	Project Year 2												Total Days	Total M/M
				2016						2017							
				7	8	9	10	11	12	1	2	3	4	5	6		
Akira KOTO	Team Leader/ Training 1	Plan	2			(15)							(30)			45	1.50
		Actual	2			9/19 (18) 10/6 (12) (6)						4/1	4/27 (27)			45	1.50
Hiroyasu ONUMA	Training 2	Plan	5	(30)		(23)			(30)		(38)		(30)			151	5.03
		Actual	5	7/16 8/16 (30)		9/19 10/9 (21)			11/26 12/31 (36)		1/28 2/28 (32)	4/1	4/30 (30)			151	5.03
Keiko ITAGAKI	Agriculture Extension	Plan	2			(25)							(35)			60	2.00
		Actual	2			9/14 10/8 (25)						3/27	4/30 (35)			60	2.00
Hiromi TAKENAKA	Project Coordinator/ Monitoring	Plan	2		(88)						(142)					230	7.67
		Actual	2	7/16 (88)			10/11		12/28 (142)				5/18			230	7.67
			Day	32	47	71	34	5	35	35	56	36	117	18			
			MM	1.07	1.57	2.36	1.13	0.17	1.17	1.17	1.86	1.20	3.90	0.60			
										Plan (Total)						486	16.20
										Actual (Total)						486	16.20

Appendix 5: Joint Coordination Committee (JCC) Meeting Minutes of the Meeting

MINUTES OF MEETING
OF
THE FIRST JOINT COORDINATION COMMITTEE MEETING
ON
JAPANESE TECHNICAL COOPERATION PROJECT
FOR
CAPACITY DEVELOPMENT OF AGRICULTURE EXTENSION SERVICES
IN KHYBER PAKHTUNKHWA PROVINCE

Islamabad, March 17, 2015

Dr. Iftikhar Ahmad
Chairman
Pakistan Agricultural Research Council
Government of Islamic Republic of Pakistan

Dr. Muhammad Azeem Khan
Director General
National Agricultural Research Centre
Government of Islamic Republic of Pakistan

Dr.Khalid Farooq
Director
Agriculture Poly-technique Institute
National Agricultural Research Centre
Government of Islamic Republic of Pakistan

Mr. Akira Koto
Leader of the JICA Expert Team
for Capacity Development of Agriculture
Extension Services in Khyber Pakhtunkhwa
Province

MAIN POINTS DISCUSSED

The first meeting of the Joint Coordination Committee (hereinafter referred to as JCC) of the Project for "Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province" was held under the chairmanship of Dr. Iftekhar Ahmed, Chairman PARC on Tuesday, March 17, 2015, at the executive committee room, NARC, Islamabad. The main points discussed and confirmed in the JCC meeting are summarized as below:

1. The agenda before the committee was as under:-

    i. Presentation/brief on the changes made so far previous
    ii. Review of overall progress
    iii. Presentation/brief on work plan of the project
    iv. Monitoring and evaluation of the project
    v. Any other item with the permission of the chair

2. A list of all the participants, scientists /officers' form PARC/NARC, JICA and DoAE, KP, is attached. (Annexure-1).

3. The meeting started with the recitation of the Holy Quran. After the welcoming remarks, the Chairman advised to brief the committee about the Project.

4. Dr. Khalid Farooq, Director API, briefed about the changes made so far in precious work plan, and overall progress of the Project.

5. Mr. Akira Koto, JICA Expert presented the modified work plan and the methodology for successful implementation of the Project. Further the content of curricula for AOs and FAs, schedule & timeline of the project and monitoring & evolution mechanism of the project were briefly presented.

6. Dr. Nadeem Amjad, Member Natural Resources Division (NRD), PARC suggested the participatory approach, in- field training and equality for better outcomes of the Project will be crucial for the trainees under the Project. In this regard he also suggested to arrange a special field-uniform for the participants, so that the feel they equality and motivation for working in the field.

7. Dr. Muhammad Azeem Khan, Director General, NARC, emphasized that the training should be experiential in nature rather than theoretical one, to be so, he has decided that the closely supervised the curricula development and training effectiveness.

8. Mr. Shahid Hussain, the representative of DoAE, KP suggested that for practical learning the training specific off-season nurseries may be developed during the practical training of the trainees.

9. After the detailed discussion between the committee members and other participants, the following suggestions and recommendation were given by the chairman:

   a. The training should be participatory and activity based, so that they are able to acquire hands-on knowledge and skills through the training activities. Therefore training approach should not be "learning by showing" but "learning by doing". Accordingly, training practices in the field shall be conducted by the trainees themselves.

   b. The training mechanism and field activities should be sophisticated, applicable and result oriented, for successful outcome of the Project.

   c. It is anticipated to establish a model of effective extension execution system before/ during the Project implementation. And monitoring and evaluation of Project activities is crucially important under the Project. It should be considered as a model/pilot project and the experiences, specially the monitoring mechanism will be highly valued so that the same may be adopted in the system and implemented in the future projects.

   d. The group activity of a training batch should further be split in five sub-groups and every sub-group should have a group leader, the same as a batch should have a leader for proper monitoring and performance reporting, as without the group dynamics the success could not be achieved.

   e. Instead of typical lecture/practical the training module should be converted in activity module and preferably the lectures/ briefing etc. should be in the field.

   f. Since the training schedule has been finalized, each of relevant institute of NARC should take the responsibility of preparing curricula, training /study material, chalking out appropriate training activates plan of their respective areas, and submit the same to API before the training commencement.

   g. It was suggested that providing uniform to each of trainee would encourage them to have team spirit, which would enhance group work more actively.

10. After these recommendations the committee approved the following:
    a. The Work Plan for the Project (Annexure 2)
    b. The Training Curricula for AOs and FAs (Annexure 3)

11. Mr. MotooTaki, Senior representative, JICA Pakistan office, appreciated the efforts of PARC/NARC, DoAE as well as the JICA expert for achievements of the project so far, and desired the successful implementation of the Project.

12. The meeting was concluded with vote of thanks.

Enclosures:

- A list of all the participants (Annexure-1).
- The PowerPoint presentation of Work Plan for the Project (Annexure 2)
- The Training Curricula for AOs and FAs (Annexure 3)

Distribution:

- Chairman PARC
- Senior Representative, JICA
- Director General, NARC
- JICA Expert
- Director General, DoAE, KP
- Member (NRD), PARC

Annexure-1

List of Participants

Committee Members:

Sr	Name	Designation & Department	Committee
1	Dr. Iftekhar Ahmad	Chairman PARC	Chairman
2	Mr. MotooTaki	Senior Representative, JICA	Member
3	Dr. Muhammad Azeem Khan	Director General, NARC	Member
4	Mr. Akira Koto	JICA Expert	Member
5	Dr. Khalid Farooq	Director, API	Member
6	Dr. Nadeem Amjad	Member, NRD, PARC	Observer/ Expert
7	Mr. Shahid Hassan	Agriculture Office	Representative, DoAE, KP

Participants:

Sr	Name	Designation & Department
1	Dr. MuahmmadZubair	Sr. Director, CSI, NARC
2	Dr, Khalid Mehmood	Sr. Director, HRI, NARC
3	Dr. Tariq Mehmood	Sr. Director DPEP, NARC
4	Mr. KosukeTomoshige	JICA, Representative
5	Dr. PervizKhaliq	Director PRMC, NARC
6	Mr. Yousuf Khan Marri	Program Leader (HRD), API, NARC

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MINUTES OF MEETING
OF
THE SECOND JOINT COORDINATION COMMITTEE MEETING
ON
JAPANESE TECHNICAL COOPERATION PROJECT
FOR
CAPACITY DEVELOPMENT OF AGRICULTURE EXTENSION SERVICES
IN KHYBER PAKHTUNKHWA PROVINCE

Islamabad, March 9, 2016

Dr. Nadeem Amjad
Chairman
Pakistan Agricultural Research Council
Government of Islamic Republic of Pakistan

Dr. Muhammad Azeem Khan
Director General
National Agricultural Research Centre
Government of Islamic Republic of Pakistan

Dr. Khalid Farooq
Senior Director
Agriculture Poly-technique Institute
National Agricultural Research Centre
Government of Islamic Republic of Pakistan

Mr. Akira Koto
Leader of the JICA Expert Team
for Capacity Development of Agriculture
Extension Services in Khyber Pakhtunkhwa
Province

MAIN POINTS DISCUSSED

The second Joint Coordination Committee (JCC) meeting, of the Project for "Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province", hereafter will be referred as "the Project", was held under the chairmanship of Dr. Ghulam Mohammad Ali, Acting Director General Chairman, on behalf of Chairman Pakistan Agriculture Research Council (PARC), on 9th March 2016 at the Executive Committee Room, National Agriculture Research Centre (NARC), Islamabad.

1. The agenda of the meeting were as follows;
   i. Presentation on Project Framework/ Structure
   ii. Presentation on Achievement of the Project (January 2015 – March 2016)
   iii. Presentation on Activities and Schedule from April 2016 – May 2017
   iv. Comments/ Feedback from the Participants
   v. Reconfirmation of the Project Framework and Measurement

2. Participants of the meeting were scientists/officers' of PARC/NARC, Economic Affairs Division, Japan International Cooperation Agency (JICA), and Directorate of Agriculture Extension (DoAE), of Khyber Pakhtunkhwa Province (KP Province). The list of participants is attached as Annexure-1.

3. The meeting started with the recitation of the Holy Quran. After the welcoming remarks, the Chairman advised to brief the committee about the Project.

4. Dr. Khalid Farooq, Director of Agriculture Poly-technique Institute (API), briefed about framework and structure of the Project; overall goal, project objective, components and the structure of the training cycle. Further, he presented the progress and achievements of the Project on curriculum development.

5. Mr. Hiroyasu Onuma, JICA Project Team Expert, presented the achievement of the Project on training conducted, result of the training, result of the Field Work 1 and Field Work 2, materials development and others activities undertaken.

6. Ms Keiko Itagaki, JICA Project Team Expert, presented the findings and feedback from the trained participants at the time of Follow-up workshops conducted. She also presented planned activities and schedule from April 2016 to May 2017 (end of the Project).

7. After the presentation, Dr. Qazi Fayz-ud-Din, expressed his appreciation to the Project concerned stakeholders and have described some of the example of the changes which are taken place in KP Province. Those trained personnel increased their knowledge and are now sharing

their learning with the smallholder farmers in the field. They are also making use of their learning at the time of seed distribution to the farmers at the Model Farm Service Center (MFSC) and are also holding training for those concerned. The equipment provided to the Model Farm Service Centres and Agriculture Circle Offices are being fully utilized for various extension activities. Study visit to Gilgit-Baltistan has stimulated interest of those who participated and have come up with the Value Addition Program under Agriculture Development Program (ADP).

8. Mr. Motoo TAKI, Senior Representative of JICA Pakistan Office, appreciated the efforts of PARC/NARC, DoAE as well as the JICA expert team for the remarkable achievements gained during one year of the Project. He pointed out that he has been in-charge of several agriculture projects during his tenure in JICA, and is finding out that this is one of the most successful projects so far, from his personal point of view. He referred to the comment which Dr. Khalid gave that the Project is providing direct impact to the farmers in the field.

9. Dr. Ghulam Mohammed Ali, Acting Director General of NARC, congratulated the concerned stakeholders and expressed that PARC/ NARC are achieving their mission through this Project as it is contributing to the farmers in Pakistan. The Project is not just "training" but has different dimensions such as field works, follow-up of the field works, materials development and provision of equipment to enhance the result. As the technologies keep on changing, the farmers in the field need updated information and this Project is extending the information through training and other activities. The activities are all focused toward farmers' benefits and he extended his appreciation toward all the concerned stakeholders.

10. Mr. Mohammed Tahir, Deputy Secretary, Economic Affair Division, noted that Government of Pakistan and Japanese Government have been in cooperation since long time with loan, grant and technical cooperation projects on different sectors such as power, infrastructure, education, water and sanitation, health, and agriculture. Currently, there are sixteen JICA projects ongoing, including this Project. He was satisfied with the progress of the Project.

11. After the comments and feedback from the participants, the Project framework and the measurement were reconfirmed by the participants. Basically, there were no big changes and are in line with what are mentioned in PC-1 and Record of Discussion (RD) singed on September 2014. The wording and the measurement which were not precisely and explicitly expressed in PC-1 and RD were being clarified based on the Project progress and achievements made so far.

12. As there were no further clarification and questions raised by the participants, the followings were confirmed and agreed by the participants:
    a. Planned Activities and Schedule of the Project from April 2016 to May 2017
    b. Project Frameworks and Measurement (Annexure 3)

13. The meeting was ended with vote of thanks.

Enclosures:

- Annexure 1: List of Participants
- Annexure 2: The PowerPoint presentation on the Project Framework/ Structure, Achievement of the Project, and Activities/ Schedule from April 2016 to May 2017
- Annexure 3: Project Framework and Measurement

Distribution:

- Chairman PARC
- Deputy Secretary, Economic Affairs Division
- Senior Representative, JICA
- Director General, NARC
- Director General, DoAE, KP
- Member (NRD), PARC
- JICA Project Team

Annexure-1

List of Participants

Committee Members:

Sr	Name	Designation & Department	Committee
1	Dr. Ghulam Mohammad Ali	Deputy Director General, NARC, on behalf of Chairman PARC	Chairman
2	Mr. Muhammad Tahir	Deputy Secretary, Economic Affairs Division	Member
3	Mr. Motoo Taki	Senior Representative, JICA	Member
4	Dr. Tariq Mehmood	Deputy Director General DPEP, NARC, on behalf of Director General NARC	Member
5	Dr. Qazi Fayaz-ud-Din	Acting Director General, Directorate of Agriculture Extension (DoAE) of KP Province	Member
6	Dr. Khalid Farooq	Sr. Director, API	Member
7	Mr. Hiroyasu ONUMA	JICA Project Team, Expert	Member

Participants:

Sr	Name	Designation & Department
1	Dr. Abdul Ghafoor	Sr. Director, CSI, NARC
2	Mr. Shinji NAGASAWA	Representative, JICA
3	Mr. Abid Kamal	Director Model Farm Service Centre, Directorate of Agriculture Extension (DoAE) of KP Province
4	Mr. Abdul Majeed	API, NARC
5	Ms Keiko ITAGAKI	JICA Project Team, Expert
6	Ms Hiromi TAKENAKA	JICA Project Team, Expert
7	Mr. Azhar Hussain	Project Secretary/ Monitoring Coordinator

Islamic Republic of Pakistan
The Project for Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province

2nd Joint Coordinating Committee Meeting

9 March 2016

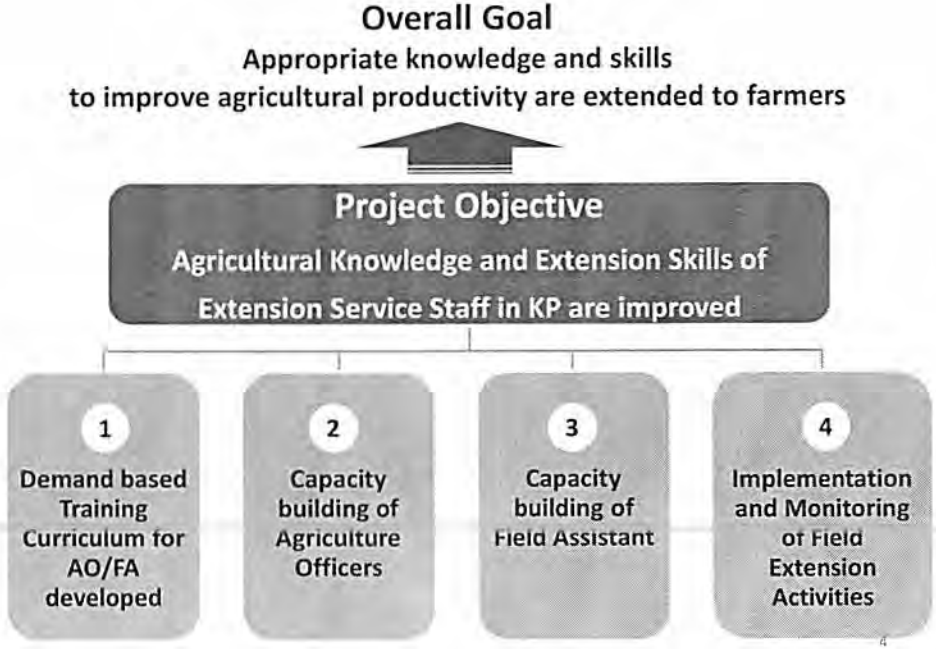
1. Project Title:
The Project for Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province

2. Project Duration:
Jan 2015 – June 2017 (2.5 Years)

3. Target Groups:
Extension Staff of Directorate of Agriculture Extension (DOAE) in KP and Farmers (100 AO & 250 FA)

4. Implementer (Actors):
- National Agriculture Research Centre (NARC)
- KP Province DOAE
- Japan International Cooperation Agency (JICA)

FRAMEWORK and STRUCTURE of the Project



Component 1:
Demand-based training curricula for capacity development of agriculture extension staff (Agriculture Officers and Field Assistants) are developed by NARC.

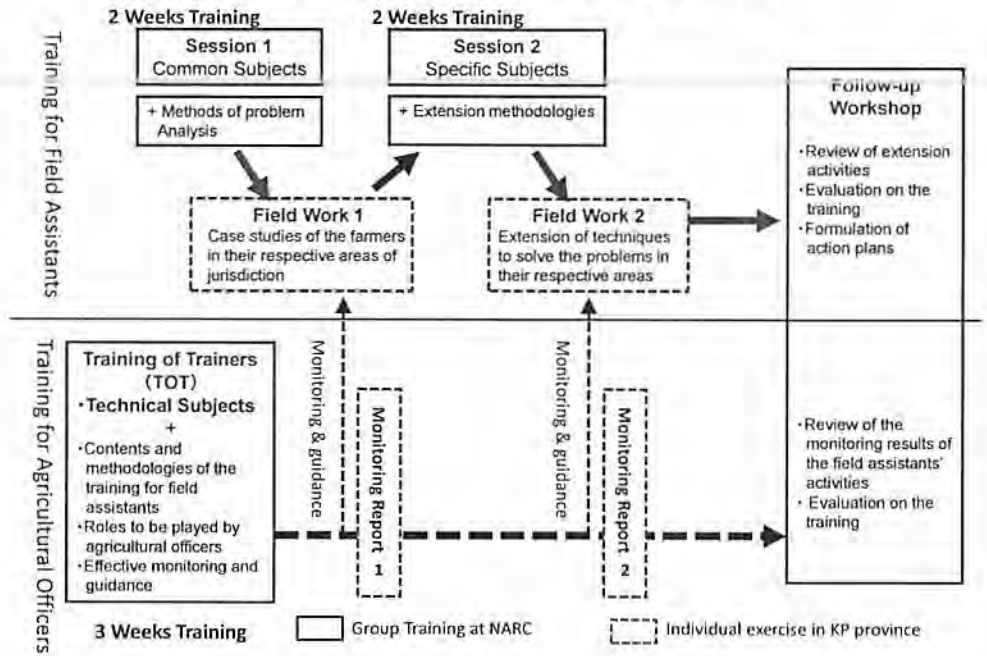
Component 2:
Agriculture Officers obtain necessary skills to guide, supervise and monitor the extension activities through training in NARC.

Component 3:
Field Assistants obtain necessary knowledge and skills to carry out extension service activities through training by NARC.

Component 4:
Field implementation of extension activities and monitoring in KP are strengthened.

ACHIEVEMENT of the PROJECT (Jan 2015 – Mar 2016)

STRUCTURE OF THE TRAINING



1. Curriculum Development (1)

1. Revised the Curriculum after Every Training based on Participants Evaluation

- Pre-Test and Post Test
- Daily Evaluation of Each Session
- Overall Training at the End of Training
- Review of Each Session at the End of Training

1. Curriculum Development (2)

2. Curriculum Modified

1) AO/ SMS Training (3 weeks/ groups)

Module 1 *	Crop Production
Module 2 *	Vegetable Production
Module 3 *	Fruits Production
Module 4 *	Others (e.g., Soil, Water, Value Addition)
Others	Facilitation Skill, Project management, Administrative Skills

Note: * includes from land preparation, plant protection, up to post harvesting

1. Curriculum Development (3)

2. Curriculum being Modified

2) FA Training (2 weeks x 2 times/ group)

Session 1 Basic Knowledge	Session 2 Specific/ Focused Knowledge
2 weeks Module 1: Crop Production Module 2: Vegetable Module 3: Fruits Module 4: Others (Soil, Water)	2 weeks Module 1: Crop Module 2: Vegetable Module 3: Fruits Module 4: Others (Facilitation Skills, Extension Support Materials Development, Value Addition)

Note: * Includes from land preparation, plant protection, up to post harvesting

PICTURE GALLERY

Lecture Hall

Computer Lab.

Agriculture Officers/Subject Matter Specialists (AOs/SMS)
Group-1

Field Assistants (Group-1)

Training Activities

Field Assistants (Group-2)

Training Activities

Agriculture Officers/Subject Matter Specialists (AOs/SMS) Group-2

Training Activities

Field Assistants (Group-3)

Training Activities

Field Assistants (Group-4)

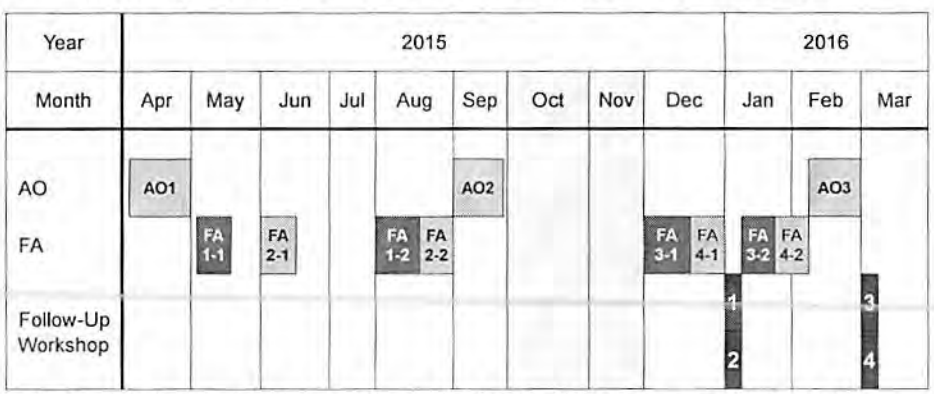
Training Activities

Agriculture Officers/Subject Matter Specialists (AOs/SMS) Group-3

Training Activities

2. Number of Training Conducted and Number of Trained AO/SMS & FA (1)

- Training for AO/SMS Conducted: **3** Groups = **73** Trained*
- Training for FA Conducted: **4** Groups = **99** Trained



Note: * Including 2 Instructors from ATI & 1 Staff from Bureau of Information

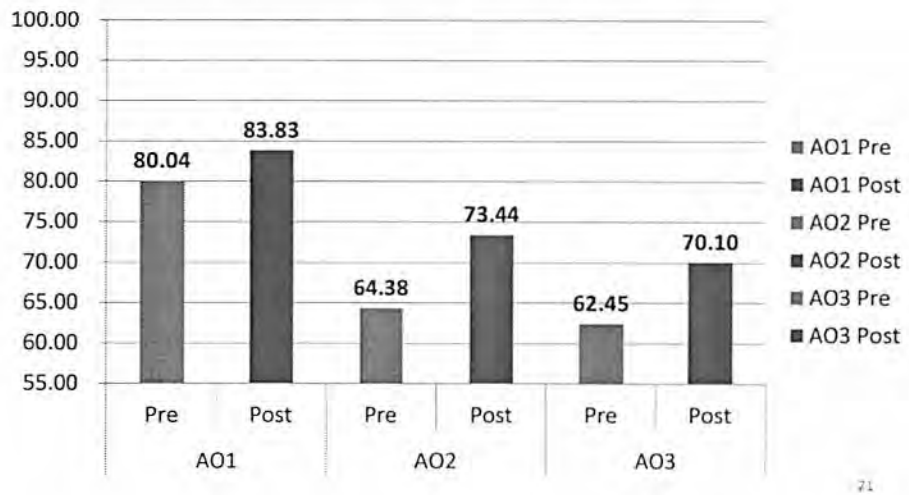
2. Number of Training Conducted and Number of Trained AO/SMS & FA (2)

Detail of Trained AO/ SMS/ FA per Division

Division	# of AO/SMS Trained	# of FA Trained
Hazara	19	39
Malakand	15	44
Peshawar	10	-
Mardan	9	16
Kohat	7	-
Bannu	2	-
D. I. Khan	6	-
DoAE (Peshawar)	3	-
Total	**73**	**99**

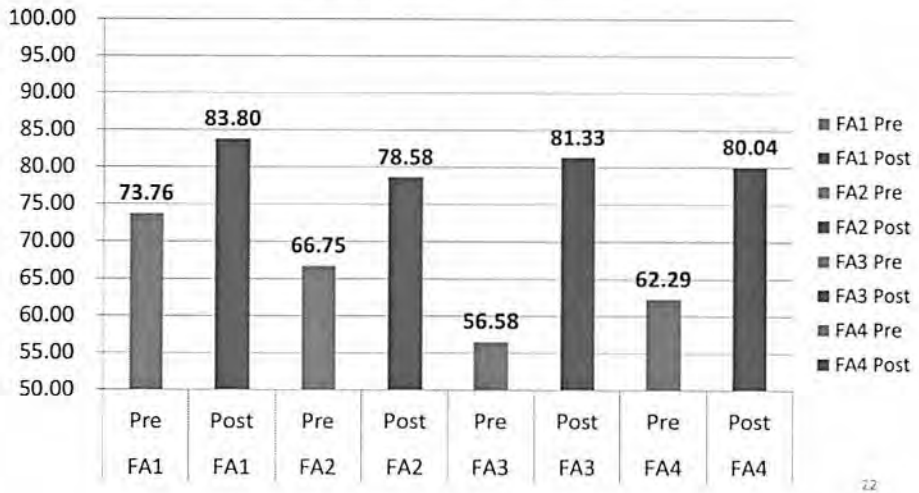
3. Result of the Training (1)

AO/SMS: Pre/Post Test Average



3. Result of the Training (1)

FA: Pre/Post Test Average



3. Result of the Training (1)

of Participants who Increased Score in Post Test

A: AO/SMS Training

Group	No. Increased Score	Max Increased Score
Group 1	6 participants	16 point
Group 2	22 participants	17.3 point
Group 3	21 participants	22 point

B: FA Training

Group	No. Increased Score	Max Increased Score
Group 1	20 participants	26.8 point
Group 2	22 participants	26 point
Group 3	24 participants	39 point
Group 4	24 participants	31.3 point

3. Result of the Training (1)

Overall Training Evaluation by the Participants

	AO1	AO2	AO3	FA1	FA2	FA3	FA4
Contents of the Training Course	3.7	3.9	4.1	4.1	4.3	4.0	4.0
Teaching Materials	3.5	4.0	4.1	4.3	4.5	4.1	4.3
Relationship with Other Trainees	4.3	4.3	4.2	4.5	4.5	4.7	4.2
Training Schedule	2.3	3.2	3.6	4.6	4.5	3.8	4.2
Training Facilities/ Training Room	4.4	4.4	4.4	4.8	4.5	4.2	4.8
Food, Residence/ Lodging	3.6	3.6	3.4	4.3	4.3	4.4	4.4
Usefulness of the Course	4.0	4.3	4.5	4.8	4.8	4.7	4.7
Overall Evaluation	3.8	4.4	4.3	4.9	4.8	4.5	4.7

Note: Max Point = 5, Min Point = 1

4. Result of Field Work 1 and Field Work 2 by FA (1)

A. Field Work 1 = Case Studies of Farmers Practice

1. Farmer's Profile
2. Crop Production Information & Production Activity Calendar
3. Technical Features of Crop Production by the Farmer
4. Measures taken by the Farmer to Overcome the Problem
5. Farmers' Findings from the Result of the Measures Taken

B. Field Work 2 = Dissemination Activities

1. **PLAN** Program of the Day & Necessary Materials
2. **SELECT** Select Farmers who are Suffering from the problems
3. **CONDUCT** Based on the Plan for Disseminatio n Activity
4. **REPORTING** Review the activity by FA, AO, and Project M&E Officers
5. **FOLLOW-UP** Conduct Follow-Up Visit to confirm the progress

4. Result of Field Work 1 and Field Work 2 by FA (2)

(Unit: Number of cases carried out by FAs)

Field Work carried out by 99 FAs	Total
Field Work 1 (Case Study)	292
Field Work 2 (Dissemination)	195
Total	**487**

(Unit: Number of cases carried out by FAs)

Extension Method of Dissemination Activities	Total
Individual Visit	20
Group Meeting	131
Field Visit	6
Field Day	18
Farmers Field School	4
Training	6
Others	10
Total	**195**

2,146 Farmers

Participated Dissemination Activities through FW2

4. Result of Field Work 1 and Field Work 2 by FA (3)

A: Target Crops

(Unit: No. of cases carried out by FAs)

Target Crops	FW1	FW2	Total
Wheat	79	57	136
Maize	56	29	85
Tomato	42	23	65
Potato	18	10	28
Onion	24	17	41
Apple	2	0	2
Peach	11	7	18
Citrus	7	7	14
Sugarcane	8	2	10
Tobacco	7	1	8
Others	38	42	80
Total	**292**	**195**	**487**

B: Target Themes

(Unit: No. of cases carried out by FAs)

Target Themes	FW1	FW2	Total
Disease	131	47	178
Insect Pest	64	39	103
Animal Pest	6	15	21
Weed	35	35	70
Yield	17	4	21
Cultivation	18	44	62
Input	14	0	14
Others	7	11	18
Total	**292**	**195**	**487**

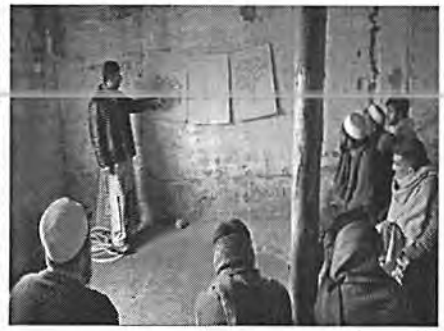
Field Work 1: Case Study

Field Work 2: Extension Activity

Sample Activity in Buner



Sample Activity in Mansehra

Sample Activity in Swabi



Other Activities on Weed



Other Activities on Nursery Raising

5. Materials Development

1. Wheat Seed Distribution (Supporting KP Province Program)
- Pamphlet on Cultivation (125,000 Copies)
- Pamphlet on Weed Control (125,000 Copies)

2. Identification of Around 80 Major Pest and Diseases
- 9 major crops (2 cereal crops, 3 vegetable crops and 4 fruit crops)
- Easy to Carry Field Note for AO/ FA

4. Project Newsletter

Vol. 1 – Vol.3, Vol.4 & Vol.5 under development

5. Reference Book for AO/ FA in Urdu (1
- Volume 1: Cereals Crops

6. Others

1. Provision of Training Equipment to API

2. Provision of Multimedia/ PC to KP Province
- Model Farm Service Centre

3. Provision of Pruning Kit to KP Province
- 77 sets
- Model Farm Service Centre and Agriculture Circle Office

4. Gilgit- Baltistan Study Visit
- Study visit to JICA Technical Cooperation Project "The Project for Promotion of Value Added Fruit Products in Gilgit-Baltistan"
- 13 Participants (3 SMS, 3 AO, 6 FA)
- Understand and learn from the farmers in Gilgit-Baltistan on cultivation techniques, post-harvest techniques and marketing.

7. Follow-Up Workshop (1)

General Information

Dates:

Follow-up Workshop 1: January 4, 2016
Follow-up Workshop 2: January 7, 2016
Follow-up Workshop 3: February 29, 2016
Follow-up Workshop 4: March 3, 2016

Participants:

	FU-WS 1	FU-WS 2	FU-WS 3	FU-WS 4	Total
AO &SMS	9	16	8	10	43
FA	21	25	25	24	95

7. Follow-Up Workshop (2)

Review of the Training

Result of the Training

- Enhancement of technical knowledge and new technologies
- Improvement of communication / facilitation skills
- Building up of relationship with NARC and researchers
- Better linkage among the extension staff, especially among those from different districts
- Increase of self confidence in carrying out extension activities

Challenges in the Field Work

- Insufficient provision of the resource for the field work (transport, refreshments, handouts for farmers, etc)
- Voluminous workload of field staff
- Aid dependency / over expectation among the farmers
- Farmers' reluctance in adopting new technologies

ACTIVITIES and SCHEDULE from April 2016 – May 2017

7. Follow-Up Workshop (3)

Action Plan

At the Follow-up Workshop, the FAs are requested to formulate their own action plans, which are to ensure continuous dissemination of their learning to farmers in their respective areas of jurisdiction.

Crop-wise Distribution of the Action Plans (N=280)

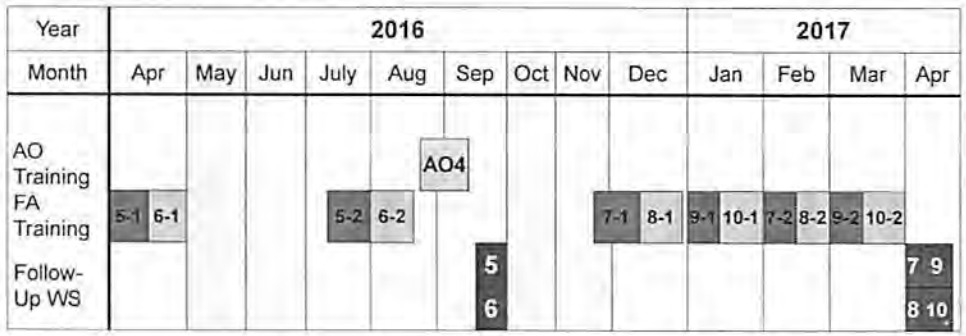
- Technical Dissemination on Cereal Crops: 147 Activities
- Technical Dissemination on Vegetables: 86 Activities
- Technical Dissemination on Fruit Crops: 42 Activities
- Technical Dissemination on others: 5 Activities

Crop	Dissemination Activities	Crop	Dissemination Activities	Crop	Dissemination Activities
Apple	3	Maize	73	Squash	1
Apricot	2	Okra	2	Sugarcane	1
Bitter Gourd	6	Onions	19	Tomato	42
Cabbage	1	Orange	4	Walnut	3
Citrus	6	Orchard	6	Watermelon	2
Cut Flower	1	Peach	12	Wheat	72
Garlic	1	Potato	14	Several crops	3
Guava	4	Rice	2		

Training Schedule

- April 2016 to May 2017 -

- AO Group 4 Training (25 AOs/SMSs)
- FA Group 5 – 10 Training (150 FAs)
- Follow-Up Workshop 5 – 10



Detail of Training Schedule

Tentative Schedule of Training

AO4: Aug. 15 - Sep. 2, 2016	
FA5-1: Mar. 28 - Apr. 8, 2016	FA5-2: Jul. 18 - 29, 2016
FA6-1: Apr. 11 - 22, 2016	FA6-2: Aug. 1 - 12, 2016
FA7-1: Nov. 28 - Dec. 10, 2016	FA7-2: Jan. 29 - Feb. 10, 2017
FA8-1: Dec. 12 - 24, 2016	FA8-2: Feb 13 - 24, 2017
FA9-1: Jan. 2 -13, 2017	FA9-2: Feb. 27 - Mar. 10, 2017
FA10-1: Jan. 16 - 27, 2017	FA10-2: Mar. 13 - 24, 2017

Tentative Schedule of Follow-up Workshop

FU-WS 5: Sep. 22, 2016	FU-WS 7: Apr. 4, 2017	FU-WS 9: Apr. 11, 2017
FU-WS 6: Sep. 27, 2016	FU-WS 8: Apr. 7, 2017	FU-WS 10: Apr. 14, 2017

Target Divisions and Districts

Malakand Division: Buner, Chitral
Mardan Division: Mardan, Swabi
Peshawar Division: Charsadda, Nowshera, Peshawar
Kohat Division: Hangu, Karak, Kohat
Bannu Division: Bannu, Lakki Marwat
Dera Ismail Khan Division: Dera Ismail Khan, Tank

Materials Development

1. **Wheat Seed Distribution** (Supporting KP Province Program)
   - Pamphlet on Harvesting/ Post Harvesting
2. **Fruit Seedling Distribution** (Supporting KP Province Program)
   - Pamphlet on Cultivation
   - Pamphlet on Pruning Techniques
   - Pamphlet on Insect/ Pest Management
   - Pamphlet on Harvesting/ Post Harvesting
3. **Treatment on 20 Major Pest and Disease** (Pamphlet)
4. **Project Newsletter**
5. **Audio Visual Aid**
   - DVD on Fruit Fly Control
   - DVD on Pruning
6. **Reference Book for AO/ FA in Urdu**
   - Volume 2: Vegetable Crops
   - Volume 3: Fruits Crops
   - Volume 4: Other Subjects

Follow-up Activities

1. Follow-up Visits of the Field Work 2

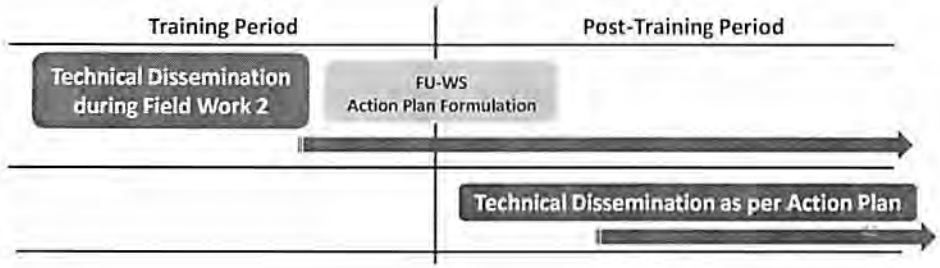
Purpose: Confirmation on the degree of application of technologies by the farmers who had been disseminated with technologies by FAs during Field Work 2.

Timing: A few months after the dissemination activities (after the specific season of the crop and timing of technology application).

2Follow up on the Action Plan implementation

Purpose: Confirmation on the execution of planned activities by the FAs

Timing: At the time of planned dissemination in accordance with the respective action by FAs



Thank You Very Much!

Annexure-3

FRAMEWORK OF THE PROJECT

PROJECT TITLE: Capacity Development of Agriculture Extension Services in KP Province

PROJECT PERIOD: Three (3) years

IMPLEMENTING AGENCIES:

National Agricultural Research Centre (NARC), Directorate of Agriculture Extension (DOAE) in KP

TARGET AREA: khybar Pakhtunkhwa Province (KP)

TARGET BENEFICIARIES (DIRECT): Extension Staff of DOAE in KP, NARC

TARGET BENEFICIARIES (INDIRECT): Farmers in KP

OVERALL GOAL:

Appropriate knowledge and skills to improve agricultural productivity are extended to farmers.

<Expected Achievements>

At least 15,000 farmers are extended with new knowledge and skills on agricultural production by the trained extension service staff.

PROJECT PURPOSE:

Agricultural knowledge and extension skills of extension service staff in KP are improved.

<Expected Achievements>

1. A total of 350 extension service staff are trained and certified by the end of the Project.
2. At least 400 dissemination activities are conducted to deliver agricultural knowledge and/or production techniques to farmers by the trained Field Assistants (FAs) by the end of the Project.

COMPONENTS, ACTIVITIES AND CONFIRMATION OF THE ACHIEVEMENTS:

Component 1. Demand-based training curricula for capacity development of agriculture extension staff, i.e. Agricultural Officers (AOs) and Field Assistants (FAs), are developed.

<Activities for Component 1>

1-1 Form a working group composed of trainers of NARC and Directorate of Agriculture Extension in KP to jointly be in charge of curricula development and customization

1-2 Review and evaluate extension services in KP

1-3 Organize workshop for inputs from various experts

1-4 Draft curricula in accordance with discussion in the workshop

1-5 Organize a workshop for inputs from extension staff and farmers from KP

1-6 Customize the draft curricula for training extension service staff (AOs and FAs) according to their

respective roles

1-7 Review the draft in the working group and finalize the curricula for AOs and FAs

1-8 Prepare training materials and install necessary equipment for training

1-9 Review the curricula after each training to make necessary adjustments

<Expected Achievements>

1. Training curricula are developed according to the requirement of AOs and FAs.
2. At least 80% of the training participants evaluate the curricula as useful for their extension services.

Component 2. AOs obtain necessary skills to guide, supervise and monitor the extension activities through training.

<Activities for Component 2>

2-1 Conduct training for AOs at NARC

2-2 Monitor the field activities in KP

<Expected Achievements>

1. At least 70% of the trained AOs increase the scores of post-tests from the scores of pre-tests.
2. At least 80% of the trained AOs evaluate their knowledge and skills to guide and supervise the FAs as improved through the training

Component 3. FAs obtain necessary knowledge and skills to carry out extension service activities through training.

<Activities for Component 3>

3-1 Conduct training for FAs at NARC

3-2 Facilitate the FAs to conduct field activities for farmers in KP

<Expected Achievements>

1. At least 70% of the trained FAs increase the scores of post-tests from the scores of pre-tests.
2. At least 80% of the trained FAs evaluate their extension skills as improved through the training.

Component 4. Field implementation of extension activities and monitoring in KP are strengthened.

<Activities for Component 4>

4-1 Install necessary equipment in Model Farm Service Centres in KP for implementation

4-2 Monitor field implementation in coordination with AOs in KP

4-3 Facilitate the field implementation by the FAs in KP

4-4 Obtain feedback from field implementation

<Expected Achievements>

1. At least 80% of the trained FAs conduct field extension activities for farmers by utilizing their learning from the training.
2. At least 50% of the field extension activities by the FAs are monitored / supervised by relevant personnel.

MINUTES OF MEETING
OF
THE THIRD JOINT COORDINATION COMMITTEE MEETING
ON
JAPANESE TECHNICAL COOPERATION PROJECT
FOR
CAPACITY DEVELOPMENT OF AGRICULTURE EXTENSION SERVICES
IN KHYBER PAKHTUNKHWA PROVINCE

Islamabad, 5 October 2016

Dr. Nadeem Amjad
Chairman
Pakistan Agricultural Research Council
Government of Islamic Republic of Pakistan

Dr. Muhammad Azeem Khan
Director General
National Agricultural Research Centre
Government of Islamic Republic of Pakistan

Dr. Khalid Farooq
Senior Director
Agriculture Poly-technique Institute
National Agricultural Research Centre
Government of Islamic Republic of Pakistan

Mr. Akira Koto
Leader of the JICA Expert Team
for Capacity Development of Agriculture
Extension Services in Khyber Pakhtunkhwa
Province

MAIN POINTS DISCUSSED

The third Joint Coordination Committee (JCC) meeting, of the Project for "Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province", hereafter referred as "the Project", was held under the chairmanship of Dr. Ghulam Mohammad Ali, Acting Director General, on behalf of Chairman Pakistan Agriculture Research Council (PARC), on 5 October 2016 at the Executive Committee Room, National Agriculture Research Centre (NARC), Islamabad.

1. The agenda of the meeting were as follows;
   i. Presentation on Project Framework/ Structure
   ii. Presentation on Achievement of the Project (January 2015 – September 2016)
   iii. Presentation on Activities and Schedule from October 2016 – May 2017
   iv. Comments/ Feedback from the Participants

2. Participants of the meeting were scientists/officers of PARC/NARC, Economic Affairs Division, Japan International Cooperation Agency (JICA), and Directorate of Agriculture Extension (DoAE) of Khyber Pakhtunkhwa Province (KP Province). The list of participants is attached as Annexure-1.

3. The meeting started with the recitation of the Holy Quran after the welcoming remarks.

4. Dr. Khalid Farooq, Director of Agriculture Poly-technique Institute (API), Mr. Akira Koto, JICA Project Team Leader, Mr. Hiroyasu Onuma and Ms. Keiko Itagaki, JICA Project Team Expert presented the Project framework/ structure, achievement of the Project (January 2015 – September 2016), and activities/ schedule from October 2016 – May 2017.

5. After the presentation, Mr. Muhammad Tahir, Deputy Secretary, Economic Affair Division, expressed his satisfaction that the Project is steadily making due progress and hoped that the Project would successfully achieve its target. He also extended his appreciation to the concerned partners, especially to NARC and KP Government. In addition, he noted that Government of Pakistan and Japanese Government have been in cooperation since long time with loan, grant and technical cooperation projects on different sectors, and hoped that this good relation would continue.

6. Mr. Arshad Abbasi, Program Officer of JICA Pakistan Office, expressed his appreciation to NARC for its support as well as KP Government to fully utilize the training opportunities under this Project for their extension officers.

7. Mr. Motoo Taki, Senior Representative of JICA Pakistan Office, appreciated the efforts of PARC/NARC, DoAE for the remarkable achievement of the Project. He has been involved

since the Project formulation and recalled that it took long time to start the Project. However, once the Project started, the activities have been running smoothly and are now presenting tangible results. So far, the Project completed the training for 70% of targeted Agriculture Officers (AO) and 60% of targeted Field Assistants (FA), and it looks promising to achieve the set target within the Project duration. He also noted that the Project is not only training the AO and FA, but has outreached around 4,000 farmers in KP Province through the field works within the Project training, which is considered as a big impact. Currently, there are 14 ongoing technical cooperation projects handled by JICA Pakistan Office, and this is one of the most successful projects. Another interesting finding from the presentation is the shift of areas of interests in FA's activities; from disease/ pest to cultivation techniques, which represents that the FAs are now not just tackling the disease/ pest, but understand the importance of cultivation techniques which could prevent these diseases / pests. Once farmers could realize good effects of the improved cultivation techniques, they would adopt them and all these changes could contribute to the productivity of agricultural production in KP province.

8. Mr. Abid Kamal, Deputy Director General of Department of Agriculture Extension (DoAE), KP Government, expressed his sincere appreciation to the concerned stakeholders of the Project for their technical and financial supports as the Project is really bringing the changes by building the capacities of KP Government staff. There are around 600 FAs in KP Province but the Project could cover only 250 FAs. As seeing the very positive impacts of the Project, he understands that this kind of training is effective thus feels that the KP Government now needs to consider how to provide such training for the remaining 350 FAs.

9. Dr. Anjum Munir, Director of DPEP, NARC, noted that the session for diseases to be re-examined whether it is structured in series of general knowledge, principle of disease control, and specific plant disease control, and increase the session duration by understanding the result of the field works of the Project.

10. Dr. Ghulam Mohammed Ali, Acting Director General of NARC, congratulated the concerned stakeholders on the Project achievements and expressed his appreciation to Government of Japan as the Project is contributing to the livelihood of rural farmers in KP Province. The Project is not just "training" but is "comprehensive" including various activities. The Project is also supporting the linkages of researchers and farmers, and through this training, the technologies are disseminated and has already reached good number of the farmers. PARC and NARC are having the mandates to enhance good coordination and linkages among the provinces, research institutions and universities, and this Project contributed for their achieving these mandate.

11. As there were no further clarification and questions raised by the participants, the planned activities and schedule of the Project from October 2016 to May 2016 were confirmed and agreed by the participants:

12. The meeting was ended with vote of thanks for the participants as well as the concerned stakeholders including the authorities and staff of NARC.

Enclosures:

- Annexure 1: List of Participants
- Annexure 2: The PowerPoint presentation on the Project Framework/ Structure, Achievement of the Project, and Activities/ Schedule from October 2016 to May 2017

Distribution:

- Chairman PARC
- Deputy Secretary, Economic Affairs Division
- Senior Representative, JICA
- Director General, NARC
- Director General, DoAE, KP
- Member (NRD), PARC
- JICA Project Team

Annexure-1

List of Participants

Committee Members:

Sr	Name	Designation & Department	Committee
1	Dr. Ghulam Mohammad Ali	Deputy Director General, NARC, on behalf of Chairman PARC	Chairman
2	Mr. Muhammad Tahir	Deputy Secretary, Economic Affairs Division	Member
3	Mr. Motoo Taki	Senior Representative, JICA Pakistan Office	Member
4	Mr. Abid Kamal	Acting Director General, Directorate of Agriculture Extension (DoAE) of KP Province	Member
5	Dr. Khalid Farooq	Sr. Director, API of NARC	Member
6	Mr. Akira Koto	JICA Project Team Leader	Member

Participants:

Sr	Name	Designation & Department
1	Dr. Anjum Munir	Director, DPEP, NARC
2	Dr. Khalid Mahmoud	Sr. Director, DHRD, NARC
3	Mr. Roshan Zada	Director, Outreach, NARC
4	Mr. M. Fiaz Joyia	Director, Scientific Information, NARC
5	Dr. Parvez Khalid	Director, PRMC, NARC
6	Dr. Abdul Ghafoor	Director, PGRI, NARC
7	Mr. Ken OKUMURA	Representative, JICA Pakistan Office
8	Mr. Arshad Abbassi	Program Officer, JICA Pakistan Office
9	Mr. Aamir Ilyas	API, NARC
10	Mr. Hiroyasu ONUMA	JICA Project Team, Expert
11	Ms Keiko ITAGAKI	JICA Project Team, Expert
12	Ms Hiromi TAKENAKA	JICA Project Team, Expert
13	Mr. Azhar Hussain	Project Secretary/ Monitoring Coordinator

Islamic Republic of Pakistan
The Project for Capacity Development of Agriculture Extension Services
in Khyber Pakhtunkhwa Province

3rd Joint Coordination Committee Meeting

5 October 2016

1. Project Title:
The Project for Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province

2. Project Duration:
Jan 2015 – June 2017 (2.5 Years)

3. Target Groups:
Extension Staff (100 AO & 250 FA)of Directorate of Agriculture Extension (DoAE) in KP and Farmers

4. Implementer (Actors):
- National Agriculture Research Centre (NARC)
- DoAE, KP Province
- Japan International Cooperation Agency (JICA)

A. FRAMEWORK and STRUCTURE of the Project

Overall Goal
Appropriate knowledge and skills to improve agricultural productivity are extended to farmers

Project Objective
Agricultural Knowledge and Extension Skills of Extension Service Staff in KP are improved

1. Demand based Training Curriculum for AO/FA developed
2. Capacity building of Agriculture Officers
3. Capacity building of Field Assistants
4. Implementation and Monitoring of Field Extension Activities

Component 1:
Demand-based training curricula for capacity development of agriculture extension staff (Agriculture Officers and Field Assistants) are developed by NARC.

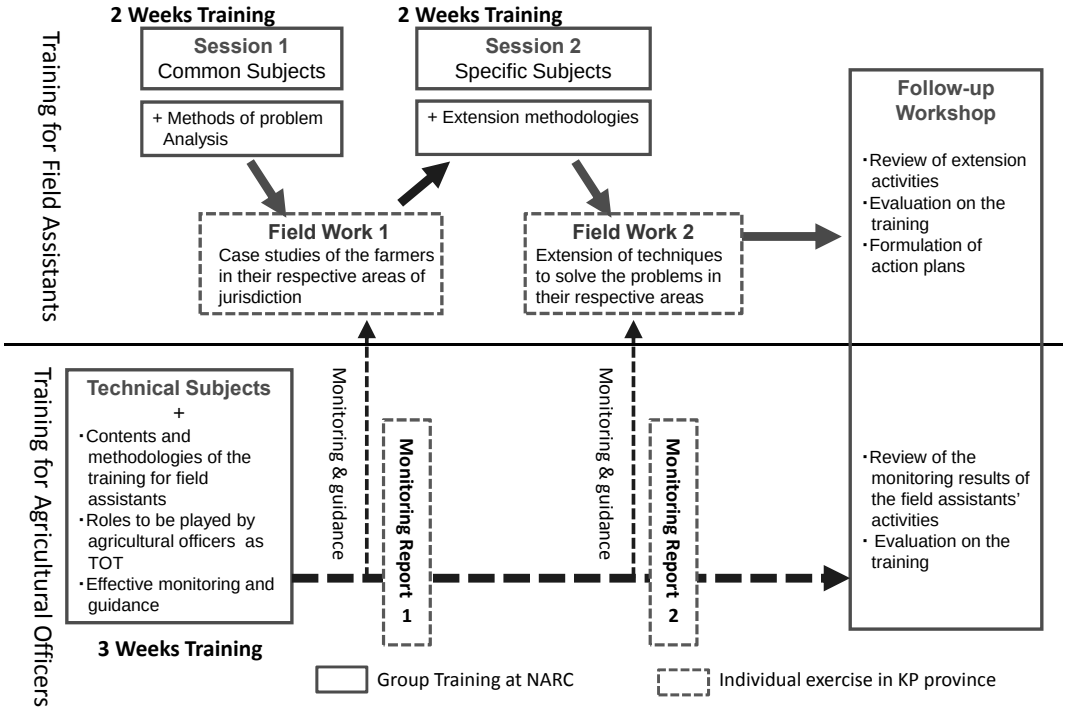
Component 2:
Agriculture Officers obtain necessary skills to guide, supervise and monitor the extension activities through training in NARC.

Component 3:
Field Assistants obtain necessary knowledge and skills to carry out extension service activities through training by NARC.

Component 4:
Field implementation of extension activities and monitoring in KP are strengthened.

B. ACHIEVEMENT of the PROJECT (Jan 2015 – Sep 2016)

STRUCTURE OF THE TRAINING



1. Curriculum Development (1)

1. Revised the Curriculum after Every Training based on Participants Evaluation

- Pre-Test and Post Test
- Daily Evaluation of Each Session
- Review of Each Session at the End of Training
- Overall Training at the End of Training

1. Curriculum Development (2)

2. Curriculum Modified

1) AO/ SMS Training (3 weeks/ groups)

Module 1 *	Crop Production
Module 2 *	Vegetable Production
Module 3 *	Fruits Production
Module 4 *	Others (e.g., Soil, Water, Value Addition)
Others	Facilitation Skill, Project Development & Management, Administrative Skills

Note: * Includes from land preparation, plant protection, up to post harvesting

1. Curriculum Development (3)

2. Curriculum being Modified

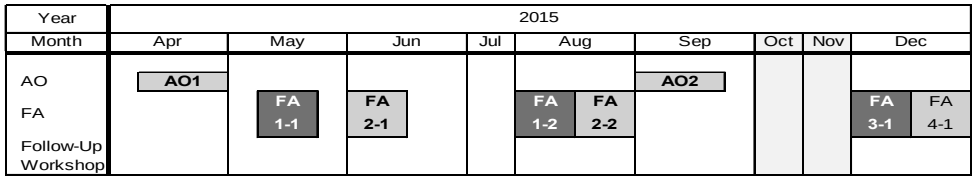
2) FA Training (2 weeks x 2 times/ group)

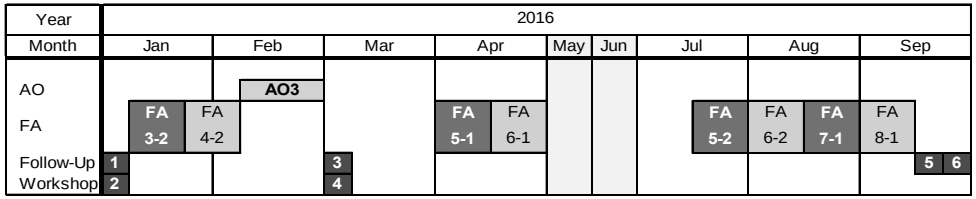
Session 1 Basic Knowledge	Session 2 Specific/ Focused Knowledge
2 weeks Module 1: Crop Production Module 2: Vegetable Module 3: Fruits Module 4: Others (Soil, Water, etc.)	2 weeks Module 1: Crop Module 2: Vegetable Module 3: Fruits Module 4: Others (Facilitation Skills, Extension Support Materials Development, Value Addition)

Note: * Includes from land preparation, plant protection, up to post harvesting

2. Number of Training Conducted and Number of Trained AO/SMS & FA (1)

- Training for AO/SMS Conducted: **3** Groups = **73** Trained*
- Training for FA Conducted: **6** Groups = 148 Trained**





Note: * Including 2 Instructors from ATI & 1 Staff from Bureau of Information

Note:** FA7-1 and FA8-1 conducted in September 2016, but are not included in the number

2. Number of Training Conducted and Number of Trained AO/SMS & FA (2)

Detail of Trained AO/ SMS/ FA per Division (AO Group 1-3, FA Group 1-6)

Division	# of AO/SMS Trained	# of FA Trained**
Hazara	19	39
Malakand	15	53
Peshawar	10	16
Mardan	9	40
Kohat	7	-
Bannu	2	-
D. I. Khan	6	-
DoAE (Peshawar)*	3	-
Total	**73**	**148**

Note: * Including 2 Instructors from ATI & 1 Staff from Bureau of Information

Note:** FA7-1 and FA8-1 conducted in September 2016, but are not included in the number

3. Result of the Training (1-1)

Overall Training Evaluation by the Participants

A: AO/SMS Training

	AO1	AO2	AO3	Average
Contents of the Training Course	3.69	3.88	4.05	3.87
Teaching Materials	3.50	3.99	4.08	3.86
Relationship with Other Trainees	4.30	4.19	4.24	4.24
Training Schedule	2.28	3.18	3.57	3.01
Training Facilities/ Training Room	4.38	4.43	4.41	4.41
Food, Residence/ Lodging	3.62	3.60	3.38	3.53
Usefulness of the Course	4.57	4.26	4.29	4.37
Overall Evaluation	3.83	4.38	4.29	4.17

Note: Max Point = 5, Min Point = 1

3. Result of the Training (1-2)

Overall Training Evaluation by the Participants

B: FA Training

	FA1	FA2	FA3	FA4	FA5	FA6	Average
Contents of the Training Course	4.29	4.24	4.09	4.05	4.40	4.43	4.25
Teaching Materials	4.36	4.30	4.09	4.22	4.44	4.49	4.32
Relationship with Other Trainees	4.60	4.45	4.61	4.22	4.43	4.49	4.47
Training Schedule	4.40	4.08	3.76	4.13	4.29	4.24	4.15
Training Facilities/ Training Room	4.73	4.63	4.70	4.82	4.62	4.67	4.70
Food, Residence/ Lodging	4.34	4.11	4.44	4.35	4.52	4.53	4.38
Usefulness of the Course	4.79	4.68	4.61	4.55	4.76	4.67	4.68
Overall Evaluation	4.82	4.60	4.46	4.68	4.85	4.79	4.70

Note: Max Point = 5, Min Point = 1

3. Result of the Training (2-1)

of Participants who Increased Score in Post Test

A: AO/SMS Training

Group	Average Increased Score	No. who Increased Score	Max Increased Score
Group 1	3.8 point	6 participants	16.0 point
Group 2	13.8 point	22 participants	17.3 point
Group 3	7.6 point	21 participants	22.0 point

3. Result of the Training (2-2)

of Participants who Increased Score in Post Test

B: FA Training

Group	Average Increased Score	No. who Increased Score	Max Increased Score
Group 1	9.8	20 participants	30.0 point
Group 2	12.3	22 participants	39.6 point
Group 3	24.8	24 participants	40.6 point
Group 4	17.8	24 participants	31.3 point
Group 5	9.4	21 Participants	47.7 point
Group 6	17.9	23 participants	35.0 point

20 Participants out of 25 Participants Increase the Score

4. Result of Field Work 1 and Field Work 2 by FA (1)

A. Field Work 1 = Case Studies of Farmers Practice (Problem Identification & Analysis)

1. Farmer's Profile
2. Crop Production Information & Production Activity Calendar
3. Technical Features of Crop Production by the Farmer
4. Measures taken by the Farmer to Overcome the Problem
5. Farmers' Findings from the Result of the Measures Taken

B. Field Work 2 = Dissemination Activities (Extension)

1. **PLAN** Program of the Day & Necessary Materials
2. **SELECT** Select Farmers who are Suffering from the problems
3. **CONDUCT** Based on the Plan for Disseminatio n Activity
4. **REPORT** Review the activity by FA, AO, and Project M&E Officers
5. **FOLLOW-UP** Conduct Follow-Up Visit to confirm the progress

4. Result of Field Work 1 and Field Work 2 by FA (2)

(Unit: Number of cases carried out by FAs)

Field Work carried out by 148 FAs	Total
Field Work 1 (Case Study)	390
Field Work 2 (Dissemination)	293
Total	**683**

(Unit: Number of cases carried out by FAs)

Extension Method of Dissemination Activities	Total
Individual Visit	42
Group Meeting	200
Field Visit	8
Field Day	19
Farmers Field School	4
Training	10
Others	10
Total	**293**

2,888 Farmers

Participated Dissemination Activities through FW2 of Group 1-6

4. Result of Field Work 1 and Field Work 2 by FA (3)

(Unit: No. of cases carried out by FAs)

Target Crops	FW1	FW2	Total
Wheat	115	67	182
Maize	79	71	150
Tomato	59	34	93
Potato	19	11	30
Onion	26	19	45
Apple	2	1	3
Peach	11	8	19
Citrus	9	8	17
Sugarcane	8	9	17
Tobacco	7	1	8
Others	55	64	119
Total	**390**	**293**	**683**

(Unit: No. of cases carried out by FAs)

Target Themes	FW1	FW2	Total
Disease	176	62	238
Insect Pest	101	91	192
Animal Pest	7	15	22
Weed	42	47	89
Yield	21	4	25
Cultivation	19	61	80
Input	14	0	14
Others	10	13	23
Total	**390**	**293**	**683**

4. Result of Field Work 1 and Field Work 2 by FA (3)

Division Wise Results

Note: FA Group 1-6 (148 FAs)

	Hazara 39 FAs	Malakand 53 FAs	Mardan 40 FAs	Peshawar 16 FAs	Total 148 FAs
Field Work 1 (Case Study)	126	152	80	32	390
Field Work 2 (Dissemination)	75	106	80	32	293
Total	**201**	**258**	**160**	**64**	**683**

Extension Method	Hazara	Malakand	Mardan	Peshawar	Total
Individual Visit	4	5	22	11	42
Group Meeting	52	75	54	19	200
Field Visit	0	5	2	1	8
Field Day	13	6	0	0	19
Farmers Field School	1	3	0	0	4
Training	0	7	2	1	10
Others	5	5	0	0	10
Total	**75**	**106**	**80**	**32**	**293**

No. of Participated Farmers	Hazara	Malakand	Mardan	Peshawar	Total
FA Group 1	345	438	0	0	783
FA Group 2	244	317	0	0	561
FA Group 3	88	168	71	0	327
FA Group 4	89	296	90	0	475
FA Group 5	0	104	181	103	388
FA Group 6	0	86	134	134	354
Total	**766**	**1,409**	**476**	**237**	**2,888**

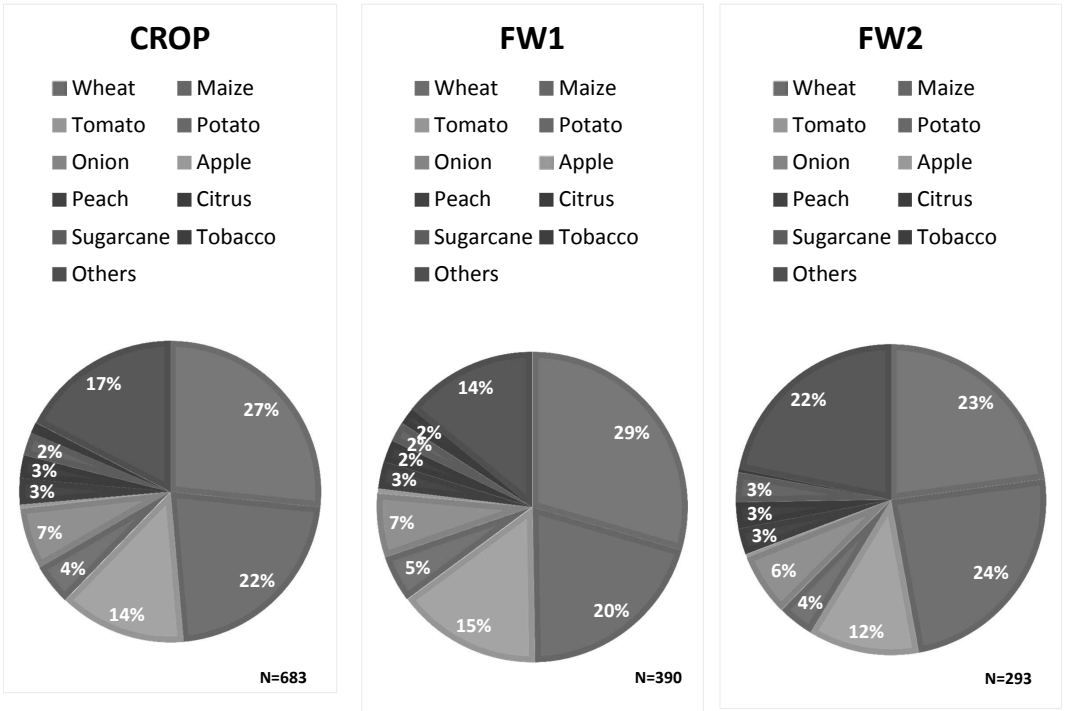
4. Result of Field Work 1 and Field Work 2 by FA (3)

Division Wise Results — **Note: FA Group 1-6 (148 FAs)**

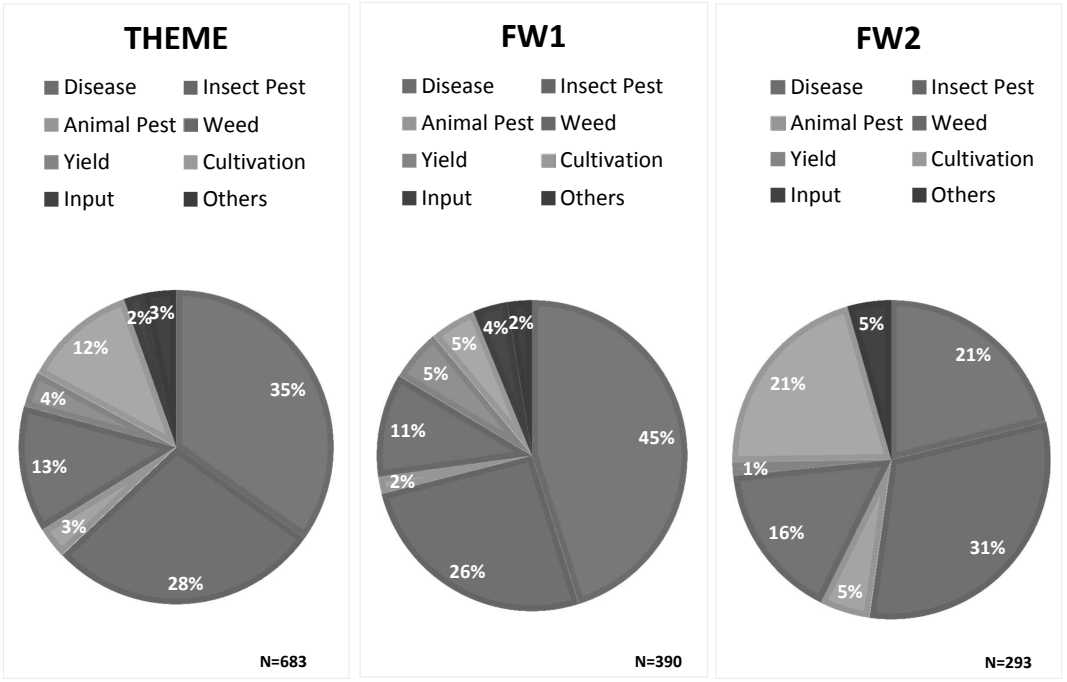
Target Crop	Hazara	Malakand	Mardan	Peshawar	Total
Wheat	64	57	51	10	182
Maize	50	33	50	17	150
Tomato	24	45	12	12	93
Potato	18	9	2	1	30
Onion	9	32	2	2	45
Apple	1	2	0	0	3
Peach	1	16	2	0	19
Citrus	5	7	4	1	17
Sugarcane	0	3	12	2	17
Tobacco	0	3	5	0	8
Others	29	51	20	19	119
Total	**201**	**258**	**160**	**64**	**683**

Target Theme	Hazara	Malakand	Mardan	Peshawar	Total
Disease	73	97	52	16	238
Insect Pest	27	69	65	31	192
Animal Pest	17	4	1	0	22
Weed	29	34	23	3	89
Yield	14	7	0	4	25
Cultivation	23	32	17	8	80
Input	8	6	0	0	14
Others	10	9	2	2	23
Total	**201**	**258**	**160**	**64**	**683**

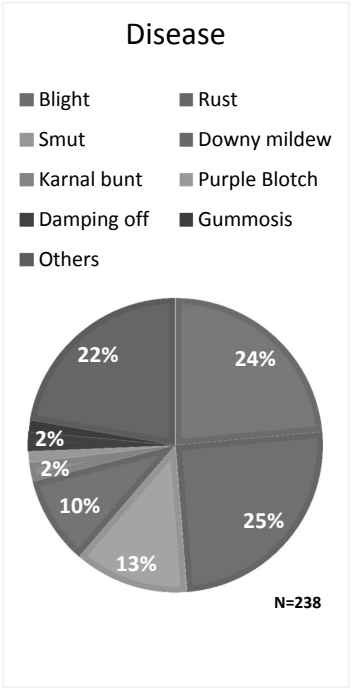
Target Crops



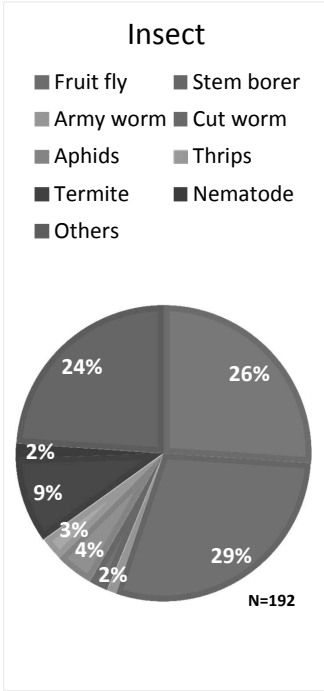
Target Themes



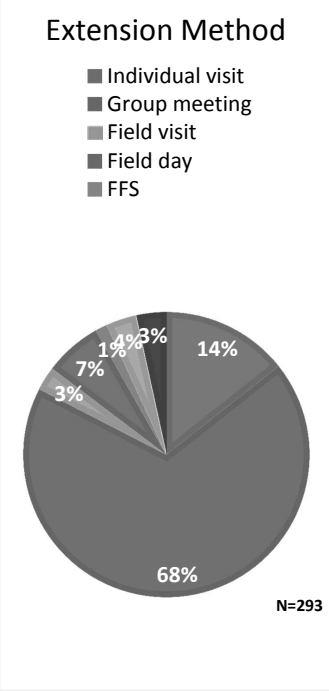
Major Diseases



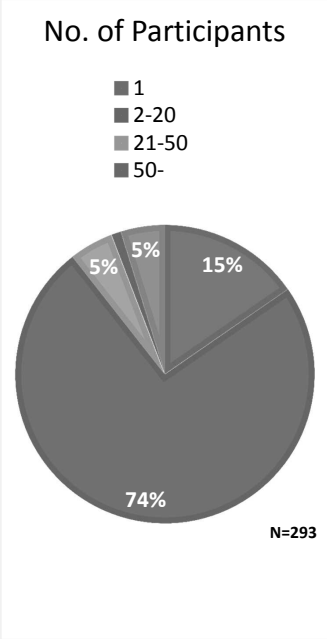
Major Insects



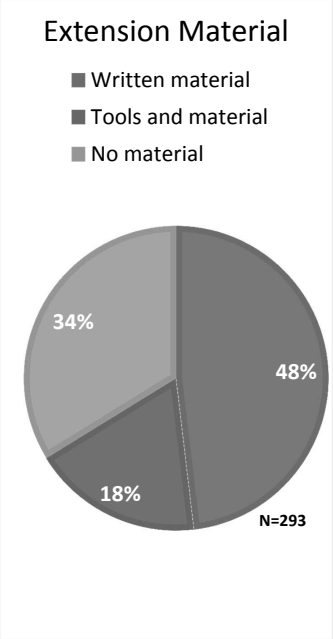
Extension Method



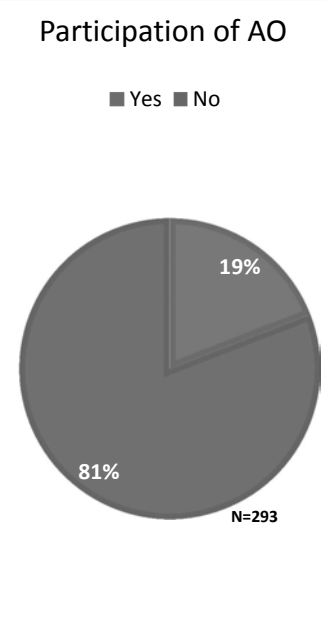
No. of Participants per Activity



Extension Material



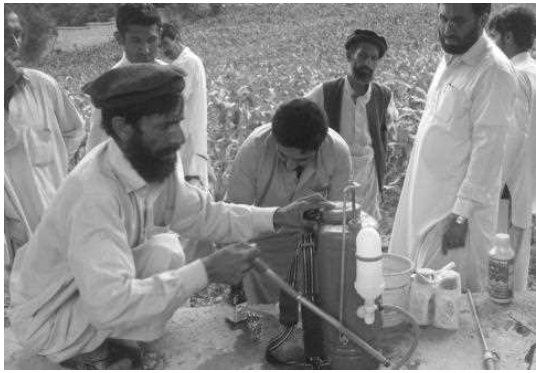
Participation of AO



Use of Materials

Field Work 2: Group 5

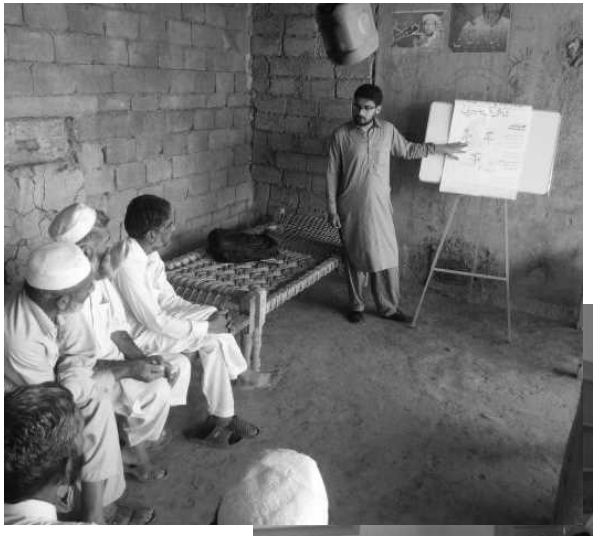
Practical Works



Field Work 2: Group 6

Practical Works

Use of Materials



Use of Materials

Use of Materials

5. Materials Development (1)

1. Reference Book (Training Sub-Textbook) for AO/ FA in Urdu

- Volume 1: Cereals Crops

2. Pest and Diseases

1) Easy to Carry Type Field Note for AO/FA

- Identification of Around 80 Major Pest and Diseases
- 9 major crops (2 cereal crops, 3 vegetable crops and 4 fruit crops)
- Easy to Carry Field Note for AO/ FA

3. Supporting KP Province Program)

1) Wheat Seed Distribution (3 types of pamphlets)
Pamphlet on i) Cultivation , ii) Weed Control and ii) Harvesting/ Post Harvesting (125,000 copies each)

4. Others

- Project Newsletter: Vol.1 – Vol.6
- Project Introductory Video

6. Others

1. Provision of Training Equipment to API

2. Provision of Multimedia/ PC to KP Province

- Model Farm Service Centre

3. Provision of Pruning Kit to KP Province

- 77 sets
- Model Farm Service Centre and Agriculture Circle Office

4. Gilgit- Baltistan Study Visit

- Study visit to JICA Technical Cooperation Project "The Project for Promotion of Value Added Fruit Products in Gilgit-Baltistan"
- 13 Participants (3 SMS, 3 AO, 6 FA)
- Understand and learn from the farmers in Gilgit-Baltistan on cultivation techniques, post-harvest techniques and marketing.

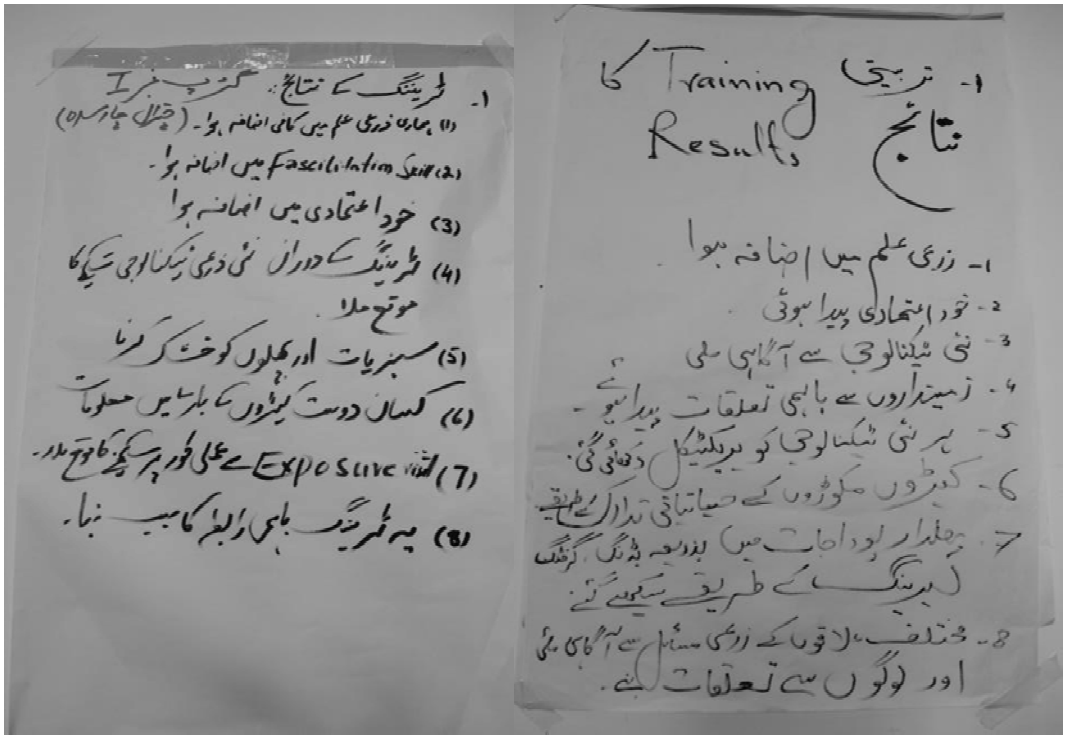
7. Follow-Up Workshop (1): General Information

Dates:

Follow-up Workshop 1: 4 January 2016
Follow-up Workshop 2: 7 January 2016
Follow-up Workshop 3: 29 February 2016
Follow-up Workshop 4: 3 March 2016
Follow-up Workshop 5: 22 September 2016
Follow-up Workshop 6: 26 September 2016

Participants:

	FUWS 1	FUWS 2	FUWS 3	FUWS 4	FUWS 5	FUWS 6	Total
AO &SMS	9	16	8	10	10	1	**54**
FA	21	25	25	24	20	28	**143**



Results of the group discussions during FUWS 5 and 6

7. Follow-Up Workshop (2): Review of the Training

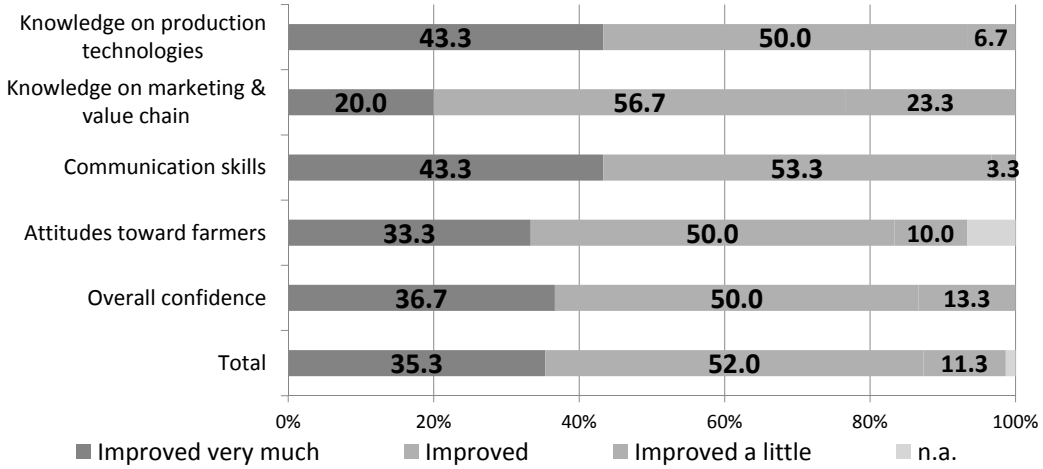
(1) Result of the Training

- **KNOWLEDGE** and **SKILLS** on modern agricultural technologies were enhanced.
- **COMMUNICATION**, **FACILITATION** and **PRESENTATION SKILLS** were improved.
- Methods of **PROBLEM IDENTIFICATION**, **PLANNING** of field extension activities as well as various **EXTENSION METHODOLOGIES** were introduced and utilized.
- **LINKAGES** with **NARC SCIENTISTS** were established.
- **SHARING** of **EXPERIENCES** and **IDEAS** among extension staff from different districts enriched the knowledge and understanding.
- **CONFIDENCE** levels in carrying out extension activities became high.
- By disseminating what they have learnt to farmers, the field staff could help **FARMERS** in **SOLVING THEIR PROBLEMS**.

7. Follow-Up Workshop (3): Review of the Training

(2) Result of the Self Evaluation by Participants (FUWS 3-6)*

a. Agricultural Officers and Subject Matter Specialists

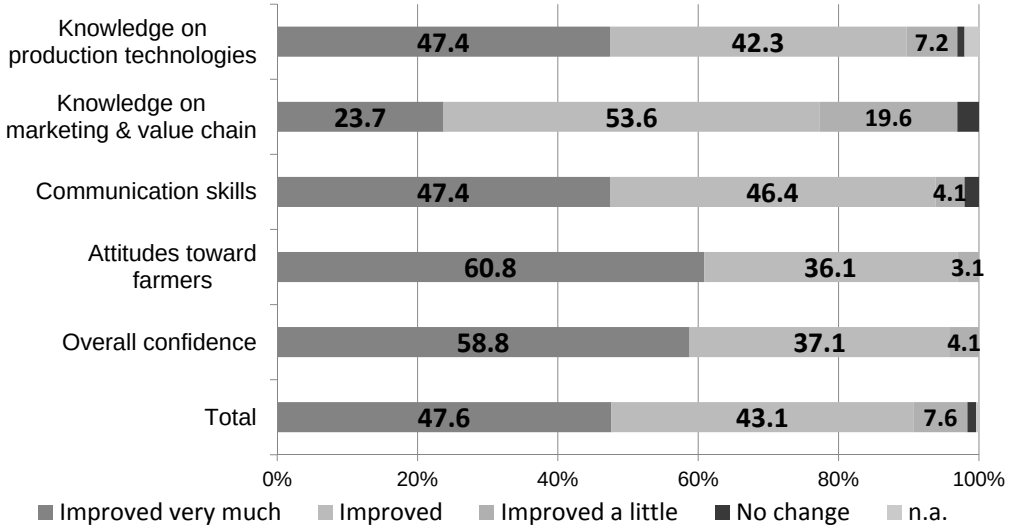


Note : * This evaluation was not conducted in FUWS 1 and 2

7. Follow-Up Workshop (4): Review of the Training

(2) Result of the self evaluation by participants (FUWS 3-6)*

b. Field Assistants



Note : * This evaluation was not conducted in FUWS 1 and 2

7. Follow-Up Workshop (5): Review of the Training

(3) Challenges in the Field Work (Routine Extension Activities)

- Insufficient provision of the resource for the field work
  (transport, refreshments, handouts for farmers, materials for demonstration, etc)
- Voluminous workload of field staff
- Wide geographical coverage against limited number of field staff
- Difficulties in arranging field activities at optimal timing
- Aid dependency / over expectation among the farmers
- Farmers' reluctance in adopting new technologies

7. Follow-Up Workshop (6): Action Plan

Trained FAs are requested to formulate **3 Action Plans** for coming 12 months for continuous dissemination of their learning to the farmers in their respective areas.

Crop-wise Distribution of the Planned Dissemination Activities

(FUWS 1 - 6: N=424)

- Technical Dissemination on **Cereal** Crops: **234** Activities
- Technical Dissemination on **Vegetables**: **118** Activities
- Technical Dissemination on **Fruit** Crops: **53** Activities
- Technical Dissemination on **Others**: **19** Activities

Crop	No	Crop	No	Crop	No.	Crop	No.
Apple	4	Guava	5	Peach	17	Squash	1
Apricot	2	Maize	103	Peas	1	Sugarcane	15
Bitter Gourd	12	Mango	1	Plums	1	Tomato	61
Cabbage	1	Okra	2	Pomegranate	1	Walnut	3
Citrus	8	Onions	21	Potato	15	Watermelon	2
Cut Flower	1	Orange	5	Rice	3	Wheat	127
Garlic	2	Orchard	6	Spring maize	1	Several crops	3

8. Follow-Up Activities (1)

(1) Follow-up Visits of the Field Work 2

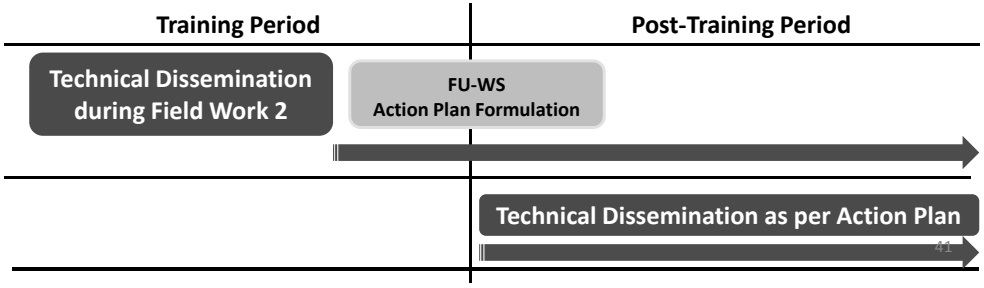
Purpose: Confirmation on the degree of application of technologies by the farmers who had been disseminated with technologies by FAs during Field Work 2.

Timing: A few months after the dissemination activities (after the specific season of the crop and timing of technology application).

(2) Follow-Up on the Action Plan implementation

Purpose: Confirmation on the execution of planned activities by the FAs

Timing: At the time of planned dissemination in accordance with the respective action by FAs



Results by Division

Note: FA Group 1-4 (100 FAs)

	Hazara		Malakand		Mardan		Total	
No. of Activity	78		90		32		200	
No. of Follow-Up	10	13%	35	39%	23	72%	68	34%
Direct visit with FA	6	60%	31	89%	2	9%	39	57%
Direct visit without FA	0	0%	2	6%	0	0%	2	3%
Hearing from FA	4	40%	2	6%	21	91%	27	40%
Technology Applied Cases	9	90%	31	89%	19	83%	59	87%
Technology not Applied Cases	1	10%	4	11%	4	17%	9	13%
No. of Applied Farmer who Participated	48	66%	346	73%	63	81%	457	73%
Technology Satisfied Cases	9	**100%**	31	**100%**	19	**100%**	**59**	**100%**
Technology not Satisfied Cases	0	0%	0	0%	0	0%	0	0%
Technology Continue to Apply	9	**100%**	31	**100%**	19	**100%**	**59**	**100%**
Technology not going to Apply	0	0%	0	0%	0	0%	0	0%

Reasons for the technologies not applied

- Farmers did not grow the target crop in this season.
- Recommended materials were not available or expensive in the market.
- Farmers noticed that the effect of the recommended technology is insufficient to solve the problem.
- Farmers did not fully understand the technology in one extension activity.

8. Follow-Up Activities (2)

(1) Follow-up Visits of the Field Work 2

Purpose: Confirmation on the degree of application of technologies by the farmers who had been disseminated by FAs during Field Work 2.

Timing: A few months after the dissemination activities (after the specific season of the crop and timing of technology application).

Findings of Follow-Up Visits of Field Work 2: as of September 2016

Number of Follow-Up Visit Conducted	68 Cases out of 200 Total Cases (34%)
Methods of Follow-Up 1) Direct Visit to Farmers with FA 2) Direct Visit to Farmer without FA 3) Hearing from the FA	 39 Cases out of 68 Cases (57 %) 2 Cases out of 68 Cases (3 %) 27 Cases out of 68 Cases (40 %)
Number of Cases in which **Farmers Applied the Disseminated Technologies**	**59** Cases out of 68 Cases (**87 %**)
Number of **Participated Farmers who Applied the Disseminated Technologies**	**457 Farmers** (**73 %** of Total Participated Farmers)
Number of Cases in which **Farmers got Good Results from the Disseminated Technologies**	59 Cases out of 59 Applied Cases (**100 %**)

Note: FA Group 1-4 (100 FAs)

8. Follow-Up Activities (3)

(2) Follow-Up on the Action Plan Implementation

Purpose: Confirmation on the execution of planned activities by the FAs

Timing: At the time of planned dissemination in accordance with the respective action by FAs

Action Plan: as of September 2016

Number of Action Plan Conducted	**109** out of 285 for Group 1-4 (38 %)
Number of Farmers Participated	**1,023 Farmers** in 109 Activities
Number of Farmers Participating per Activity	**9.4 Farmers per Activity**

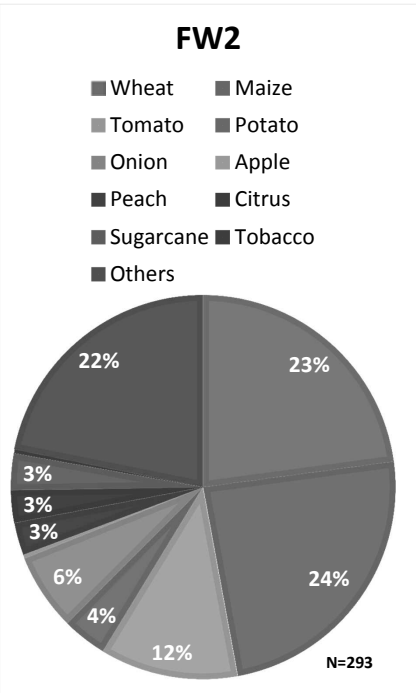
1,023 Farmers

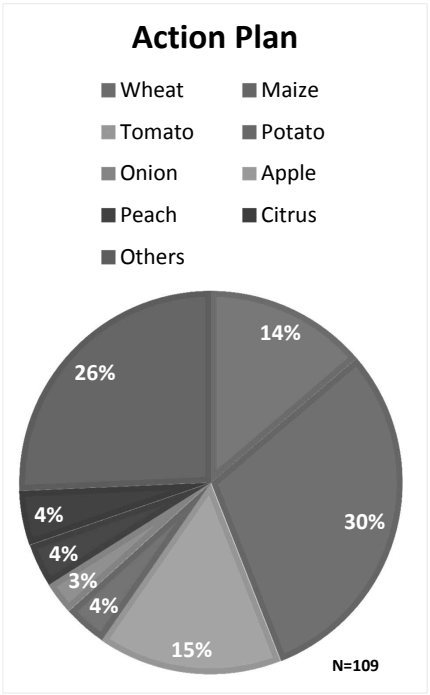
Participated in Dissemination Activities of Action Plan (FA 1-4)

3,911 Farmers

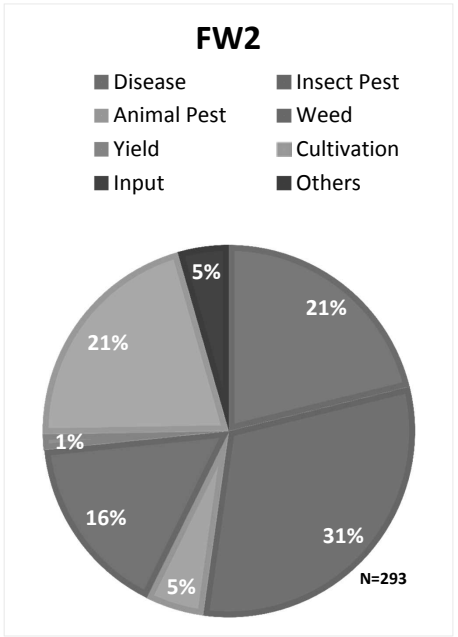
Reached Out from FW2 (FA1-6) & Action Plan (FA1-4)

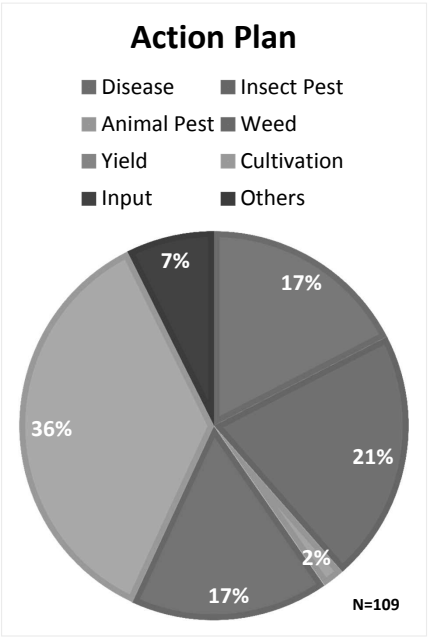
Target Crops





Target Themes





C. ACTIVITIES and SCHEDULE from October 2016 – May 2017

1. Training Schedule

- October 2016 to May 2017 -

- AO Group 4 Training (25 AO/SMS)
- FA Group 7– 10 Training (100 FA)
- Follow-Up Workshop 7 – 10

Year	2016			2017				
Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
AO					AO4			
FA			FA 7-2 / FA 8-2	FA 9-1 / FA 10-1		FA 9-2 / FA 10-2		
Follow-Up Workshop							7 9 / 8 10	

Detail of Training Schedule

A: Tentative Schedule of Training

1) AO Training

AO Group 4: 30 Jan - 17 Feb 2017

2) FA Training

	Session 1	Session 2
FA Group 7:		28 Nov – 9 Dec 2017
FA Group 8:		13 Dec – 25 Dec 2017
FA Group 9:	2 Jan -13 Jan, 2017	19 Feb – 3 Mar 2018
FA Group 10:	16 Jan – 27 Jan, 2017	6 Mar – 17 Mar 2018

B: Tentative Schedule of Follow-up Workshop

FU-WS 7: 4 Apr 2017 FU-WS 9: 10 Apr 201

FU-WS 8: 6 Apr 2017 FU-WS 10: 13 Apr 2017

C: Target Divisions and Districts

Peshawar Division: Charsadda, Nowshera, Peshawar
Kohat Division: Hangu, Karak, Kohat
Bannu Division: Bannu, Lakki Marwat
Dera Ismail Khan Division: Dera Ismail Khan, Tank

2. Follow-Up Activities

1. Follow-up Visits of the Field Work 2

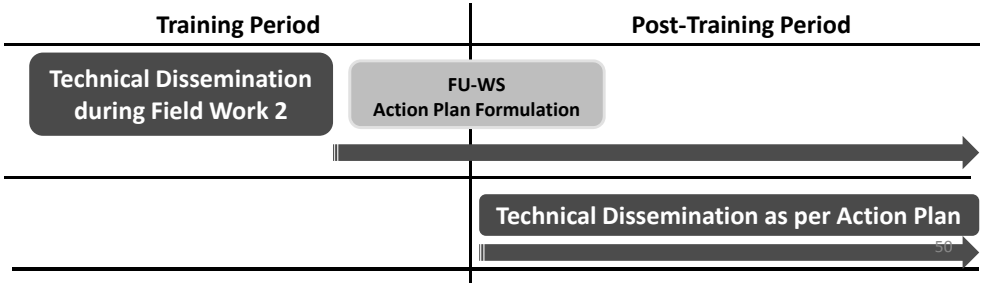
Purpose: Confirmation on the degree of application of technologies by the farmers who had been disseminated with technologies by FAs during Field Work 2.

Timing: A few months after the dissemination activities (after the specific season of the crop and timing of technology application).

2. Follow-Up on the Action Plan Implementation

Purpose: Confirmation on the execution of planned activities by the FAs

Timing: At the time of planned dissemination in accordance with the respective action by FAs



3. Materials Development

1. Fruit Seedling Distribution (Supporting KP Province Program)

- Pamphlet on Cultivation , Pruning Techniques, Insect/ Pest Management, Harvesting/ Post Harvesting

2. Treatment on 20 Major Pest and Disease (Pamphlet)

3. Project Newsletter (1,200 Copies/ Issue)

4. Audio Visual Aid

- DVD on Fruit Fly Control
- DVD on Pruning

5. Reference Book for AO/ FA in Urdu

- Volume 2: Vegetable Crops
- Volume 3: Fruits Crops
- Volume 4: Other Subjects

Thank You Very Much!

MINUTES OF MEETING
OF
THE FOURTH JOINT COORDINATION COMMITTEE MEETING
ON
JAPANESE TECHNICAL COOPERATION PROJECT
FOR
CAPACITY DEVELOPMENT OF AGRICULTURE EXTENSION SERVICES
IN KHYBER PAKHTUNKHWA PROVINCE

Islamabad, 26 April 2017

Dr. Yusuf Zafar
Chairman
Pakistan Agricultural Research Council
Government of Islamic Republic of Pakistan

Dr. Muhammad Azeem Khan
Director General
National Agricultural Research Centre
Government of Islamic Republic of Pakistan

Dr. Khalid Farooq
Senior Director
Agriculture Poly-technique Institute
National Agricultural Research Centre
Government of Islamic Republic of Pakistan

Mr. Akira Koto
Leader of the JICA Expert Team
for Capacity Development of Agriculture
Extension Services in Khyber Pakhtunkhwa
Province

MAIN POINTS DISCUSSED

The fourth Joint Coordination Committee (JCC) meeting, of the Project for "Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province", hereafter referred as "the Project", was held under the chairmanship of Dr. Yusuf Zafar, Chairman of Pakistan Agriculture Research Council (PARC), on 26 April 2017 at the Executive Committee Room, National Agriculture Research Centre (NARC), Islamabad.

1. The agenda of the meeting were as follows;
   i. Presentation on Project Framework/ Structure
   ii. Presentation on Achievement of the Project (January 2015 – April 2017)
   iii. Presentation on Project Achievement against Indicators
   iv. Presentation on Impact of the Project
   v. Presentation on Recommendations for Next Step
   vi. Comments/ Feedback from the Participants

2. Participants of the meeting were scientists/officers of PARC/NARC, Economic Affairs Division, Japan International Cooperation Agency (JICA), and Directorate of Agriculture Extension (DoAE) of Khyber Pakhtunkhwa Province (KP Province). The list of participants is attached as Annexure-1.

3. The meeting started with the recitation of the Holy Quran after the welcoming remarks.

4. Dr. Khalid Farooq, Director of Agriculture Poly-technique Institute (API), Mr. Akira Koto, JICA Project Team Leader, Mr. Hiroyasu Onuma and Ms. Keiko Itagaki, JICA Project Team Expert presented the Project framework/ structure, achievement of the Project (January 2015 – April 2017), Project achievement against indicators, Impact of the Project, and Recommendations for next step.

5. Because the Chairman has to leave the meeting earlier to attend another meeting, he expressed his satisfaction and appreciation to the concerned stakeholders about the successful completion of the Project. He have noted that as the sustainability of these activities becomes very important, he is ready to write a letter to concerned ministries as well as to Directorate of Agriculture Extension (DoAE), KP Province to fully utilize the Project recommendation.

6. Mr. Abid Kamal, Acting Director General of DoAE, KP Government, expressed his sincere appreciation to the concerned stakeholders of the Project achievement, which developed capacity of those extension workers in KP Province. DoAE has the budget for extension activities and is the matter how to execute the budget to those "small" extension activities, which includes, fuel, refreshment, tools, etc. Mr. Abid Kamal expressed that DoAE, KP Province would try their best to utilize and support these extension workers so that the farmers could benefit.

7. Ms Yasmeen Sadiq, Acting Deputy Secretary, Economic Affairs Division, expressed that JICA

technical cooperation project is very unique which leads to self-reliance and sustainability. The Project itself has reached more than 5,800 farmers and if those planned action plans have being conducted, 3,000 more farmers could definitely benefit with sound knowledge which results in good production. To ensure these good results, mechanism is very much in need and is now up to us how to do.

8. Mr. Yoshihisa Onoe, Senior Representative of JICA Pakistan Office, congratulated the successful completion of the Project with appreciation and acknowledgement of the hard work done by the concerned stakeholders. As understanding the positive changes, Mr. Onoe expressed that he would like to visit KP Province after six month to observe and understand the changes.

9. Mr. Okumura, Representative of JICA Pakistan Office, noted that the end-user of DoAE is farmers so that their services which satisfy the farmers become important. The Project presented recommendations and JICA Pakistan Office would like to follow-up on these issues, as well as look into these issues for other similar Projects.

10. Other participants appreciated the result of the Project and congratulated for the success of the Project.

11. The meeting was ended with vote of thanks for the participants as well as the concerned stakeholders including the authorities and staff of NARC.

Enclosures:

- Annexure 1: List of Participants
- Annexure 2: Handout - PowerPoint presentation on the Project Framework/ Structure, Achievement of the Project, Project achievement against indicators, Impact of the Project, Recommendations for next step.
- Annexure 3: Project Newsletter vol.8 (handout)

Distribution:

- Chairman PARC
- Deputy Secretary, Economic Affairs Division
- Senior Representative, JICA
- Director General, NARC
- Director General, DoAE, KP
- Member (NRD), PARC
- JICA Project Team

Annexure-1

List of Participants

Committee Members:

Sr	Name	Designation & Department	Committee
1	Dr. Yusuf Zafar	Chairman, PARC	Chairman
2	Dr. Muhammad Azeem Khan	Director General, NARC	Member
3	Ms Yasmeen Sadiq	Acting Deputy Secretary, Economic Affairs Division	Member
4	Mr. Yoshihisa Onoe	Senior Representative, JICA Pakistan Office	Member
5	Mr. Abid Kamal	Acting Director General, Directorate of Agriculture Extension (DoAE) of KP Province	Member
6	Dr. Khalid Farooq	Sr. Director, API of NARC	Member
7	Mr. Akira Koto	JICA Project Team Leader	Member

Participants:

Sr	Name	Designation & Department
1	Dr. Anjum Munir	Director, CDRI, NARC
2	Mr. Roshan Zada	Director, Outreach, NARC
3	Dr. Parvez Khalid	Director, PRMC, NARC
4	Dr. Tariq Mehmood	Sr. Director, DPEP, NARC
5	Dr. Abdul Rashid	Director, CSI, NARC
6	Dr. Saeeda Raza	Director, FSPDI, NARC
7	Mr. Ken Okumura	Representative, JICA Pakistan Office
8	Mr. Aamir Ilyas	API, NARC
9	Mr. Hiroyasu Onuma	JICA Project Team, Expert
10	Ms Keiko Itagaki	JICA Project Team, Expert
11	Ms Hiromi Takenaka	JICA Project Team, Expert

Islamic Republic of Pakistan
The Project for Capacity Development of Agriculture Extension Services
in Khyber Pakhtunkhwa Province

4th Joint Coordinating Meeting

April 2017

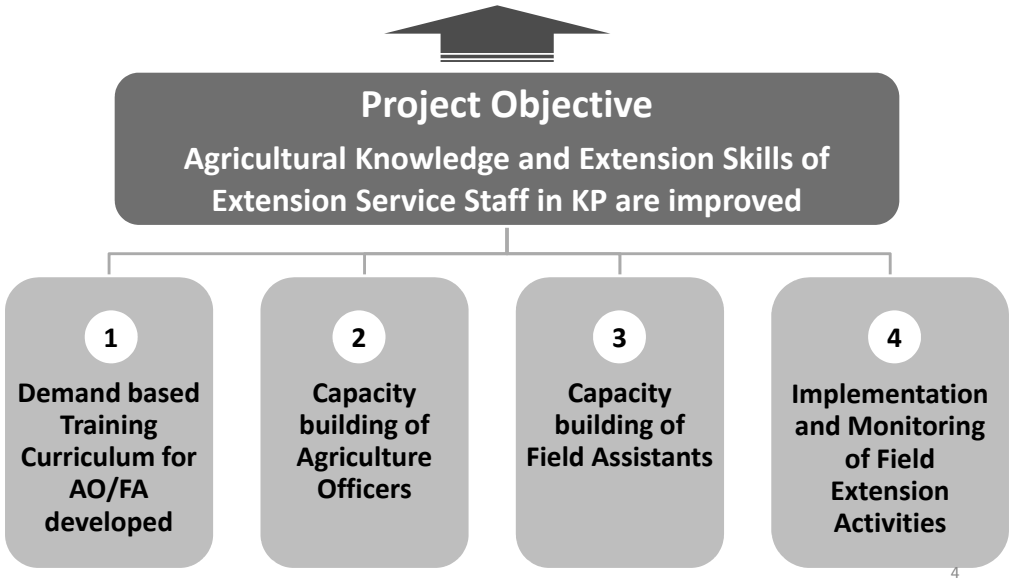
1. Project Title:
The Project for Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province

2. Project Duration:
Jan 2015 – June 2017 (2.5 Years)

3. Target Groups:
Extension Staff (100 AO & 250 FA)of Directorate of Agriculture Extension (DoAE) in KP and Farmers

4. Implementer (Actors):
- National Agriculture Research Centre (NARC)
- DoAE, KP Province
- Japan International Cooperation Agency (JICA)

A. FRAMEWORK and STRUCTURE of the Project



Output 1:
Demand-based training curricula for capacity development of agriculture extension staff (Agriculture Officers and Field Assistants) are developed by NARC.

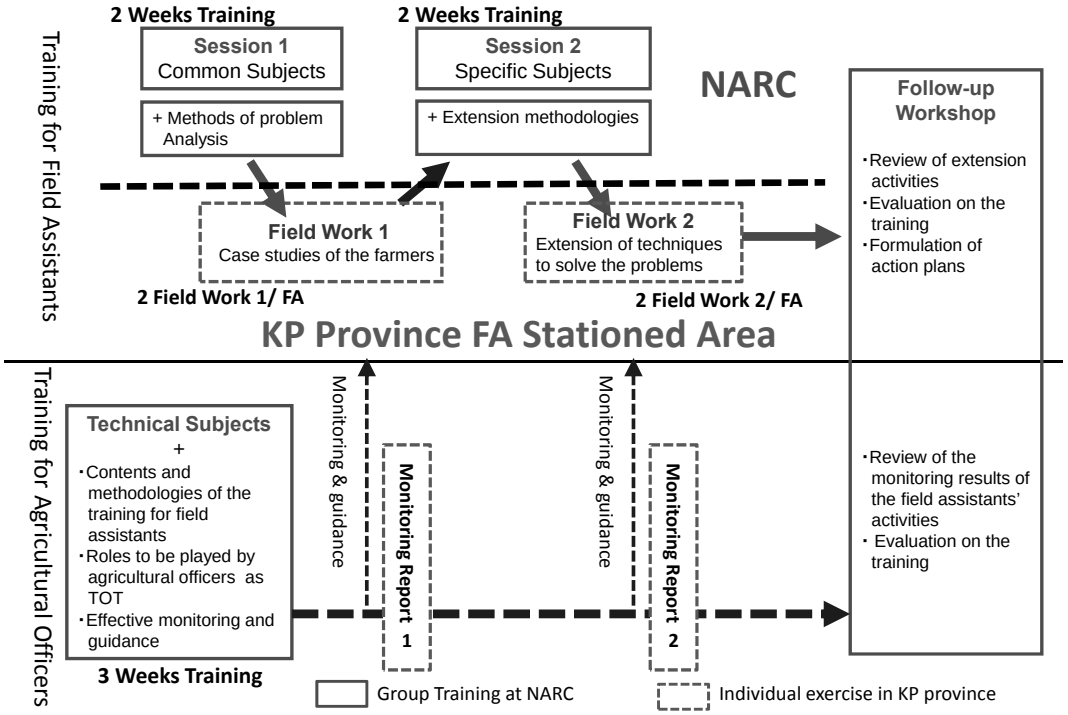
Output 2:
Agriculture Officers obtain necessary skills to guide, supervise and monitor the extension activities through training in NARC.

Output 3:
Field Assistants obtain necessary knowledge and skills to carry out extension service activities through training by NARC.

Output 4:
Field implementation of extension activities and monitoring in KP are strengthened.

B. ACHIEVEMENT of the PROJECT (January 2015 – April 2017)

STRUCTURE OF THE TRAINING



1. Curriculum Development (1)

1. **Revised the Curriculum after Every Training based on Participants Evaluation**

- Continued to revise the curriculum after each session based on participants' evaluation and feedback, so that the curriculum could fit to participants' need.
- 4 types of evaluation;

  a) Pre-Test and Post Test
  b) Daily Evaluation of Each Session
  c) Review of Each Session at the End of Training
  d)Overall Training at the End of Training.

1. Curriculum Development (2)

2. Modified Curriculum: Standard

1) AO/SMS Training: 3 weeks/ Group

Module 1 *	Crop Production
Module 2 *	Vegetable Production
Module 3 *	Fruits Production
Module 4 *	Others (e.g., Soil, Water, Value Addition)
Others	• Facilitation Skill, Administrative Skills, Report Writing, Proposal Formulation & Project Management, etc. • Project Session: Role of SMS/ AO/ FA, Activities of District Directorate of Agriculture Extension, "Monitoring/ Supervising" FA.

Note: * Includes from land preparation, plant protection, up to post harvesting

AO Training: 3 Weeks

Week	Day		Contents
1	1	Mon	Orientation, Facilitation skill
	2	Tue	Module 1: Cereal Crops (Production technology & Major crops)
	3	Wed	
	4	Thu	Module 2: Vegetable Crops (Production technology & Major crops)
	5	Fri	
	6	Sat	Field Visit
	7	Sun	
2	8	Mon	Module 3: Fruit Crops (Production technology & Major crops)
	9	Tue	
	10	Wed	Module 4: Others - Water & Irrigation
	11	Thu	Module 4: Others - Soil, Nutrients & Compost
	12	Fri	Module 4: Others - Seed & Others
	13	Sat	Field Visit
	14	Sun	
3	15	Mon	Module 4: Others - Value Addition & Post harvest
	16	Tue	General: Time Management, Project Management, Integrated Farm Management, Farmers Field School, Information Communication Technology, etc.
	17	Wed	
	18	Thu	Project Session: Role of SMS/AO/FA, & "Monitoring" FA Activities
	19	Fri	Evaluation

1. Curriculum Development (3)

2. Modified Curriculum: Standard

2) FA Training: Session 1 & Session 2/ Group

• Module 1 -4	• Same structure with AO/SMS Training
• Session 1 (2 weeks)	• Focus on Basic/ General Knowledge: Crop Production Techniques on Cereals, Vegetables, Fruits, Plant Protection • Problem Identification/ Understanding Farmers' Practices
• Session 2 (2 weeks)	• Focused Knowledge on Certain Crops for Cereals, Vegetables, Fruits, Plant Protection, Value Addition (based on Questions from FA) • Questions and Answers Sessions • Knowledge for "Extension": Facilitation Skills, Extension Materials Development • Getting Ready for Field Work 2 (Extension Activities)

FA Training Curriculum - Session 1 (2 weeks)

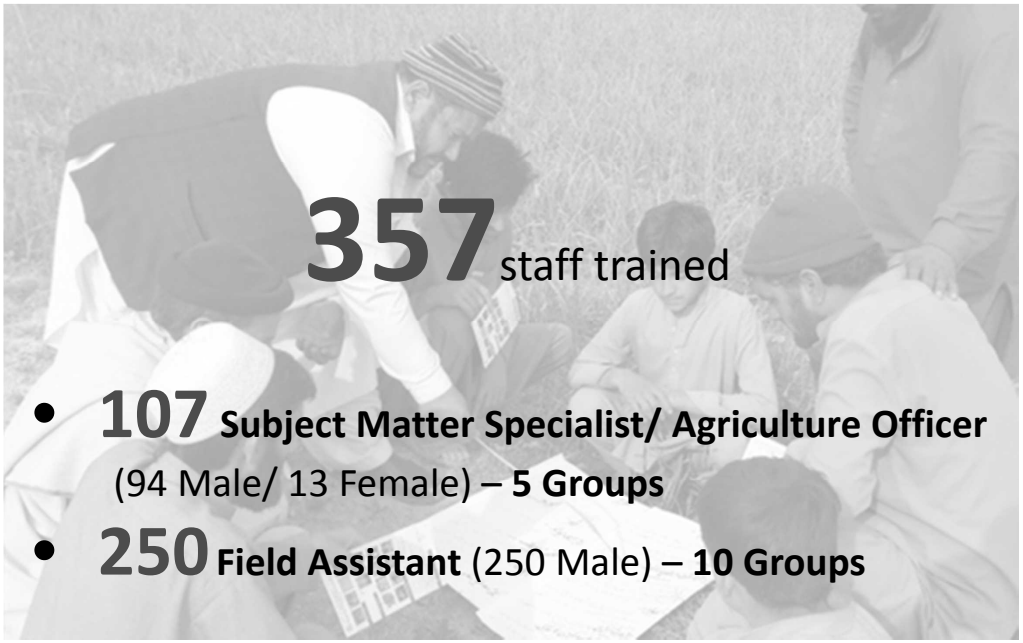
★Basic Knowledge and Methods of Understanding Farmers Practices

Week	Day		Contents
1	1	Mon	Orientation, Institute Visit (CSI, DHRD, CDRI)
	2	Tue	Cereal Crops: Maize and Wheat Production Techniques
	3	Wed	Vegetable Crops: Production Techniques
	4	Thu	Fruit Crops: Production Techniques
	5	Fri	Others: Compost, Soil, Bi-fertilizer, Vertebrate Pest Management
	6	Sat	Field visit
	7	Sun	
2	8	Mon	Others: Apiculture, Integrated Disease/ Pest Management, etc.
	9	Tue	Others: FFS, Land Leveling/ Land Preparation, Tractor Maintenance, Sprayers, Terracing & Management, etc.
	10	Wed	Others: Calculation of Fertilizers/ Insecticides, Land Measurement, Value Addition, Fruit & Vegetable Marketing
	11	Thu	Project Session: Field Work 1 (Case Study: Understanding Farmers Practice and issues they face)
	12	Fri	Evaluation

FA Training Curriculum - Session 2 (2 weeks)
★Focused Knowledge for Extension Activities

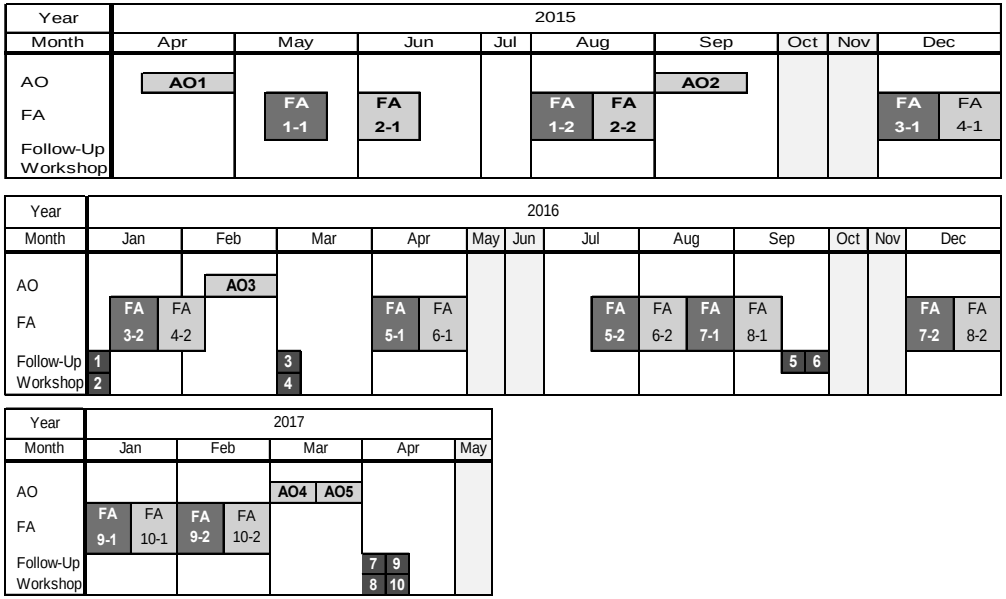
Week	Day		Contents
1	1	Mon	Orientation, Facilitation Skill
	2	Tue	Cereal Crops: 1) Certified/ Quality Seed 2) Plant Protection (Disease/ Pest)
	3	Wed	Vegetable Crops: 1) Nursery Management 2) Potato, Onion, Tomato, Garlic
	4	Thu	Fruit Crops: 1) Nursery Management 2) 3 sessions from Peach, Apple, Guava, Dates, Citrus
	5	Fri	Others: Bio-zote, Fodder, Sugarcane, Rice, etc.
	6	Sat	Field visit
	7	Sun	
2	8	Mon	Practice of Presentation Skills, Q&A on Pest & Diseases, Value Addition (Solar Dried Vegetable/ Fruits)
	9	Tue	Q&A for 1) Field Crops, 2) Vegetable Crops, 3) Fruit Crops
	10	Wed	Preparation and Practice of Extension Materials
	11	Thu	Project Session: Field Work 2 (Extension Activity)
	12	Fri	Evaluation

2. Number of Training Conducted and Number of Trained AO/SMS & FA (1)



2. Number of Training Conducted and Number of Trained AO/SMS & FA (2)

Training Schedule



2. Number of Training Conducted and Number of Trained AO/SMS & FA (3)

Division	# of AO/SMS Trained*	# of FA Trained
Hazara	25	39
Malakand	22	55
Peshawar	13	44
Mardan	11	44
Kohat	7	16
Bannu	6	14
D. I. Khan	10	38
DoAE (Peshawar)*	9	-
Total	**107**	**250**

Note: Including 5 Instructors from ATI, 2 Staff from Bureau of Information, 1 staff from DoAE, and 1 staff from DG-A*

3. Result of the Training (1-1)

Overall Training Evaluation by the Participants

A: AO/SMS Training

	AO1	AO2	AO3	AO4	AO5	Average
Contents of the Training Course	3.69	3.88	4.05	4.30	3.96	3.98
Teaching Materials	3.50	3.99	4.08	4.46	4.14	4.03
Relationship with Other Trainees	4.30	4.19	4.24	4.74	4.40	4.37
Training Schedule	2.28	3.18	3.57	3.38	2.67	3.02
Training Facilities/ Training Room	4.38	4.43	4.41	4.59	4.29	4.42
Food, Residence/ Lodging	3.62	3.60	3.38	4.53	3.70	3.76
Usefulness of the Course	4.57	4.26	4.29	4.75	4.63	4.50
Overall Evaluation	3.83	4.38	4.29	4.86	4.50	4.37

Note: N=107, Max Point = 5, Min Point = 1

3. Result of the Training (1-2)

Overall Training Evaluation by the Participants

B: FA Training

	FA1	FA2	FA3	FA4	FA5	FA6	FA7	FA8	FA9	FA10	Average
Contents of the Training Course	4.29	4.24	4.09	4.05	4.40	4.43	4.28	4.72	4.02	4.70	4.31
Teaching Materials	4.36	4.30	4.09	4.22	4.44	4.49	4.32	4.85	4.19	4.77	4.38
Relationship with Other Trainees	4.60	4.45	4.61	4.22	4.43	4.49	4.32	4.88	4.26	4.69	4.50
Training Schedule	4.40	4.08	3.76	4.13	4.29	4.24	3.75	4.77	3.35	4.66	4.18
Training Facilities/ Training Room	4.73	4.63	4.70	4.82	4.62	4.67	4.62	4.97	4.59	4.89	4.72
Food, Residence/ Lodging	4.34	4.11	4.44	4.35	4.52	4.53	4.24	4.86	4.03	4.73	4.42
Usefulness of the Course	4.79	4.68	4.61	4.55	4.76	4.67	4.60	4.95	4.64	4.96	4.70
Overall Evaluation	4.82	4.60	4.46	4.68	4.85	4.79	4.48	4.96	4.48	4.85	4.70

Note: N=250, Max Point = 5, Min Point = 1

3. Result of the Training (2-1)

of Participants who Increased Score in Post Test

A: AO/SMS Training

Group	Average Increased Score	No. who Increased Score	Max Increased Score
Group 1	3.8 point	6/25 participants	16.0 point
Group 2	13.8 point	22/24 participants	17.3 point
Group 3	7.6 point	21/24 participants	22.0 point
Group 4	5.5 point	13/14 participants	20.3 point
Group 5	7.1 point	18/20 participants	24.8 point

74.8% (80 Participants out of 107 Participants) **Increased the Score**

3. Result of the Training (2-2)

of Participants who Increased Score in Post Test

B: FA Training

Group	Average Increased Score	No. who Increased Score	Max Increased Score
Group 1	9.8 point	20 participants	30.0 point
Group 2	12.3 point	22 participants	39.6 point
Group 3	24.8 point	24 participants	40.6 point
Group 4	17.8 point	24 participants	31.3 point
Group 5	9.4 point	21 Participants	47.7 point
Group 6	17.9 point	23 participants	35.0 point
Group 7	22.2 point	24 participants	45.7 point
Group 8	13.3 point	22 participants	22.8 point
Group 9	22.6 point	24 participants	37.4 point
Group 10	22.0 point	24 participants	43.3 point

91.2% (=228 Participants out of 250 Participants) **Increased the Score**

4. Result of Field Work 1 and Field Work 2 by FA (1)

A. Field Work 1 = Case Studies of Farmers Practice (Problem Identification & Analysis)

1. Farmer's Profile
2. Crop Production Information & Production Activity Calendar
3. Technical Features of Crop Production by the Farmer
4. Measures taken by the Farmer to Overcome the Problem
5. Farmers' Findings from the Result of the Measures Taken

B. Field Work 2 = Dissemination Activities (Extension)

1. **PLAN** Program of the Day & Necessary Materials
2. **SELECT** Select Farmers who are Suffering from the problems
3. **CONDUCT** Based on the Plan for Disseminatio n Activity
4. **REPORT** Review the activity by FA, AO, and Project M&E Officers
5. **FOLLOW-UP** Conduct Follow-Up Visit to confirm the progress

4. Result of Field Work 1 and Field Work 2 by FA (2)

(Unit: Number of cases carried out by FAs)

Field Work carried out by 250 FAs	Total
Field Work 1 (Case Study)	594
Field Work 2 (Dissemination)	497
Total	**1,091**

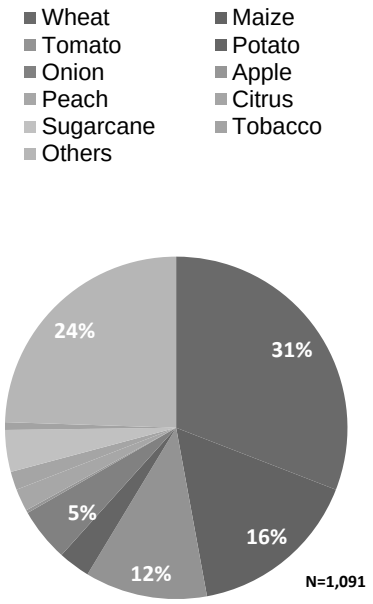
(Unit: Number of cases carried out by FAs)

Extension Method of Dissemination Activities	Total
Individual Visit	105
Group Meeting	334
Field Visit	10
Field Day	20
Farmers Field School	4
Training	11
Others	11
Total	**497**

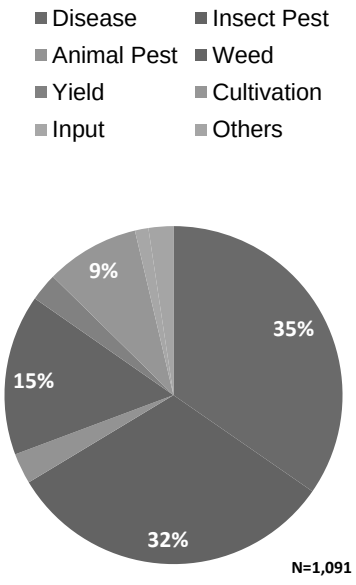
4,022 Farmers

Participated Dissemination Activities through FW2

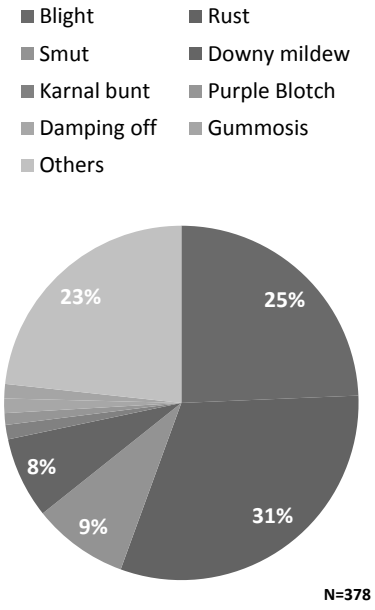
Target Crops



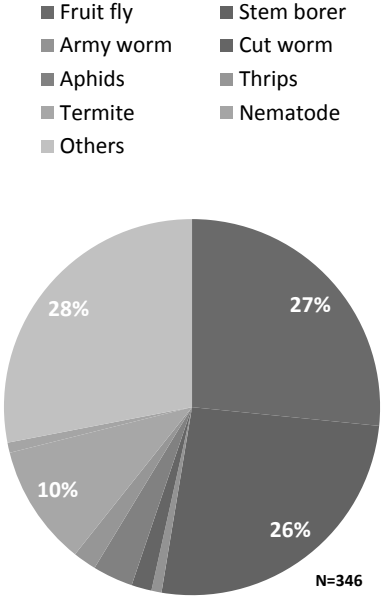
Target Theme



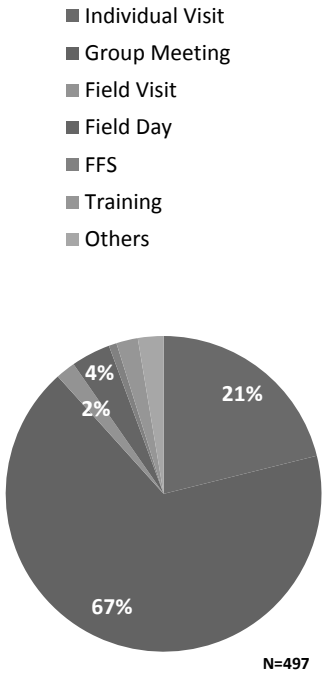
Major Diseases



Major Insects

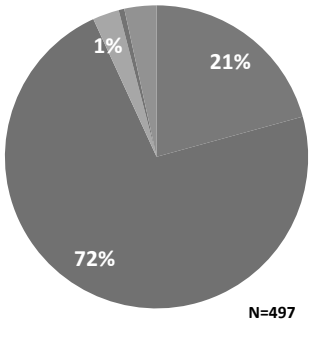


Extension Method

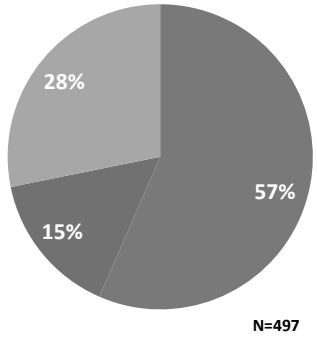


No. of Participants per Activity

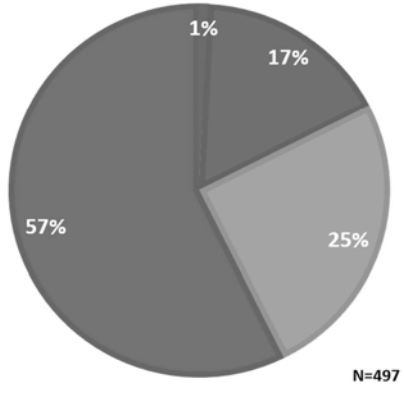
Average
8.1 Farmers/ Activity



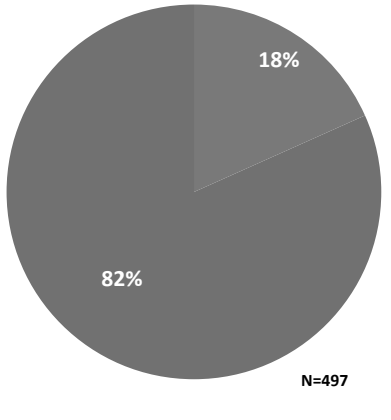
Extension Material



Refreshment

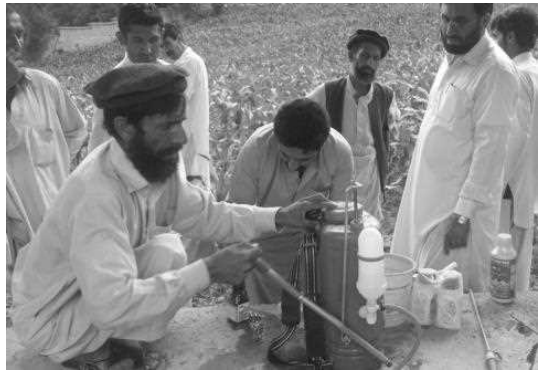


Participation of AO



Field Work 2

Practical Extension Activities



Field Work 2

Practical Extension Activities

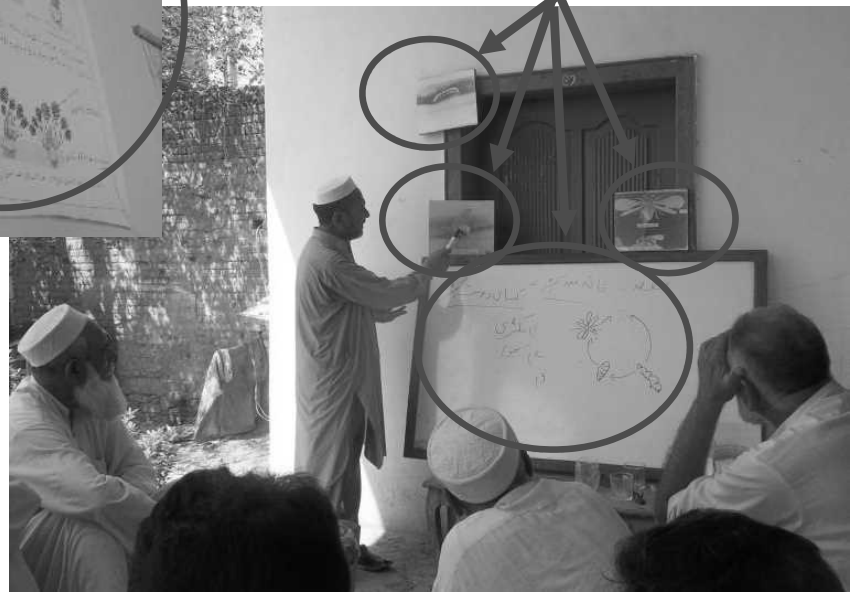
Field Work 2

Utilizing
Facilitation Skill

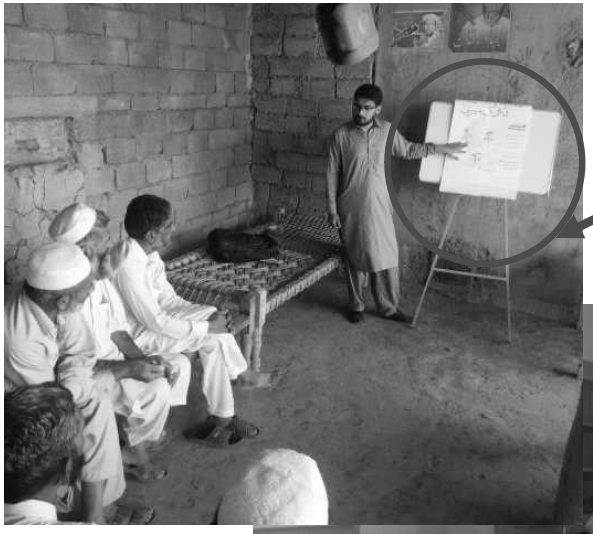
Extension materials drawn and prepared by FA

Use of available drawing and whiteboard for explanation

Use of Materials



Use of Materials prepared by FA by himself



Use of Materials which FA Prepared by himself

Use of Materials

5. Materials Development (1)

1. Reference Book (Training Sub-Textbook) for AO/ FA in Urdu

- Volume 1: Cereals Crops
- Volume 2: Vegetable Crops
- Volume 3: Fruits Crops

2. Pest and Diseases

1) Easy to Carry Type Field Note for AO/FA

- Identification of Around 80 Major Pests and Diseases
- 9 major crops: 2 cereal crops, 3 vegetable crops and 4 fruit crops

2) Booklet on "Treatment on 20 Major Pests and Diseases"

3) Posters for 10 Major Crops

5. Materials Development (2)

3. Booklets and Pamphlets for KP Province Farmers

1) Wheat Pamphlet: 3 Different Pamphlets

Pamphlet on i) Cultivation , ii) Weed Control and ii) Harvesting/ Post Harvesting, supporting Wheat Seed Distribution

2) Fruit Booklet

Booklet on Fruit Cultivation , Pruning Techniques, Insect/ Pest Management, Harvesting/ Post Harvesting , supporting Fruit Seedling Distribution

3) Compost Booklet

4) Vertebrate Control Booklet

5. Materials Development (3)

4. Audio Visual Aid

- Video on Fruit Fly Control
- Video on Pruning
- Video on Grafting

5. Others

- Project Newsletter: Vol.1 – Vol.8
- Project Video 1 & Project Video 2

6. Others

1. Provision of Training Equipment to API

2. Provision of Multimedia/ PC to KP Province

- Model Farm Service Centre

3. Provision of Pruning Kit to KP Province

- 77 sets
- Model Farm Service Centre and Agriculture Circle Office

4. Gilgit- Baltistan Study Visit

- Study visit to JICA Technical Cooperation Project "The Project for Promotion of Value Added Fruit Products in Gilgit-Baltistan"
- 13 Participants (3 SMS, 3 AO, 6 FA)
- Understand and learn from the farmers in Gilgit-Baltistan on cultivation techniques, post-harvest techniques and marketing.

7. Follow-Up Workshop (1): General Information

Dates:

FU-WS 1: 4 January 2016
FU-WS 2: 7 January 2016
FUWS 3: 29 February 2016
FU-WS 4: 3 March 2016
FU-WS 5: 22 September 2016
FU-WS 6: 26 September 2016
FU-WS 7: 3 April 2017
FU-WS 8: 6 April 2017
FU-WS 9: 10 April 2017
FU-WS 10: 13 April 2017

Participants:

	FUWS 1	FUWS 2	FUWS 3	FUWS 4	FUWS 5	FUWS 6	FUWS 7	FUWS 8	FUWS 9	FUWS 10	Total
AO/ SMS	9	16	8	10	11	1	14	14	10	11	**104**
FA	21	25	25	24	20	28	27	22	25	27	**244**

7. Follow-Up Workshop (2): Review of the Training

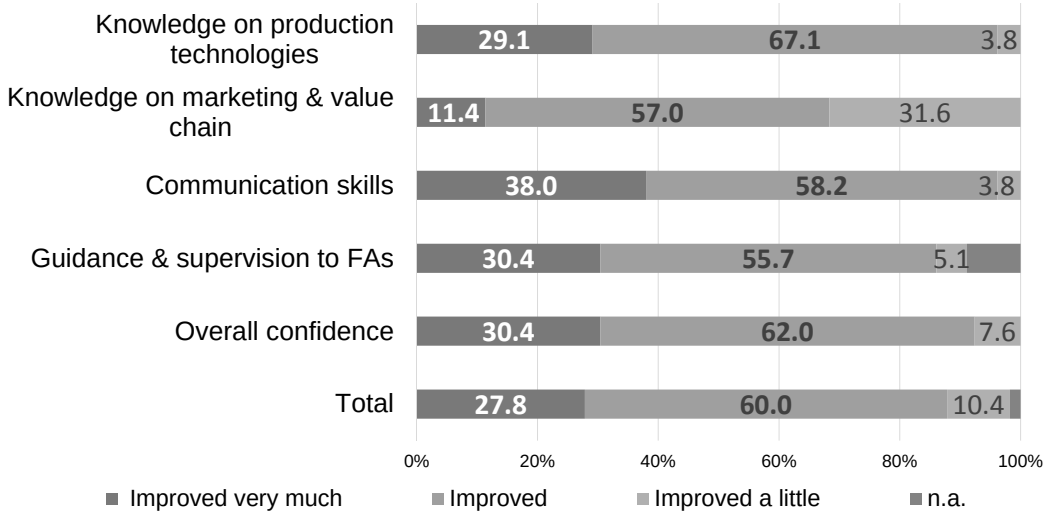
(1) Result of the Training

- Participants acquired various **KNOWLEDGE** and **SKILLS** on modern agricultural technologies.
- **COMMUNICATION**, **FACILITATION** and **PRESENTATION SKILLS** were improved.
- Participants are now able to **IDENTIFY FARMERS' PROBLEMS**, **PLAN** their extension activities as well as to utilize various **EXTENSION METHODOLOGIES**.
- Participants developed **LINKAGES** with **NARC SCIENTISTS** through which they can seek advise when they face problems in the field.
- By disseminating technologies that bring good results, extension staff gained **INCREASED TRUST** from farmers.
- **OVERALL CONFIDENCE** and **MOTIVATION** for carrying out extension activities towards farmers have notably been increased.

7. Follow-Up Workshop (3): Review of the Training

(2) Result of the Self Evaluation by Participants (FUWS 3-10)*

a. Agricultural Officers and Subject Matter Specialists

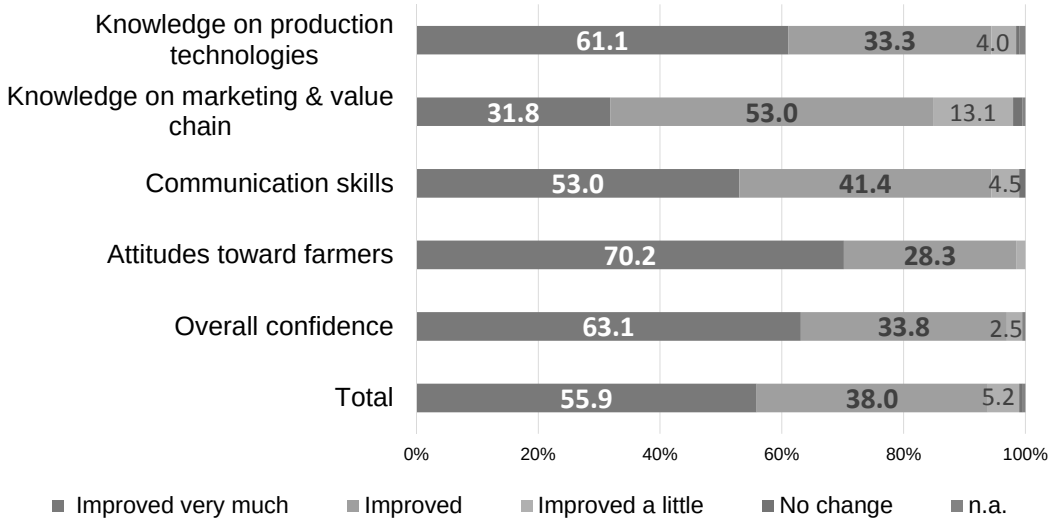


Note : * This evaluation was not conducted in FUWS 1 and 2

7. Follow-Up Workshop (4): Review of the Training

(2) Result of the self evaluation by participants (FUWS 3-10)*

b. Field Assistants



Note : * This evaluation was not conducted in FUWS 1 and 2

7. Follow-Up Workshop (5): Review of the Training

(3) Challenges in the Field Work (Routine Extension Activities)

- Insufficient provision of the resource for the field work
  e.g., transport, refreshments, handouts for farmers, materials for demonstration
- Heavy workload and various clerical duties of field staff
- Wide geographical coverage against limited number of field staff
- Difficulties in arranging field activities at optimal timing
- Aid dependency / over expectation among the farmers
- Farmers' reluctance in adopting new technologies

8. Follow-Up Activities (1)

(1) Follow-up Visits of the Field Work 2

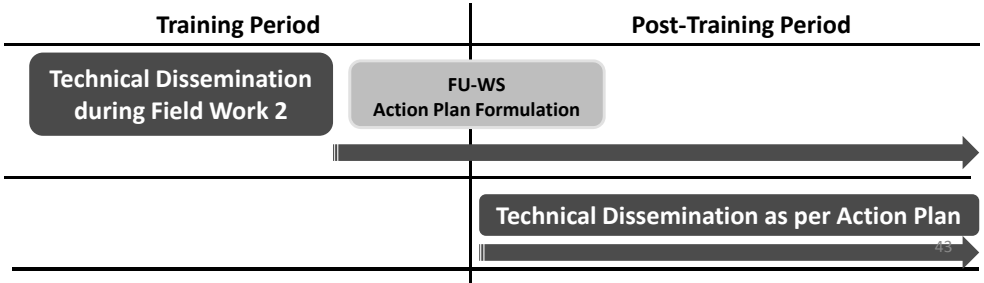
Purpose: Confirmation on the degree of application of technologies by the farmers who had been disseminated with technologies by FAs during Field Work 2.

Timing: A few months after the dissemination activities (after the specific season of the crop and timing of technology application).

(2) Follow-Up on the Action Plan implementation

Purpose: Confirmation on the execution of planned activities by the FAs

Timing: At the time of planned dissemination in accordance with the respective action by FAs



8. Follow-Up Activities (2)

(1) Follow-up Visits of the Field Work 2

Purpose: Confirmation on the degree of application of technologies by the farmers who had been disseminated by FAs during Field Work 2.

Timing: A few months after the dissemination activities (after the specific season of the crop and timing of technology application).

Findings of Follow-Up Visits of Field Work 2

Number of Follow-Up Visit Conducted	136 Cases
Number of Cases in which **Farmers Applied the Disseminated Technologies**	**123** Cases out of 136 Cases (**90 %**)
Number of Cases in which **Farmers got Good Results from the Disseminated Technologies**	123 Cases out of 123 Applied Cases (**100 %**)

Reasons for the technologies not applied

- Farmers did not grow the target crop in this season.
- Recommended materials were not available or expensive in the market.
- Farmers noticed that the effect of the recommended technology is insufficient to solve the problem.
- Farmers did not fully understand the technology in one extension activity.

8. Follow-Up Activities (3)

(2) Follow-Up on the Action Plan Implementation

a. Purpose: Confirmation on the execution of planned activities by the FAs

b. Timing: At the time of planned dissemination in accordance with the respective action by FAs

c. Action Plan: as of April 2017

Number of Action Plan Conducted	**264** Activities
Number of Farmers Participated	**1,800 Farmers** in 264 Activities
Number of Farmers Participating per Activity	**6.8 Farmers per Activity**

d. Remaining Action Plan already formulated: 486 Activities

More than **3,300 farmers**

could be reached with technologies and knowledges learnt from the training, if these remaining activities are going to be conducted.

C. Project Achievement against Indicators

Project Achievement against Indicators (1)

A: Output Level

1) Output 1:

Demand-based training curricula for capacity development of agriculture extension staff (Agriculture Officers and Field Assistants) are developed by NARC.

Indicator 1 **Training Curricula are developed** according to the Requirement of AOs and FAs.	**Achievement: Achieved** **The training curricula have been developed** according to the requirement of AOs and FAs.
Indicator 2 At least **80%** of the Training Participants Evaluate the Curricula as Useful for their Extension Services	**Achievement: Achieved** **93.2%** of the training participants evaluated the curricula as useful for their extension services.

Project Achievement against Indicators (2)

A: Output Level

1) Output 2:

Agriculture Officers obtain necessary skills to guide, supervise and monitor the extension activities through training in NARC.

Indicator 1 At least **70%** of the trained AOs increase the scores of post-tests from the scores of pre-tests.	**Achievement: Achieved** **74.8%** of the trained AOs increased the scores of post-tests from the scores of pre-tests.
Indicator 2 At least **80%** of trained AOs evaluate their knowledge and skills to guide and supervise the FAs as improved through the training.	**Achievement: Achieved** **94.4%** of the trained AOs evaluated their knowledge and skills to guide and supervise the FAs as improved through the training.

Project Achievement against Indicators (3)

A: Output Level

1) Output 3:

Field Assistants obtain necessary knowledge and skills to carry out extension service activities through training by NARC.

Indicator 1 At least **70%** of the trained FAs increase the scores of post-tests from the scores of pre-tests.	**Achievement: Achieved** **91.2%** of the trained FAs increased the scores of post-tests from the scores of pre-tests.
Indicator 2 At least **80%** of trained FAs evaluate their extension skills as improved through the training.	**Achievement: Achieved** **94.2%** of the trained FAs evaluated their extension skills as improved through the training.

Project Achievement against Indicators (4)

A: Output Level

1) Output 4:

Field implementation of extension activities and monitoring in KP are strengthened.

Indicator 1 At least **80%** of the trained FAs conduct field extension activities for farmers by utilizing their learning from the training.	**Achievement: Achieved** **100%** of the trained FAs conducted field extension activities for farmers by utilizing their learning from the training.
Indicator 2 At least **50%** of the field extension activities by the FAs are monitored/ supervised by relevant personnel.	**Achievement: Achieved** **All (100%)** of the dissemination activities conducted by the trained FAs by the end of April 2017 have duly been reported to respective AOs and other relevant extension personnel. It is reported by M&E officers that **more than a half (50%)** of FAs consulted with and sought advice from the AO/SMS prior to the actual conducts of dissemination, while some AOs also participated in 17.6% of these activities in the field.

Project Achievement against Indicators (5)

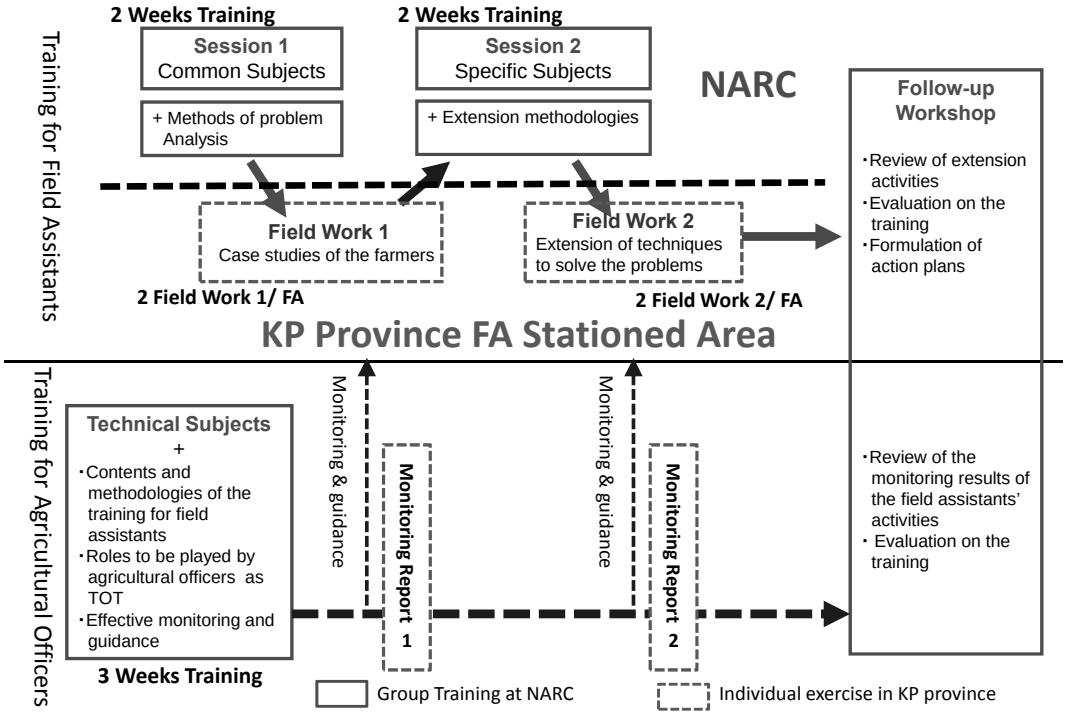
B: Project Purpose Level

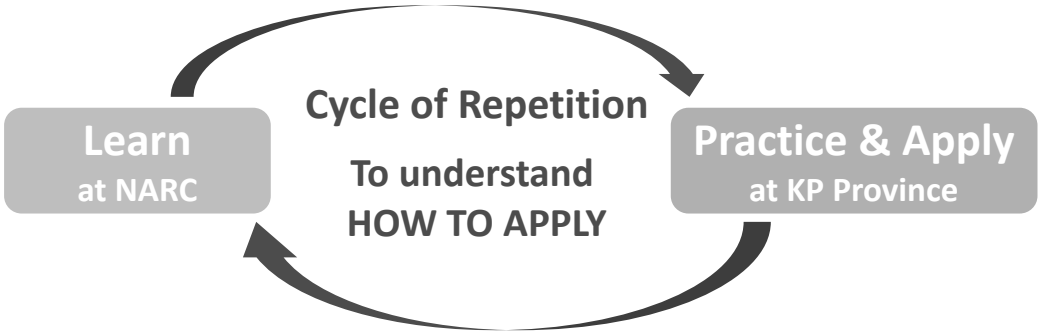
Agricultural knowledge and extension skills of extension service staff in KP are improved.

Indicator 1 A total of **350 extension service staff are trained** and certified by the end of the project.	**Achievement: Achieved** A total of **357 extension service staff was trained** and certified by the end of April 2017.
Indicator 2 At least **400 dissemination activities** are conducted to deliver agricultural knowledge and/or production techniques to farmers by the trained FAs by the end of the Project.	**Achievement: Achieved** **761 dissemination activities** have been conducted by the trained FAs by the end of April 2017, through which agricultural knowledge and/or production techniques were delivered to farmers in KP.

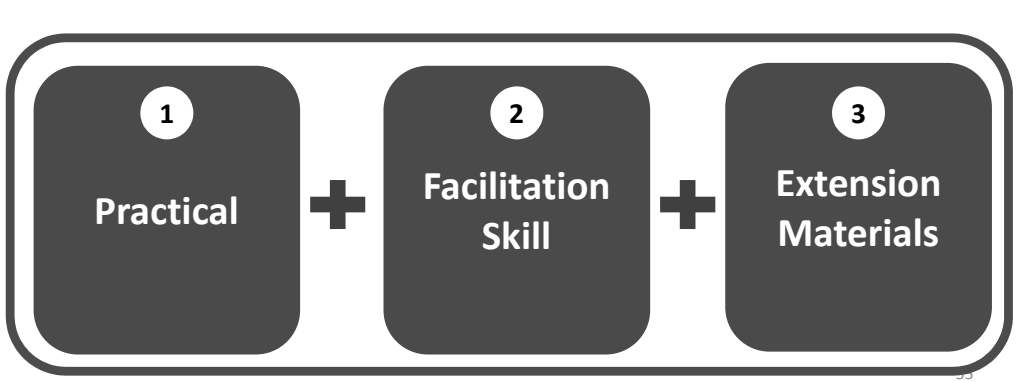
D. Impact of the Project

STRUCTURE OF THE TRAINING

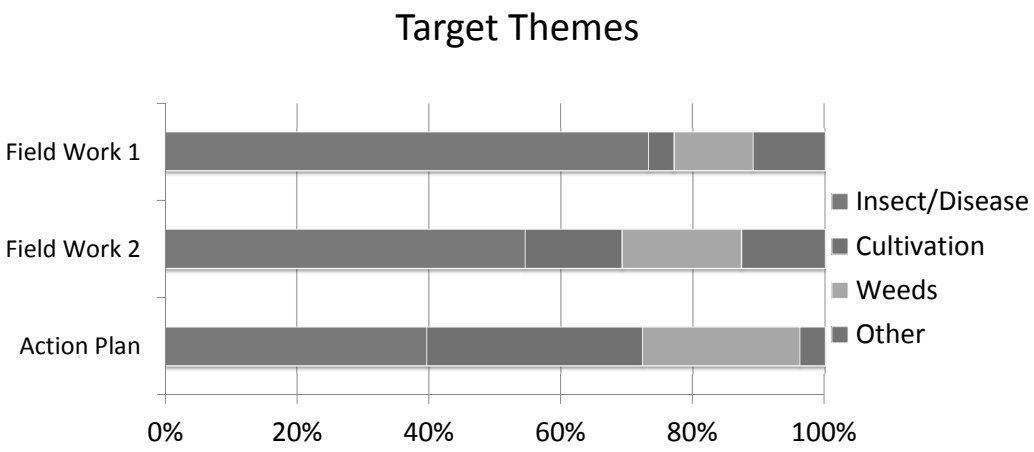




Technical Knowledge



1. Field Works and Extension Activities after Training by FAs



Targeted Themes for extension activities shifted to **Preventive Measures of Insect/ Disease through Cultivation Techniques**, e.g., line sowing, seed treatment, from **Insect/Disease Symptomatic Treatment**.

2. Farmers Reached within "Training" and "After Training"

Field Work 2 @ KP
2 Extension Activities/FA
497 Activities
4,022 Farmers
Reached within "Training"

+

Action Plan Activities @ KP
After Training
264 Activities
1,800 Farmers Reached
Note: Activities which Project could monitor

Total **761** Activities

Total 5,822 Farmers Reached

3. Farmers whom were Reached

90%
of Disseminate
Technology **Adopted**

100% Farmers
who adopted got **GOOD Result**

E. Recommendations for Next Step

Recommendations (1)

A) Inclusion of "Evaluation" in Training

Evaluation is essential to understand whether the training conducted met the participants' needs and expectations, and to modify the training accordingly. The Project conducted series of evaluations;

Type of Evaluation	What could be understood from Evaluation
Pre/Post Test	Understand what participants gained as knowledge from the training.
Daily Sessions Evaluation	Understand whether the session contents were relevant with Participants and whether the teaching methods matched with the participants.
Re-Sessions Evaluation at end of the training	Re-defining whether the sessions were relevant and useful for the participants after completing the training
Overall Training Evaluation	Understand whether the training, including pre-information, training contents, materials, lodging, etc., were satisfactory to the participants.

Recommendations (2)

B) Integration of "Field Work" in the Training Flow

New knowledge acquired may easily be lost, if the learners are not aware or not given opportunity of applying them. Without actual application, we cannot identify what we understood and what we did not understand.

C) Maximum Utilization of Extension Materials

- The Project produced various extension materials, such as textbooks, booklets, handbooks, posters, and technical videos, all in Urdu.
- As DoAE KP Province has its websites and is now developing applications for smartphone, these materials could be uploaded to these tools for further dissemination.
- Prompt actions to upload these materials, even at the point where the applications are not completely finished, would certainly benefit the FAs and farmers.

Thank You Very Much!

Recommendations (2)

D) Support to FAs for their Extension Activities

- Through practical experiences of dissemination activities through the training, the FAs increased overall confidence and became eager to conduct "Action Plans".
- From the project's data, it is estimated that around **PKR.1000/ activities/ FA**, including transportation, refreshment, tools, could support FA to conduct field activities to reach and disseminate farmers with technologies and knowledges learnt from the training.

Appendix 6-1: Other Activities

CUDBAS Workshop Result (February 2015)

CUDBAS CHART

Date 18th February 2015
Object Job Analysis for Field Assistant with KP Province SMS/ AO/ FA

Note: A = Most Importatnt, B = Important, C= Not in Urgent Needs

Duty	Ability																					
1	1-1	A	1-2	A	1-3	A	1-4	A	1-5	A	1-6	A	1-7	A	1-8	B	1-9	B	1-10	B		
Protect Crop from Diseases and Insects	Know disease control of vegetable crops		Know insect pest of fruits and vegetables		Can recommend fungicide for disease control		Know pesticide uses		Can perform pest scouting		Can control weeds		Can identify various agriculture hazards		Can diverse farmers from traditional agriculture to latest farming		Can check pesticide and fertilizer dealers		Know disease of grain			
	1-11	B	1-12	B	1-13		1-14		1-15		1-16		1-17		1-18		1-19		1-20			
	Know about store grain pests		Can distinguish between pest and predators																			
2	2-1	A	2-2	A	2-3	A	2-4	A	2-5	A	2-6	B	2-7		2-8		2-9		2-10			
Manage Orchards	Can do orchard layout		Be in a position to layout an orchard		Know the correct method of pruning		Know floriculture farming		Know which kind of fruits can grow in his locality		Can do layout mangement											
3	3-1	A	3-2	A	3-3	A	3-4	A	3-5	B	3-6	B	3-7	B	3-8		3-9		3-10			
Grow Vegetables	Know vegetable cultivation		Know about off-season vegetables production		Can do site selection for crops and vegetables		Know about kitchen gardening		Know Rabi vegetables of their respective area and hybrid crops		Can do grow vegetables		Can facilitate farmers and grading									
4	4-1	A	4-2	A	4-3	A	4-4	A	4-5	A	4-6		4-7		4-8		4-9		4-10			
Use Fertilizers Efficiently	Knows the fertilizer recommendations according to nutrient requirement of crops		Can distinguish between disease and nutrient deffencies		Know the methods of fertilizer application		Can do soil, fertilizer and pesticide sampling		Know dozes of fertilizer application													
5	5-1	A	5-2	A	5-3	A	5-4	A	5-5	A	5-6	B	5-7	B	5-8	B	5-9	B	5-10			
Grow Cereal Crops	Know about wheat and maize for better production		Can grow cereal crops		Know the method of wheat growing		Knows the agronomic practices		Can identify recommended varieties of cereals		Can understand the varities characteristics of crops		Can specify different crops to different ecological zones		Know improved varieties of crops		Can do best crops mangement techniques					
6	6-1	A	6-2	A	6-3	A	6-4	A	6-5	A	6-6	A	6-7	A	6-8	A	6-9		6-10			
Apply Extension Methods	Can conduct farmer field school		Can manage the field days		Be prepared to handle the emergency conditions i.e. disease attack in the area		Can do social mobilization in field		Can do extension workers' training in field		Can convince farmers to adopt new technologies		Can do extension work efficiently		Know about social structure of their respective areas							

CUDBAS CHART

Date 18th February 2015
Object Job Analysis for Field Assistant with KP Province SMS/ AO/ FA

Note: A = Most Importatnt, B = Important, C= Not in Urgent Needs

Duty	Ability																			
7	7-1	A	7-2	A	7-3	A	7-4	A	7-5	B	7-6		7-7		7-8		7-9		7-10	
Use Agriculture Machinery	Can maintain tractor machinery log book record		Know maintenance of tractor		Know the basic knowledge of machinery maintenance		Can handle/ overcome the problem of agriculture machinery		Can operate spray pump											
8	8-1	A	8-2	A	8-3	A	8-4	A	8-5	B	8-6	B	8-7		8-8		8-9		8-10	
Can Write Reports	Can prepare the reports		Can manage stock entry		Can do report writing		Know maintain the stock register		Can prepare agriculture calendar activity		Can collect farmers' problems									
9	9-1	A	9-2	A	9-3	A	9-4	A	9-5	B	9-6	B	9-7		9-8		9-9		9-10	
Know Post Harvest Loses	Knowledge about post harvest technology		Know how to preserve the surplus produciton		Can do fruit and vegetable preservation		Be in positon to store excess fruit and vegetables		Can do post harvest technologies		Know value addition									
10	10-1	A	10-2	A	10-3	A	10-4		10-5		10-6		10-7		10-8		10-9		10-10	
Can Produce Seeds	Know seed multiplication process		Can do share hybrid production per acre with farmers		Can do help farmers about seed															
11	11-1	A	11-2	A	11-3	A	11-4	A	11-5	B	11-6	B	11-7		11-8		11-9		11-10	
Can Motivate Farmers	Ability to talk and deliver his message to farmers		Can pursuate farmers for innovation/activity		Can make the groups of farmers		Knows the local languages		Be encourged and motivated on the basis of field duty allowances		Can do farmers motivated to new technology of farming									
12	12-1	A	12-2	A	12-3	A	12-4	A	12-5	B	12-6	B	12-7		12-8		12-9		12-10	
Understand Soil Management	Know soil types		Know the soil problems		Can take soil samples		Know soil conservation control		Know land preparation		Know the measurement of field/land									
13	13-1	A	13-2	A	13-3	A	13-4		13-5		13-6		13-7		13-8		13-9		13-10	
Understand Water Requirement for Crops	Know crop water requirement of different crops		Know methods of irrigation		Know irrigation intervals of crops orchard															
14	14-1	A	14-2	A	14-3	A	14-4	A	14-5	B	14-6	B	14-7		14-8		14-9		14-10	
Know New Crops	Know the organic farming techniques		Know mushroom cultivation		Know honeybee production		Know cutflower technology		Know jatropha production		Can do fermentors activities									

CUDBAS CHART

Date 18th February 2015
Object Job Analysis for Field Assistant with KP Province SMS/ AO/ FA

Note: A = Most Importatnt, B = Important, C= Not in Urgent Needs

Duty	Ability																			
15	15-1	A	15-2	A	15-3	B	15-4		15-5		15-6		15-7		15-8		15-9		15-10	
Understand Marketing Techniques	Know marketing situation		Know WTO standards for crop vegetable production		Can market the surplus produce															
16	16-1	A	16-2	A	16-3	A	16-4	A	16-5	A	16-6		16-7		16-8		16-9		16-10	
Can Manage Nurseries	Can do nursery raising		Can do budding, grafting		Know plant protection knowledge		Can do cutting, budding, grafting (A sexual propagation methods)		Nursery knowledge											
17	17-1	A	17-2	A	17-3	A	17-4	A	17-5		17-6		17-7		17-8		17-9		17-10	
Understand Cropping Patterns	Know agricultural activity calendar		Knows the cropping pattern of the area		Can do maize crop properly		Know about weather forcast													
18	18-1	A	18-2	A	18-3	A	18-4	B	18-5	B	18-6	B	18-7	B	18-8	B	18-9	B	18-10	C
Lead Farmers	Can analyze farmers		Know how to deliver lecture to farmers		Can face different situation arise during duty		Be in friendly environment with farmers		Can do technology transfer		Can discuss with farmers about their economic problems		Can discuss with farmers about their social problems		Be cool minded		Know how to lead		Know institutions to be contacted for problem solution in the area	
19	19-1	A	19-2	A	19-3	A	19-4	A	19-5	B	19-6	B	19-7	B	19-8	B	19-9	B	19-10	B
Behave Better	Be in good sprit		Know about cluster farming		Be in good mood		Be a innovative		Know job description		Know coordinating with line departments		Be interactive with farmers and staff members		Be in attitude better behavior among the farmers		Be friendly with farmers		Be encouraged on the basis of HRD practices	
	19-11	B	19-12	B	19-13	B	19-14		19-15		19-16		19-17		19-18		19-19		19-20	
	Be in language style farmers gain your lecture		Be in cooperative with custumers		Be in time															
20	20-1	A	20-2	A	20-3		20-4		20-5		20-6		20-7		20-8		20-9		20-10	
Manage Activities	Know his job		Know sufficient anout agriculture																	
21	21-1	A	21-2	A	21-3	B	21-4	B	21-5	B	21-6	B	21-7	B	21-8	B	21-9	B	21-10	B
Misc.	Know farmers problems of the area		Can initiate an activity according to the need assessment		Be adapted attitude of feed back to his boss		Can do registration of farmers of farm services centre		Can layout demonstraytion plots		Can invovle the farming community in decision making		Be in excellent facility of mobility and communication		Can diffuse the innovation		Know about general trend in climetate change		Know about management	
	21-11	B	21-12	B																
	can do best practices		Know how to identify and solve problems																	

Appendix 6-2: Other Activities

List of Equipment for API- NARC

Equipments Procured for API-NARC

	Name of Equipment	Necessity of Installation Work	Purpose of Use	Required Accessories	Q'ty	Manufacturer, Model and Specification
1	Sound System	Yes	Will be used for lecture for trainees	with standard accessories	1	Manufacturer: TOA Model: 2128 Specification: 2 Ceiling Speakers, Amp 2128,1 MIC Collar. 1 MIC Wireless, • CD Player; • USB (support up to 32GB); • SD/MMC card (support up to 32GB); • Mic input x 5 (phone jack x 1, combination XLR & phone jack x 1); • Line input (RCA x 3 or phone jack x 1); • Digital echo system Operating Time Average 3-9hrs Power Supply 100-240V (90-264V) switching power supply or batteries Charging Time 12V/5Ah (2pcs) Lead acid battery: 6-8hrs
2	Multimedia Projector	Yes	Will be used for lecture for trainees	Carry Case, Power Cable, Connecting Cables, etc.	1	Manufacturer: SONY Model: VPL - EX 255 Specification:* 3300 lumens 3LCD Projector, 3300:1 Contrast Ratio, Native XGA (1024 x 768) Resolution, Up to 10000h expected lamp life, 1.6x Optical Zoom, 16W Speaker, Versatile inputs including HDMI, 2xRGB, Mic Input USB image viewer function, RJ45 for network control and monitoring Wireless image transfer (Optional IFU-WLM3 required)
3	Projector Screen	Yes	Will be used for lecture for trainees	with standard accessories	1	Manufacturer: Aurora Model: Specification: Fix Wall Hanging screen Size 8 x 10 feet Motorized Fine fabric Lightweight Environmental friendly
4	Laptop	No	Will be used for lecture for trainees	With carrying case, Charger etc.	1	Manufacturer: DELL Model: Inspiron 5547 Specification:DISPLAY Screen resolution: 1920x1080, Screen size: 15.6in GRAPHICS CARD: 2GB Dedicated MEMORY RAM: 8GB PROCESSOR : Intel 4th gen Core i7-4510U, STORAGE Drive speed: 5400 rpm, cache: 8GB, Internal storage: 1TB Supported memory media: SD Operating system: Windows 8.1 MS Office 2013 Pro with HD Webcam
5	UPS (4KVA)	Yes	For backup of elecricity load-sheding of lecture Hall	with standard accessories	1	Manufacturer: APC Model: SRC 6000 XLI Specification:Rating 6KVA without battery bank True online (Double coversion), pure sine output, wider input range 220VAC+/-25% stabilized Output 220VAC Make Country (Philipine)
6	CHAIRS WITH SIDE ARMS	No	Will be used for lecture for trainees	N/A	30	Manufacturer: Hassan Brother Specification:Material: Fabric Frame Maerial: Steel Size: 48x43x80 cm Chair Frame: Painted or Chormed Framce thickness: 1.0 mm, 1.2 mm, 1.5 mm Colour: Black, Blue, Grey
7	ROSTRUM	No	To be used by instructor for delivering lectures	N/A	1	Manufacturer: Hassan Brother Specification:Size: 2.5x2.5x.3.75 (Feet) Wood Polished with one draw
8	Desktop Computer	Yes	Computer Lab	Key Board, Mouse, Cables, etc.	25	Manufacturer: DELL Model: Optiplex 9020 MT Specification: Processor: Core i7 - 4770 3.4Ghz 4GB Ram 500 GB Hard Disk Drive Hard Drive Type: SATA HDD Rpm: 7200 LED Screen 18.5 inches Graphics: Intel HD Graphics SUPER Drive Windows 8.1 Pro
9	NETWORKING SWITCH	Yes	Computer Lab	DATA POINTS / SOCKETS uni 10 2x i/o's,Back Box, Face Plate, Mounting Frame	1	Manufacturer: Cisco Model: SRW248G4 - K9 Specification:48-Port Ethernet Switch with WebView DATA POINTS / SOCKETS uni 10 2x i/o's,Back Box, Face Plate, Mounting Frame

	Name of Equipment	Necessity of Installation Work	Purpose of Use	Required Accessories	Q'ty	Manufacturer, Model and Specification
10	SERVER	Yes	Computer Lab	with standard accessories	1	Manufacturer: DELL Model: PET 110 Specification:Processors: Quad-core Intel® Xeon® processors 3400 series, Cache 8MB Chipset Intel® 3420 Hard disk drive 1tb x2 16GB Ram, 18.5 inch LED Screen Super Drive
11	LICENCED SOFTWAR E SERVER	Yes	Computer Lab	with standard accessories	1	Manufacturer: MicroSoft Model: MS Office Specification: PROFESSIONAL MS Office 2013
12	Software Server 2012 Enterprise (Standard)	Yes	Computer Lab	with standard accessories	1	Manufacturer: Microsoft Model: Server 2012 Specification: Software Server 2012 Enterprise (Standard)
13	Colour LaserJet Printer	Yes	Computer Lab	with standard accessories	1	Manufacturer: HP Model: Colour LaserJet Pro 400 - 476 DW MFP Specification:DUPLEX PRINT OPTIONS Automatic PRINT SPEED1 ISO Speed: Up to 36 ppm black, Up to 36 ppm color; Maximum Print Speed: Up to 55 ppm black, Up to 55 ppm color PRINT RESOLUTION Black (best): Up to 1200 x 1200 optimized dpi from 600 x 600 input dpi Color (best): Up to 2400 x 1200 optimized dpi from 600 x 600 input dpi FAX SPEED Up to: 33.6 kbps MEMORY 768 MB DUTY CYCLE (MONTHLY) Up to 50,000 pages (A4) AUTO DOCUMENT FEEDER CAPACITY: Standard, 50 sheets SCAN TYPE Flatbed, ADF
14	Printer	Yes	Computer Lab	with standard accessories	1	Manufacturer: HP Model: LaserJet Enterprise M600-601DN Specification:Print speed black: Normal: Up to 45 ppm First page out (ready): Black: As fast as 8.5 sec Print quality black (best): Up to 1200 x 1200 dpi Duty cycle (monthly, A4): Up to 175,000 pages Print technology: Laser Processor speed: 800 MHz Display: 2.25-in, 4-line LCD (text) Connectivity, standard Memory, standard: 512 MB Paper handling input, standard: 100-sheet multipurpose tray 1 500-sheet input tray 2 automatic duplex printing Output capacity: Up to 250 sheets
15	UPS (4kva)	Yes	Server Room	with standard accessories	1	Manufacturer: APC Model: SRC 6000 XLI Specification:Rating 6 KVA without battery bank True online (Double coversion), pure sine output, wider input range 220VAC+/-25% stabilized Output 220VAC Make Country (Philipine)
16	UPS (6kva)	Yes	Computer Lab	with standard accessories	1	Manufacturer: APC Model: SRC 6000 XLI Specification:Rating 6 KVA without battery bank True online (Double coversion), pure sine output, wider input range 220VAC+/-25% stabilized Output 220VAC Make Country (Philipine)
17	LED TV Screen	Yes	Computer Lab	with standard accessories	1	Manufacturer: SONY Model: KDL 47 R 500 47" BRAVIA Multisystem 3 D LED Specification:Screen Size: 47" (119 cm) , 16:9 Picture: Display Resolution Full HD Audio: Sound Booster, Sound Mode Standard, Music, Cinema, Game, Sports, Dolby® MS10 (Dolby® Digital Plus, Dolby® Pulse) Terminals: HDMI™ Connections Other Features: USB Play, Scene Select Music, Cinema, Game, Graphics, Sports, Parental Control, Clock, Sleep Timer, On/Off Timer, TV Guide On-Screen/EPG ECO friendly Supplied Accessories: Remote Control RM-ED055, Batteries R03
18	Air Conditioner	Yes	Computer Lab	with standard accessories	2	Manufacturer: Mitsubishi Model: MS - 18 Specification:Reversible AC Size: 1.5 TON Capacity: 10000-12500 Btu/h Auto Restart: Yes Airflow 14.6 (m cube/h) Noise level 33 (DBA) Timer Yes Dimensions (WxHxD) 780 x 298 x 210 mm Remote control Yes

	Name of Equipment	Necessity of Installation Work	Purpose of Use	Required Accessories	Q'ty	Manufacturer, Model and Specification
19	Tables	No	Computer Lab	with standard accessories	25	Manufacturer: Hassan Brother Model: Specification:Computer Lab Table Wood Style 2-Pannel (5Nosx2=10 seats), Size: 1200Lx600Wx750H (mm) 3-Pannel (5Nosx3+15 seats), Size: 1800Lx600Wx750H (mm) Cupboard: High density MDF, scrach resistant Colour: Grey & Brown
20	Chairs	No	Computer Lab	with standard accessories	25	Manufacturer: Hassan Brother Model: Leto (Boohoo) Specification: Material: Plastic Frame, Fabric Size: 48-58x46x89-92cm Height: 95-105 cm Colour: Black OR Blue Function 1: Seat Height Control Function 2: Back tilt control Foam: High density foam
21	Rostrum	No	Computer Lab	N/A	1	Manufacturer: Hassan Brother Model: Specification: Size: 2.5x2.5x.3.75 (Feet) Wood Polished with one draw
22	Table	No	Server Room	N/A	1	Manufacturer: Hassan Brother Model: Specification: Material: Wooden Stands Material: Steel Size: 2200Wx800Dx750H mm Colour: Grey & Wood Table Legs: Metal/Aluminium
23	Chair	No	Server Room	N/A	1	Manufacturer: Hassan Brother Model: Factor Low Back (Malaysia) Specification: Size: standard 78x63x64cm Colour: Black Function 1: Seat Height Control Function 2: Back tilt control Metal Type: Iron Specific use: Office Material: Metal Foam: High density foam
24	Motion Pic Camera	No	General	with standard accessories	1	Manufacturer: SONY Model: HDR - PJ 270 Specification: • Superior 12-megapixel • On-screen Feature Guide • Creative Auto and Basic+ • HD video capture • ISO 100-6400 sensitivity • Wide-area 9-point AF system
25	Stil Pic Camera	No	General	Shoulder Strip, Batteries, Pouch etc	1	Manufacturer: SONY Model: DSC - H200 Specification: Effective Pixels: 16 26x optical zoom 720p OR higher HD video 3.0" LCD Storage Media: SD memory card 16-32 GB 360 degree Sweep Panorama mode Advanced flash Auto mode Face Detection and Smile Shutter technologies Lens CapMulti USB cable
26	Scanner	Yes	General	with standard accessories	1	Manufacturer: HP Model: N 6310G Specification: Media size (ADF): A4, A5, legal Media types: Paper (plain, inkjet, photo), envelopes, cards (index, greeting), 3-D objects Scan resolution, hardware: Flatbed: up to 1200 x 2400 dpi , ADF: up to 600 x 600 dpi Automatic document feeder scan speed: Up to 15 ppm/6 ipm Includes Powerful Document Software

	Name of Equipment	Necessity of Installation Work	Purpose of Use	Required Accessories	Q'ty	Manufacturer, Model and Specification
27	Photo Copier	Yes	General	with standard accessories	1	Manufacturer: Konica Minolta Model: 454e Scan Main: 600dpi × Sub: 600dpi Print 1,800 dpi (equivalent) × 600 dpi Memory Capacity (Std./Max.) 2 GB HDD 250 GB Original Type Sheets, Books, Objects Size A3 (11" × 17") Warm-Up Time: 25 sec. First Copy Out Time: 4.6 sec. Copy Speed (A4 Crosswise): 45 ppm Paper Capacity(80g): Tray 1 500 sheets (up to A3), Tray 2 500 sheets (up to SRA3), Multiple Bypass Tray 150 sheets (up to SRA3) Max. Paper Capacity (80g/m2)*5 6,650 sheets Paper Weight Tray 1 / 2 52 to 256 g/m2, Multiple Bypass Tray 60 to 300 g/m2 Multiple Copy 1 to 9,999 sheets Auto Duplex Paper Size Width: 100 to 320 mm, Length: 148 to 457.2 mm, Paper Weight 52 to 256 g/m2
28	Generator	Yes	General	with standard accessories	1	Manufacturer: Cummins Model: 16 KVA Specification: 16 KVA 3 phase, 235/400 volts, 50 Hz with Digital Panel, 3000RPM 4, Canopy, ATS Panel, Concrete Foundation Bed, Earthling with Rod, 16MM 4 Core cooper wire, 76/110 Control wire, Duct pipe, Installation and Transportation
29	Binding Machine	No	General	with standard accessories	1	Manufacturer: COMB Model: Specification: Paper Size: A4 Punching Capacity: 20-25 sheets Hole Distance: 3 different adjustments

Appendix 6-3: Other Activities

Examples of Good Practices

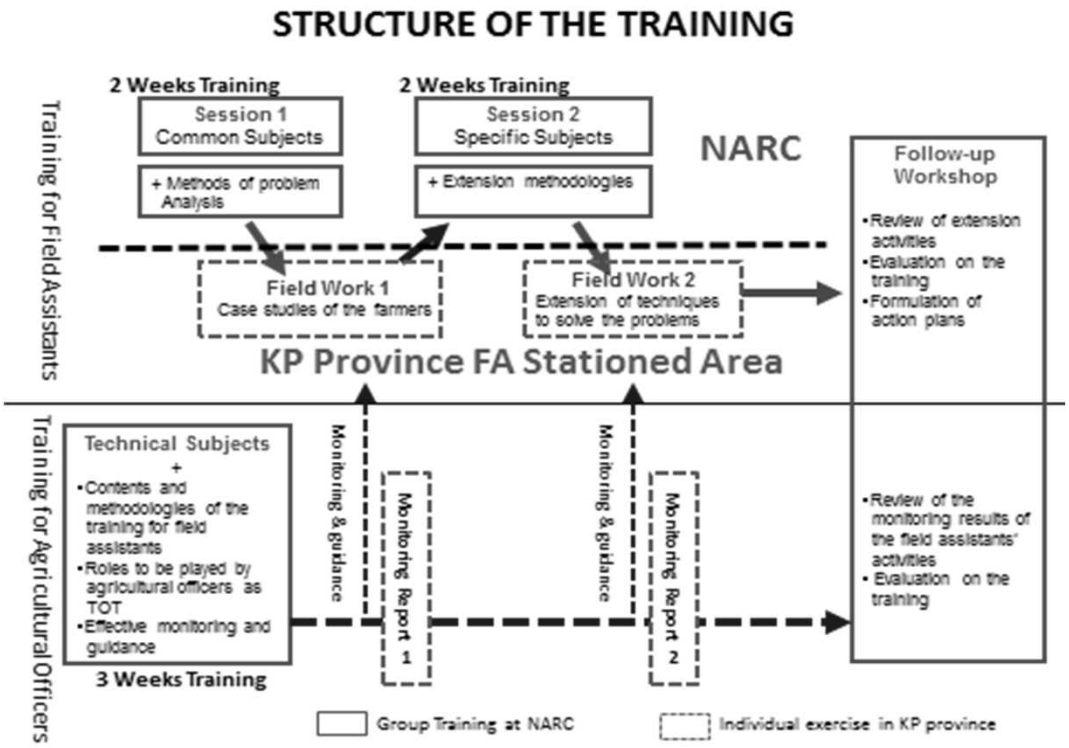
Examples of Good Practices from the Field

- For Field Activities by Field Assistants after the Training -

JICA-PSDP Project
"The Project for Capacity Development of
Agriculture Extension Services in Khyber Pakhtunkhwa Province"

“The Project for Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province” which is JICA Technical Cooperation Project (January 2015 – June 2017) trained 250 Field Assistants (FA) of Directorate of Agriculture Department, KP Province.

The training for those FAs went through series of sessions and field works as described below, and it was found out that their production techniques and knowledge increased, attitudes toward farmers as well as communication skill improved, and not the least, that their confidence as being extension worker have strengthened.



This booklet includes examples of 27 activities which were conducted by those FAs after the training. These examples are clustered in the followings;

1) Seeing is Believing: Being Practical
2) Collaboration within District Directorate of Agriculture Extension Department
3) Utilization of Appropriate Chance
4) Collaboration with Other Organization

We hope that these good practices, though the number is small, activities, would provide further tips for FAs to continue with their extension activities utilizing their learning from the training in the future.

Project Team

1. Seeing is Believing: Being Practical
1-1: Seeing is Believing: Maize

(1) FA in Haripur District, Hazara Division

Crop: Maize
Subject: Cultivation Techniques
Extension Method: Group Meeting with Practical
Number of Participants: 5 Farmers

Comparing the Result

As finding out that the farmers are reluctant in applying new cultivation methods, FA prepared demonstration plot. FA selected two different plots; one which was applied with the recommended techniques, and the other which was with the conventional method. FA called group of farmers and first asked them to go around. Farmers were surprised to see such a different yield in two plots and they literary jumped into the field to observe the difference. They started to ask many questions to FA on how they can get the yield as such like the good plot. By presenting two different results, it would become easier for the farmers to get convinced and would also built trust toward FA and the Department.

(2) FA in Buner District, Malakand Division

Crop: Maize
Subject: Weed Control
Extension Method: Field Visit
Number of Participants: 5 Farmers

Finding Unknown Insect & Linking with Researcher

FA was visiting farmers' field and to discuss about how to tackle with weeds. However, when he reached the field, he found out huge amount of unknown insects which were eating the cobs of the maize. Photos were taken and were shared with NARC researchers so that the farmers could be advised on how to tackle the issue. Without being in the actual field, it is difficult to understand the issues which farmers are facing.

(3) FA in Shangla District, Malakand Division

Crop: Maize
Subject: Getting Balanced Use of Fertilizer
Extension Method: Group Meeting
Number of Participants: 10 Farmers

Unbalance Use of Fertilizers

The activity was conducted at the remote area where many of the farmers are still growing maize in conventional way and are facing low yield. FA identified that the farmers are applying only nitrogenous fertilizer, thus explained the farmers about the soil needs balanced dose of nitrogen, phosphorus and potash. He showed the farmers the symptoms of deficiency of fertilizer at the field, and had practically shown what would be the balanced doze. FA also used magazines and booklet while explaining the farmers so that they could understand better and farmers and farmers requested to continue such activities for other crops as well.

(4) FA in Swabi District, Mardan Division

Crop: Maize
Subject: Cultivation of Hybrid Vriety
Extension Method: Group Meeting
Number of Participants: 24 Farmers

Showing Result of Hybrid Seeds from NARC

FA sowed Maize hybrid variety which he got from the training at NARC at the demonstration plot. Having seen how it grew, FA conducted the activity on Maize cultivation to promote use of hybrid variety. FA presented two different fields, one using local varieties and one using hybrid variety from NARC. Farmers were very surprised to see such a big difference in yield by comparing two fields. FA explained the farmers about the benefit of this particular seed and farmers got interested in the seed. FA also invited researchers from NARC, so that the farmers could further raise their questions and their concerns.

1-2: Seeing is Believing: Orchard

(1) FA in Mansehra District, Hazara Division
Crop: Orchard
Subject: Pruning
Extension Method: Group Meeting with Practical
Number of Participants: 9 Farmers

Demonstration with Evaluation

Farmers requested FA to conduct session on pruning as they are unaware. FA explained the farmers about the appropriate timing, advantage of pruning and then demonstrated pruning. After the demonstration, FA involved the farmers to take turn to practice pruning so that he could also evaluate the understanding level of the farmers. From the practical where farmers have the chance to do, it raises more interest and confidence of the farmers which motivates him to apply the learning.


(2) FA in Mansehra District, Hazara Division
Crop: Orchard
Subject: Plantation Techniques
Extension Method: Group Meeting
Number of Participants: 10 Farmers

Demonstration at for Farmers who came to Buy

The activity took place at nursery when some of the farmers came to purchase plants. FA explained and practically demonstrated the importance of nursery management including the proper way of plantation. It also gave a good chance for the farmers as FA further elaborated the information on advantage of pruning and its timing – now the farmers understand that at the time of pruning, they could communicate with the FA so that they can learn pruning. It is good hold these kind of practical session to those farmers who come to the nursery so that the farmers would be aware of production techniques.

(3) FA in Mansehra District, Hazara Division
Crop: Orchard
Subject: Pruning
Extension Method: Group Meeting with Practical
Number of Participants: 6 Farmers

True Reason why Orchards were Drying

Pruning practice was conducted at one of the farmer's field. The activity was organized in a practical manner and farmers were all having turn on practicing pruning and their understanding level was judged through their practical performance test. FA also noticed that the orchard was not in good condition and spotted out the reason why the orchard are drying. Farmers were believing that the plant that this orchard is drying because it is close to cemetery but now understand that it was due to termite as well as how to tackle that problem


(4) FA in SwatDistrict, Malakand Division
Crop: Peach/ Persimmon
Subject: Fruit Fly Control
Extension Method: Training
Number of Participants: 6 Farmers

Presenting Fruit Trap with Result

As understanding that farmers are being affected by the fruit fly. FA conducted training to group of farmers on how to control fruit fly. FA explained the advantage of fruit fly trap, which is not be just biologically effective against chemical use, but how much easier and cheaper it would be to apply. By actually presenting the fruit fly traps which are being used and how much those traps are catching the flies, farmers could understand that the effectiveness of the adopting what is new to them.


1-3: Seeing is Believing: Tomato

(1) FA in Mansehra District, Hazara Division
Crop: Tomato
Subject: Nursery Transplanting
Extension Method: Group Meeting with Practical
Number of Participants: 6 Farmers

Activity at Right Timing

FA found out that many farmers are being affected by fungus disease as they do not apply pre-treatment of fungicide at the time of transplanting. FA conducted the activity just before when farmers start transplanting so that the farmers could apply those techniques at the right timing. As the meeting was organized with practical demonstration, the farmers could understand the necessary steps in detail and they found it easy for them to apply. After the meeting, the farmers purchased the fungicide as FA prescribed and have applied the techniques.


(2) FA in Mansehra District, Hazara Division
Crop: Tomato
Subject: Transplanting
Extension Method: Individual Meeting
Number of Participants: 1 Farmer

Continuous Follow-up for Next Step

The activity took place as the continuation from Field Work 2 (FW2). FW2 was about using plastic tray for sowing. Farmer was very happy with applying the method as his neighbor farmers nurseries were damaged due to heavy rain falls, but his plants were saved in tray. Thus the trust toward FA was already built. For this activity, the same plants which were prepared at the time of FW2 was used to understand how to transplant to tunnel. All the steps were done practically with the farmer, and the farmer is confident to continue to apply and is happy as he found no disease being identified till now.


(3) FA in Mansehra District, Hazara Division
Crop: Tomato
Subject: Cultivation Techniques
Extension Method: Individual Meeting
Number of Participants: 1 Farmer

Demonstration Plot as Effective Showcase

The farmer grows tomato at department demonstration plot and was guided on how to cultivate tomato by using net wire. By using net wire, the plant could glow straight and would be less affected with diseases. Since the farmer introduced the method, many of the people visited his field to understand its effectiveness. Demonstration plot is a effective showcase to introduce new technologies.


(4) FA in Swabi District, Mardan Division
Crop: Tomato
Subject: Introducing Seedling Tray
Extension Method: Group Meeting
Number of Participants: 12 Farmers

Demonstration which Motivate Farmers

The FA invited those farmers to nursery farm and explained the farmers about the advantage of using seedling tray, including better germination of the seed. He also demonstrated how easy it would be to transplant without damaging the roots in a practical manner. The farmers became interested in introducing seedling tray as they found the benefits from the practical demonstration.


1-4 : Seeing Believing - Others

(1) FA in Hazara District, Hazara Division
Crop: Lychee
Subject: Orchard Layout
Extension Method: Field Visit/ Training
Number of Participants: 1 Farmer

Practical with Remaining Completed by the Farmer

Farmer who is the member of MFSC was interested in Lychee orchard, thus the request came to the department to conduct orchard layout activity at the member's field. The FA together with the farmer went practically through step by step, starting from how to level the land. For each step, the farmer was fully involved and after completing 5 acres, the farmer stopped FA to continue as he is confident enough to continue the activity for the remaining 1 acre. By doing together, farmers become more confidence in how to apply the method.

(2) FA in Swabi District, Mardan Division
Crop: Wheat
Subject: Rust Control
Extension Method: Group Meeting
Number of Participants: 17 Farmers

Step by Step: Preventive Measure for Rust

Wheat is the major crop cultivated in KPK. Though rust is one of the significant diseases which affects the wheat yield in Swabi, farmers are unaware of how to control the rust. FA decided to conduct rust disease control activity to provide solution to farmers, and chose seed treatment method as it could also control other diseases which affect wheat. During the activity, farmers were practically shown the steps for seed treatment, dried the treated seed for about 30 minutes, and then cultivated the treated seed together with the FA. FA also explained that this seed treatment help not just for rust, but in controlling many other diseases of wheat crop.




(3) FA in Mansehra District, Hazara Division
Crop: Potato
Subject: Cultivation Method
Extension Method: Group Meeting with Practical
Number of Participants: 8 Farmers

Evaluating Participants Understanding Level from Participants' Performance

The FA conducted group meeting with group of farmers on potato cultivation method. The FA explained the details of the necessary points, and have also demonstrated practically how to apply insecticide/ fertilizer as well as hoeing practice. Farmer found it very easy to understand as it was with demonstration. While conducting demonstration, farmers were also involved in practicing so that their level of understanding could be checked and could further explain in detail, where needed.

(4) FA in Mansehra, Hazara Division
Crop:
Subject: Wiled Boar Control
Extension Method: Field Visit
Number of Participants: 1 Farmer

Recommending Technology which is Affordable to Apply

As the farmer was suffering from wild boar, FA conducted the activity on wild boar control. The framer had been involved in other wild boar control program, but has found out that it was too expensive and difficult to manage. Thus, FA explained him the simple and cheap way which uses "timik" "hen-head" and "pre-batting technique". The farmer found the method easy for him to adopt for the coming wheat season, and have decided to share this method to other peoples. The farmer also planned to organize some wild boar control program so that it could be applied by the farmers who are suffering.

2. Collaboration within District DoAE

(1) FA in Buner District, Malakand Division
Crop: Peach
Subject: Pruning Method
Extension Method: Farmer Training
Number of Participants: 1 Farmer

Activity together with Fellow Colleague

Pruning is essential for orchard farmer to obtain quality fruits and high yield. However, farmers are believing that cutting branches might result in low yield. FA, therefore, decided to conduct training on peach pruning to the farmer who took initiatives in growing peach trees, but was unaware of pruning. The training was conducted with another FA as there were quite a lot of trees, and all the trees were pruned by FA and his fellow colleague together with the target farmer. As it was done practically, the farmer is confident so that he could do the proper pruning by himself next year.

(2) FA in Haripur District, Hazara Division
Crop: Lychee
Subject: Air Layering for True to Type Plants
Extension Method: Group Meeting with Training
Number of Participants: 3 Farmers

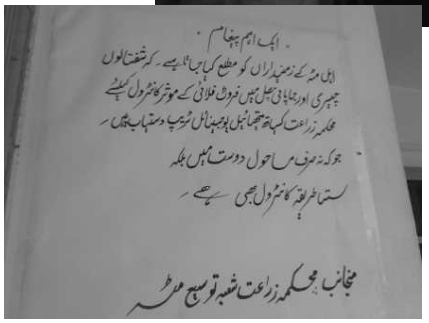
Coordination with SMS and FA

Farmers visited Agriculture Office to get the information about good plants. FA, together with SMS Horticulture, decided to conduct training on Air Layering with those farmers so that they could get true to type plants. As the training was conducted at the department farm, farmers had a good chance to understand all the necessary steps in practical manner. In addition, SMS was accompanying the activity which made the training more fruitful with good collaboration between SMS and FA. Both of them were having very good practical knowledge and could answer in a easy simple way whatever question which the farmers had .

(3) FA in Swat, Malakand Division
Crop: Peach
Subject: Fruit Fly Trap
Extension Method: Group Meeting
Number of Participants: 6 Farmers

Support from Agriculture Department

Fruit Fly is affecting peach which is one of the important product of Swat District. FA organized meeting with group of farmers who produces peach at Agriculture Department Office and discussed about the importance of biological control methods by using fruit fly traps. The farmers were more aware of chemical control, but FA recommended the use of Fruit Fly Trap as it is easier, cheaper, and better for health. Agriculture department played important role in this activity by providing the materials such as traps and chemicals as well as refreshment for farmers.



(4) FA in Buner, Malakand Division

Crop: All Vegetables
Subject: Fruit Fly Control
Extension Method: Training
Number of Participants: 26 Farmers

Collaboration with Fellow Colleagues, Utilization of Charts made by Other Colleague FA

The area which the activity took place was in the remote area where it is difficult to approach. Thus, the training conducted by the FAs became one of the important occasion for the farmers as it is quite rare opportunity for these kind of activities to take place. The training went through step by step on how to control the fruit fly and when it would be suitable timing to conduct certain activities. FA prepared 2 different types of charts, one on fruit fly life cycle, and the other for control measures, and involved all the farmers for discussion. The charts were utilized from those which other colleague FAs produced and these colleague FAs also participated in the activity so that they could also understand the farmer's situation as well as to support them effectively. The participants were satisfied with the activity and they have promised to convey this learning to other farmers who belong to the same associations..

(5) FA in Buner District, Malakand Division

Crop: Wheat
Subject: Wild Oat Control
Extension Method: Field Visit
Number of Participants: 5 Farmers

Activity Done in Collaboration with Colleague FAs

The activity took place when the wheat weed becomes serious issue for the farmers. The farmers were concerned about the weed, especially wild oat. FA guided the farmers on the control methods including cultivation information such as crop rotation and deep plough. FA also utilized the wheat brochures which the Project produced. As the FA was concerned that he is not having full knowledge, he invited other colleague FA to the activity so that whatever difficult questions arise, he could be supported by his colleague. The farmers found the meeting very fruitful as they could understand how to control the weed as well as obtaining all necessary questions which they had. This is the good example that if FA find any weak topic, he could organize the activity jointly with his fellow colleagues who are good in that topic so that the farmers could maximize the opportunity..

(6) FA in Buner District, Malakand Division

Crop: Citrus
Subject: Wilting
Extension Method: Individual Meeting
Number of Participants: 1 Farmer

Guiding Field Worker of Circle Office

The targeted farmer was the Field Worker of Agriculture Circle Office and he was facing wilting issue with his orchard. FA guided the Field Worker on how to control the wilting through zero tillage, orchard management and right way of applying the chemicals. This Field Worker was selected as he is the Field Worker and has a good opportunity in disseminating the message to other farmers in the farming community.

3. Utilization of Chance

(1) FA in Mansehra District, Hazara Division
Crop: Pea
Subject: Cultivation Method
Extension Method: Farmers Field School (FFS)
Number of Participants: 30 Farmers

Utilization of Departmental FFS Program

The activity took place by utilizing Mansehra District Departmental FFS Program under Food Security Program. FA utilized the chance, so that the activity could be conducted in practical manner to the farmers, as well as necessary cost to conduct FFS could be covered by FFS budget of the Department. FA fist explained the importance of line sowing methods and appropriate distance between plants. After the explanation, FA presented the demonstration plot to the farmers. AO who is the supervisor of the FA also attended the activity, and supervised him closely as well as supported the FA with further information regarding pea production.

(2) FA in Haripur, Hazara Division
Crop: Gladiolus
Subject: Cultivation Awareness
Extension Method: Field Day
Number of Participants: 50 Farmers

Utilizing of Departmental Field Day

FA utilized the opportunity of Field Day which was organized by Haripur District Department to raise awareness of Gladiolus. The FA chose the topic as it has been noticed that Gladiolus has become one of the prominent cash crop for their area along with other floriculture, but yet being highlighted. During the event, FA, along with AO and SMS, explained about the advantage of growing Gladiolus; comparison between Rose and Jasmine which are the common floriculture crops, result of the market assessment which presents that Gladiolus is more profitable than the other flowers, and that the soil of the land is suitable for Gladiolus growing. Farmers showed high interest in growing Gladiolus as the activity clearly presented the advantage of growing Gladiolus including its market value, and that it fits to the soil which the farmers are having. By utilizing the opportunity of Field day, FA could raise more awareness within the farmers through one activity, compared to the individual visit and small farmers group meeting.

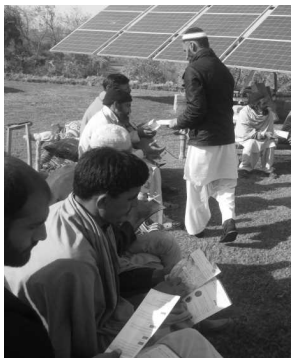
4. Collaboration with Other Organization

(1) FA in Swabi District, Mardan Division

Crop: Wheat, Sugarcane
Subject: Weed Control, Stem Borer Control
Extension Method: Group Meeting
Number of Participants: 19 Farmers

Collaboration with Private Company

Wheat weed damages the wheat yield up to 40%. Thus, FA chose the topic on preventive measures of wheat weed, such as use clean seed for cultivation, and to control the weeds in early stage for better yield. As FA understood that most of the farmers who participated the meeting also grows sugarcane, FA also included the topic about stem borer control, as it affects both maize and sugarcane. The meeting was conducted in a practical manner with FA presenting actual weeds and stem borer attacked sugarcane. Wheat brochures produced by the Project were distributed among the farmers as sub-materials. For this activity, one of the seed company participated so that there would be linkage between farmers, and the company offered the refreshment for the farmers. Where there are suitable private companies, the activity could be jointly done for win-win situation.



(2) FA in Swabi District, Mardan Division

Crop: Maize
Subject: Termite and Stem Borer
Extension Method: Group Meeting
Number of Participants: 31 Farmers

Collaboration with Private Company

Farmers' group meeting was organized to discuss about how to increase the yield of maize crop, along with termite and stem borer control. FA explained to the farmers about the use of hybrid seed and line sowing method to increase the maize, and how to control termites and stem borer. FA also emphasized the necessity of timing of controlling these insects and diseases as it would certainly affect the yield. General discussion on maize crop production was further carried out. The activity took place in corporation with the private seed company, who provided the refreshment, so that farmers could get linkage with the private seed company who is selling the suitable hybrid seed, and the company to have chance to increase future clients.

(3) FA in Abbottabad, Hazara Division

Crop: Potato
Subject: Disease Control
Extension Method: Field Visit
Number of Participants: 5 Farmers

Collaboration with Research Station

When FA visited the farmers, it was found out that the potato were being affected. FA collected the sample of the affected potato plant and went to Research Station so that it could be tested at the laboratory. FA revisited the farmers with researcher along with the test results. The researcher explained to the farmers that the problem happened due to improper irrigation, same knife being used without being cleaned each time to cut the potato seed, lack of seed treatment, and wrong sowing method. Farmers were very impressed that FA took quick action and brought researcher to their field to provide proper suggestions. This is a good example of effective coordination between extension and Research Station.

JICA-PSDP Project
"The Project for Capacity Development of
Agriculture Extension Services in Khyber Pakhtunkhwa Province"

January 2015 – June 2017

یہ کتابچہ فیلڈ اسسٹنٹس کی فیلڈ میں سرگرمیوں کے انعقاد کی مخلصانہ کاوشوں سے تیار کیا گیا ہے جِن کے بغیر اِس کتابچے کی اشاعت ممکن نہیں تھی

Appendix 6-4: Other Activities Training Curriculum

Agriculture Officers (AOs)/Subject Matter Specialist (SMS) (Batch-III) Curriculum Contents (Teaching and Learning Guide)

Day 1 – Monday – 08-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0825-1000	2.5	Opening Ceremony – Pre-Test Orientation session	-	Welcome of participants, registration, distribution of stationery, Pre-test Orientation about course	API	API & JICA Team
1100-1130	.0.5	Refreshment	-		Cafeteria	
1130-1330	2.0	Facilitation Skill	P			ECI
1330-1430		Pray and Lunch time				
1430-1630	2.0	Facilitation Skill	P			ECI

Module 1: Cereals Crops Production (1)

Day 2 – Tuesday – 09-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-0930	1.0	Maize Production Technology · Ridge Planting-A clue to ideal crop husbandry · Manage good land preparation · Weed management · Rationale of Urea fertilizer as · per physique of the crop · Proper fertilizer recommend · doses, their calculation and application	T	• Importance of ridge planting in water conservation, weed and fertilizer management • Optimization of inputs for ideal maize production • Comparison of traditional vs recommended method of planting • Fertilizer use efficiency	API	Dr. Mozammil Hussain
0930-1030	1.0	Maize Production Technology · Proper seasons · Crop Rotations · disease/pest control · Harvesting Technologies	T	• Cropping Pattern in KP • Optimization for sowing date • Agronomy • Pest Management • Cultivation of maize under optimum crop husbandry	API	Dr. Rashid Saleem
1030-1100		Tea Break				
1100-1230	1.5	Importance of Wheat and its cultivation in Khyber Pakhtunkhwa	T	• Selection of approved varieties • Seed treatment, planting, land preparation • Sowing method • Weeds control • Importance of fertilizer use • Types of fertilizers & Rate of application • Importance of timely irrigation • Critical stages for irrigation • Adverse effect of drought	API	Dr. Muhammad Sohail
1230-1330	1.0	Calibration of machines and Pre/Postharvest management	P	• Seed Drill • Spray Pump	CSI Field	Dr. Muhammad Sohail

				• Seed Treatment • Experimental Layout • Postharvest management		
1330-1430		Pray and Lunch Time				
1430-1530	1.0	Importance of Quality seed use in wheat		• Certified seed		Dr. Muhammad Sohail
1530-1630	1.0	Sugarcane Production Technology	T	• Integrated nutrient management (INM): concept, principles, determinants, advantages • Multiple cropping/ intercropping in sugarcane • Safe and judicious use of pesticides in sugarcane	API	Mr. M. Asad Farooq

Module 1: Cereals Production (2)
Day 3 – Wednesday – 10-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1000	1.5	Oats, Maize, Sorghum and Barseem as exemplary fodder crops	P	• Knowing of Oats and Maize as fodder crop • Utilization of Oats, Maize, Sorghum and Barseem as fodder crop • Relevant information • Potential of Oats, Maize, Sorghum and Barseem crops as fodder	API	Dr. M.S. Zahid
1000-1100	1.0	Rice Production Technology	T	• Production agronomy • Insects and Diseases control • Post-Harvest Handling		Mr. Sana Ullah Jalil
1100-1130		Tea Break				
1130-1330	2.0	Diseases control in Maize, Wheat and other cereal		• Important diseases • Symptoms • Control Measures	API	Dr. Shahzad Asad
1330-1430		Pray and Lunch Time				
1430-1630	2.0	Insect control in Maize, Wheat and other cereal		• Important diseases • Symptoms • Control Measures	API/ Lab	Dr, Ehsan ul haq

Module 2: Vegetable Production (1)
Day 4 – Thursday – 11-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1000	1.5	Vegetable and organic farming	T	Vegetable as organic farming	API	Dr. Sher Muhammad
1000-1100	1.0	Vegetables cultivation through seeds	T	• Standardize agronomic practices and disease control • OP vs Hybrids • Seeds presoaking treatments	API	Dr. Taj Naseeb Khan

				• Temperature and seed germination • Methods of seed sowing (Direct sowing vegetables)		
1100-1130		Tea Break				
1130-1330	2.0	Onion Cultivation	T	• Seedling raising in nursery • Transplanting • Sets production • Insects and Diseases control • Post-harvest handling	API	Dr. Hidayat Ullah
1330-1430		Pray and Lunch Time				
1430-1630	2.0	Nursery raising for vegetable and different structures	T	• Filling of media • Seed soaking, Seed sowing • Temperature, Irrigation • Practical health nursery raising	API	Mr. Humayun Khan

Module 2: Vegetable Production (2)
Day 5 – Friday – 12-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1030	2.0	Potato Cultivation	P	• How to get quality seed • Production agronomy • Insects and Diseases control • Post-Harvest Handling	API	Dr. Khalid Farooq
1030-1100		Tea Break				
1100-1200	1	Tomato Cultivation	T	• Seedling raising in nursery • Transplanting • Insects and diseases control • Post-harvest handling	API	Mr. Noor Saleem
1200-1300	1.0	Pre and post-harvest handling of vegetable crops	T	• Factors affecting shelf life of vegetables • Better pre harvest practices • Harvesting • Postharvest management	API	Ms. Huma
1300-1430		Pray and Lunch Time				
1430-1530	1.0	Diseases Control of Vegetable Crops	T	• Important diseases of vegetables • Stages of control, Precautionary management • Chemical control & Bio-safety	API	Dr. Shahzad Asad
1530-1700	1.5	Insect pest management for Vegetable crops	T	• Important insect pest and of vegetables • Stages of control • Precautionary management • Chemical control & Bio-safety	API	Dr. Ehsan Ul Haq

Day 6 – Saturday – 13-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
		Field Visit to BARI Chakwal		•		

Day 7 – Sunday – 14-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
		Off day or City Tour		•		

Module 3: Fruit Production (1)
Day 8 – Monday – 15-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-0930	1.0	Establishment of certified fruit nurseries	T	Basic Principals of clean nursery	API	Dr. Khalid Mehmood Qureshi
0930-1030	1.0	Olive Cultivation	T	• Introduction of olive as cash crop • Reduction in oil import bill • Benefit for farmers • Problem sharing	API	Dr. Nasir Mahmood Cheema
1030-1100		Tea Break				
1100-1200	1.0	Selection, layout and plantation of fruit orchard Different propagation techniques	P	• Land selection • Land preparation • Layout, Plantation • Budding/Grafting/Cutting • Air layering	HRI	Mr. Muhammad Imran
1200-1300	1.0	Importance of training and pruning of fruit plants	p	• Training and pruning of fruit of plants • Shaping of plants	HRI	Mr. Muhammad Imran/ Mr. Waqas Dogar
1300-1430		Pray and Lunch Time				
1430-1530	1.0	Guava production technology	T	• Guava crop and its management • Insect and Diseases Control • Post-harvest Handling		Dr. Hafeez ur Rehman
1530-1630	1.0	Citrus production technology, problem and solution	T	• Citrus production technology • Insect and Diseases Control • Post-harvest Handling and Marketing	API	Dr. Hafeez ur Rehman

Module 3: Fruit Production (2)
Day 9 – Tuesday – 16-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-0930	1.0	Disease of fruit orchard with special emphasis on stone, pome and soft fruits	T	• Sampling techniques • Symptoms identification	API	Dr. Shahzad Asad
0930-1100	1.5	Insect of fruit orchard with special emphasis on stone, pome and soft fruits	T	• Sampling techniques • Symptoms identification	API	Dr. Ehsan Ul Haq
1100-1130		Tea Break				
1130-1230	1.0	Peach Production Technology	T	• Peach Production Technology • Insect and Diseases Control (Fruit Fly, Stem Borer, Leaf Curl) • Postharvest Handling	API	Mr. Iftikhar Ahmad
1230-1330	1.0	Introduction to floriculture/Cut flower production		• Selection of Site, location and Design • Flower types	API	Mr. Iftikhar Ahmad
1330-1430		Pray and Lunch Time				
1430-1530	1.0	Pre-harvest techniques and Post-harvest handling of fruit crops	T	• Pre-harvest measures • Selection of fruit varieties • Harvesting techniques • Harvesting, grading, packing & packaging and storage • Reduction in fruits loses • Minimization of fruit loss	HRI	Dr. Sudheer Tariq
1530-1630	1.0	Fruit & Vegetable Documentaries	P	• Videos on pruning and Nursery raising	API	Syed Imran Khan

Module 4: Others (1)
Day 10 – Wednesday – 17-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-0930	1.0	Water Resources in Pakistan; Issues and potential and climate resilience	T	• Water resources types • Water resources issues • Water management options	API	Dr. M. M. Ahmad
0930-1030	1.0	Irrigation Systems and their Management	T	• Types of high efficiency irrigation systems • Operation and management	API	Engr. A. G. Mangrio
1030-1100		Tea Break				
1100-1200	1.0	Water Pumping through Alternate Energy Resources	P	• Alternative energy resources types • Selection of biogas plant construction materials • Diesel engine operation on biogas/diesel dual fuel system • Design of solar pumping system according to need	CAEW RI Field	Engr. M. Khalid Jameel

1200-1330	1.5	Water flow measuring methods Soil water determination and its use Rain Water Harvest	P	• Types of discharge measurement • Water flow measuring in the field • Methods of soil water determination • Soil water use in irrigation • Climatic parameters • Calculation of ET	CAEW RI Field	Dr. Ghani Akbar, SSO and Zafar Islam
1300-1430		Pray and Lunch Time				
1430-1530	1.0	Bioremediation/Cleaning of waste/used water for irrigation	P	• Urdu literature • On site demonstration	Field	Mr. Mushtaq Ahmad
1530-1630	1.0	Compost, Importance of poultry and green manure	T/P	• Addressing micro elements through animal and plant origins • Basics of seed production of improved high yielding varieties • Preparation of Compost	API	Dr. Sher Muhammad

Module 4: Others (2)
Day 11 – Thursday – 18-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-0930	1	Bio-saline agriculture	T	• Classification of salt affected lands and their management • Management of brackish waters	API	Dr. Arshad Ali
0930-1030	1	Micro nutrients deficiency and application	T	• Role of micronutrients • Symptom on plants • Application methods	API	Dr. Arshad Ali
1030-1100	0.5	Tea Break				
1100-1200	1.0	Soil/Plant & Water Testing	T	• Sample collection • Method of soil and plant analysis	API	Dr. Mati Ullah
1200-1330	1.5	Bio-zote (Bio fertilizer) Technology for sustainable crop production in Pakistan	T	• Introduction of bio fertilizer • PARC developed bio fertilizer (bio-zote) technology • Usage, pre cautions, crops and availability	API	Dr. Tariq Sultan
1330-1430		Pray and Lunch Time				
1430-1530	1.0	Integrated rodent management	T	• Major rodent pests of Pakistan • Rodent diversity • Characteristics of rodents • Factors leading rodents to become crop pests • Environmental, cultural and non-chemical methods • Rodent management	API	Mr. Irfan Ahmed
1530-1630	1.0	Bait formulation, preparation and its application in field condition	P	• Composition of bait material • Criteria for selection of bait material • Calculating the bait formula • Group activity	VPMP Lab.	Mr. Irfan Ahmed

Module 4: Others (3)
Day 12 – Friday – 19-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1030	2.0	Computer and Internet Uses		•	API	Mr. Amanullah
1030-1100	0.5	Tea Break				
1100-1200	1.0	Principles of seed cleaning	P	• Size, length, width, Density, Porosity for magnetic attraction	ABEI	Dr. Tanveer Ahmad
1200-1300	1.0	Agriculture Machinery, Operation and Maintenance	P	• Repair schedule of tractors, Parts, Maintenance	ABEI	Mr. Shabbir Kalwar
1300-1430	1.5	Pray and Lunch Time				
1430-1530	1.0	Honeybee keeping/honey production Diseases, mites, pests of Honeybees and their Integrated management	T	• Types and life cycle of honey bees • Sampling and diagnosis methods • Treatment techniques	HBRI	Dr. Rashid Mehmood
1530-1630	1.0	Role of seed certification	T	• Principles, Federal seed certification role, Grading, Packing, Storage	API	Dr. Khalid Farooq

Day 13 – Saturday – 20-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
		Field Visit to Fateh Jang				

Day 14 – Sunday – 21-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
Off-Day						

Module 4: Others (5)
Day 15 – Monday – 22-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1030	2.0	Practice of Presentation Skill		•	API	ECI
1030-1100		Tea Break				
1100-1200	1.0	Seed production of self-pollinated crops	T	• Self-pollinated vegetable Crops • Isolation distance • Production practices • Rouging • Harvesting and seed extraction/cleaning • Packing, treatments and storage	API	Dr. N.N. Nawab

1200-1330	1.5	Seed production of cross pollinated vegetables	T	• Cross pollinated vegetable Crops • Isolation distance • Production practices • Rouging • Harvesting and seed extraction/cleaning • Packing, treatments and storage	API	Dr. N.N. Nawab
1330-1430		Pray and Lunch Time				
1430-1700	2.5	Value Addition – Sunny Miracle -	T/P	• Quality improvement • Prolong storability • Marketing choice	JOBS	Dr. Shahnaz JOBS

Others (1)

Day 16 – Tuesday – 23-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1030	2.0	Value Addition of Cereal Crops, Fruits & Vegetables		• Introduction • Principles of Cereals, Fruits & Vegetables Processing • Techniques of Cereals, Fruits & Vegetables Processing • Processed Products from Cereals, Fruits & Vegetables • Processing Requirements • Solar Drying of Fruit and Vegetable (Some Example)	API	Mr. Amer Mumtaz
1030-1100		Tea Break				
1100-1200	1.0	Time management	T	• How to manage time	API	Dr. Khalid Farooq
1200-1330	1.5	Project Management, Project monitoring & evaluation techniques	T	• Concept of Project • Project Attributes • The Triple Constraints of Project Management • Role of Project Manager • Project Management Framework • Key knowledge areas of Project Management • Project Life Cycle (PLC) • Project Tools and Techniques • Project Success Factors • Reason of Projects Failure • M&E and Project Cycle & Resulted Based Monitoring • Indicators & KPIs & Stakeholder Analysis	API	Mr. M. Yousuf Marri
1330-1430		Pray and Lunch Time				
1430-1700	2.5	Project designing & Introduction to PC-I to PC-V	T/P	• Concept of Project Design • Project Preparation • Introduction to PC-I – PC-V • Exercise	API	Mr. M. Yousuf Marri

Others (2)
Day 17 – Wednesday – 24-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1100	2.5	Practice Presentation Skill			API	ECI
1100-1130		Tea Break				
1130-1230	1.0	FFS Participatory Approach	T		API	Dr. Tahira Yasmeen
1230-1230	1.0	Science by Farmers	T	•	API	M. Ishaq Mastoi
1330-1430		Pray and Lunch Time				
1430-1530	1.0	Agro-Eco System Analysis	T	•	API	Mr. Roshan Zada Khatak
1530-1630	1.0	ICT based mass extension methods in Khyber Pakhtunkhwa	T	• An introduction to extension methods • Mass extension methods • ICT based methods & the concept of e-Extension	API	Mr. M. Yousuf Marri

Others (3)
Day 18 – Thursday 25-02-2016

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0900-1000	1.0	Result of AO questionnaire survey	T	• Sharing result of the questionnaire survey	API	Mr. Hiroyasu Onuma
1000-1100	1.0	Roles of AO (Job Analysis)	P	• Discussing roles of AO in agriculture extension	API	Mr. Hiroyasu Onuma
1100-1130		Tea Break				
1130-1200	0.5	Training and extension scheme for AOs and FAs under the Project	T	• Training structure & training schedule under the Project • Monitoring activities under the Project	API	Mr. Hiroyasu Onuma
1200-1330	1.5	Monitoring of FA's field activities	P	• Discussing monitoring of FA's field activities • Discussing format of monitoring report	API	Mr. Hiroyasu Onuma
1330-1430		Pray and Lunch Time				
1430-1500	0.5	AO's Field Work Plan	T	• Preparing field work plan by AOs	API	Mr. Hiroyasu Onuma
1500-1630	1.5	Preparing field work plan: How to utilize knowledge / techniques acquired from the AO-training	P	• Preparing field work plan by AOs	API	Mr. Hiroyasu Onuma

Day 19 – Friday - 26-02-2016

Time	H	Learning Unit	Type	Learning Elements	Learning Outcomes	Place	Resource Person
0900-0930	0.5	Post Evaluation		•	•	API	JICA Experts, API
0930-1000	0.5	Closing Ceremony		•	•		

1st Session

Field Assistants (FAs – 10) Curriculum Contents (Teaching and Learning Guide)

Day-01: Monday, 16 January 2017

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1030	2	Registration, Evaluation and Orientation		Registration, orientation about course, Pre evaluation test	API	API/JICA Team
1030-1100		Tea Break				
1100-1200	1	Institute Visit 1		Introduction of activities by CSI	CSI	Dr. Khalid Farooq Dr. Ashiq Saleem Dr. Muhammad Sohail
1200-1300	1	Institute Visit 2		Introduction of activities by HRI	HRI	Dr. Khalid Farooq Mr. Humayun Khan Mr. Mukhtar Ahmed
1330-1430		Lunch Break				
1430-1530	1	Institute Visit 3		Introduction of activities by CDRI and Insectary	CDRI	Dr. Khalid Farooq Mr. Dr. Shahzad Asad Dr. Ehsan-Ul-Haq
1530-1700	1.5	Introduction to Computer	T/P	• Basics of computer	API	Mr. Hadi Ali Saeed Syed Imran Khan

Day-02: Tuesday, 17 January 2017

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1000	1.5	Maize Production Technology • Breeding • Agronomy • Cropping pattern in KP • Optimum sowing dates, agronomy • Weed/Disease/ Pest management	T	• Proper seasons • Introduction of maize as top ranking cereal • Maize Varieties • Planting methods and Cultural Practices • Suitable varieties • Different sowing methods • Cultural practices • Weed/insect/disease control measures • Harvesting and post-harvest handling	API	Dr. Ashiq Saleem
1000-1100	1	Maize Plant Protection and Post-harvest Handling	T	• Disease insect control, weed management, irrigation • Post-harvest handling • Insect and diseases	API	Dr. Rashid Saleem
1100-1130	0.5	Tea Break				
1130-1330	2.0	Wheat production technologies	T/P	• Sowing time • Land preparation and sowing method	API	Dr. Muhammad Sohail

				• Weeds and diseases management • Fertilizer use • Irrigation management • Harvest and post-harvest • Seed treatment • Drill calibration • Spray pump calibration • Grain Storage		
1330-1430		Lunch Break				
1430-1530	1	Wheat Seed production	T	• Certified seed production and its requirements	API	Dr. Muhammad Sohail
1530-1700	1.5	Different Tools of MS Word	T/P	•	API	Mr. Hadi Ali Saeed Syed Imran Khan

Day-03: Wednesday, 18 January 2017

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-0930	1	Vegetable cultivation through seed and seedling	T	• Standardize agronomic practices and disease control • Seeds • OP vs Hybrids • Seeds presoaking treatments • Temperature and seed germination • Methods of seed sowing (Direct sowing vegetables)	API	Dr. Ghulam Jellani
0930-1030	1	Healthy nursery raising of vegetables under Low, Walk-in and High Tunnels	T	• Concept of compost and nursery raising media • Media sterilization • Nursery growing in multiport trays • Nursery of cucurbitaceous vegetables • Controlled environment	API	Mr. Humayun Khan
1030-1100		Tea Break				
1100-1200	1	Insect pest and disease management	T	• Important insect pest and diseases of vegetables • Stages of control • Precautionary management • Chemical control & Bio-safety	API	Dr. Ehsan-ul-Haq
1200-1330	1.5	Disease Management in Horticultural Crops	T	• Important Diseases and their control • Precautionary management • Chemical control & Bio-safety	API	Dr. Shahzad Asad
1330-1430		Lunch Break				
1430-1630	2	Seed production of cross and self-pollinated vegetables	T	• Self-pollinated vegetable Crops • Isolation distance • Production practices • Rouging	API	Dr. NN Nawab

				• Harvesting and seed extraction/cleaning • Packing, treatments and storage		
1630-1730	1	Different Tools of MS Word	T/P	•	API	Mr. Hadi Ali Saeed Syed Imran Khan

Day-04: Thursday, 19 January 2017

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-0930	1	Introduction to horticultural crops	T	• Horticultural crops	API	Dr. Khalid Mehmood Qureshi
0930-1100	1.5	Selection of fruit varieties, layout of field, plantation of fruit orchards	P	• Selection of fruit trees (varieties and place to purchase) • Land selection • Land preparation • Layout • Plantation • Irrigation • Nutrient management	HRI	Mr. Mukhtar Ahmed Mr. Muhammad Imran
1100-1130		Tea Break or Cold Drink				
1130-1230	1	Nursery raising and improvement techniques of fruit crops	T/P	• How to raise nursery • Budding/grafting • Cutting • Air layering	HRI	Mr. Mukhtar Ahmad
1230-1330	1	Pruning training of fruit plants	T/P	• Training and pruning of fruit of plants • Shaping of plants • Practical demonstration of pruning and training	HRI	Mr. Waqas Dogar
1330-1430		Lunch Break				
1430-1530	1	Post harvest technology for horticultural crops	T	•	API	Dr. Khalid Farooq
1530-1700	1.5	Different Tools of MS Word	T/P	•	API	Mr. Hadi Ali Saeed Syed Imran Khan

Day-05: Friday, 20 January 2017

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1000	1.5	Compost, Poultry manure, green manure, Farm yard manure as vital element of plant nutrient	T/P	• Compost making techniques • Green manure methodology • Proper use of poultry, farm yard manure and green manure	API	Dr. Sher Muhammad
1000-1030	0.5	Tea Break				
1030-1130	1	Soil fertility, nutrient management	T	• Soil fertility • Role of nutrients • Symptom on plants • Application methods	API	Dr. Arshad Ali

1130-1300	1.5	Bio-fertilizer/Bio-zote	T	• Introduction of bio fertilizer • PARC developed bio fertilizer (bio-zote) technology Usage, pre cautions, crops and availability	API	Dr. Tariq Sultan
1330-1430		Lunch Break				
1430-1630	2	Vertebrate Pest Management	T/P	• Integrated rodent management • Major rodent pests of Pakistan • Characteristics of rodents • Rodent diversity • Bait formulation and its application methods • Composition of Bait material • Criteria for selection of bait material • Calculating the bait formula • Group activity	API & Field	Mr. Irfan Ahmad
1630-1730	1	Different Tools of MS Word	T/P	•	API	Mr. Hadi Ali Saeed Syed Imran Khan

Day-06: Saturday, 21 January 2017

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1100	2.5	PARC Field Station Satrameel	P			Dr. M. Munir Ahmad Dr. Ghani Akbar
1100		Visit to Murree				Mr. Aamir Ilyas

Day-07: Sunday, 22 January 2017

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830		Islamabad City Visit				Mr. Aamir Ilyas

Day-08: Monday, 23 January 2017

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1030	2	Importance of Apiculture, Preparation of bee wax sheets and preparing bee hives	T	• Introduction of bee tools/ equipment/accessories used in managing bee hives • Handling of bee hives • Working in wax and wood workshop • Honey and its components • Difference of quality honey	API	Dr. Rashid Mahmood Dr. Samina Qamar
1030-1100		Tea Break				
1100-1200	1	Integrated Disease Management	T	• Major diseases and control measures	API	Dr. Shahzad Asad
1200-1330	1.5	Integrated Pest Management	T	• Major Insect and their Biological & chemical control	API	Dr. Ehsan ul Haq
1330-1430		Lunch Break				

1430-1530	1	Coddling moth	T	• Biology and management	API	Mr. Roshan Zada
1530-1630	1	Integrated Farm Management	T	• Working with farmers	API	Mr. Roshan Zada
1630-1730	1	Introduction Different Tools of MS Excel	T/P	•	API	Mr. Hadi Ali Saeed Syed Imran Khan

Day-09: Tuesday, 24 January 2017

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0800-0900	1	FFS application as extension tool	T	• Different applications of Farmers Field Schools as extension tool	API	Dr. Khalid Farooq Dr. Tahira Yasmeen
0900-1000	1	Land Leveling and Land preparation Sowing/Planting Implements and Harvesting	P	• Land leveling, field preparation for planting • Seed treatment • Experimental layout • Use of drills • Irrigation • Different instruments used for sowing, harvesting and processing	FOS Field	Syed Shamim-ul-Sibtain Shah
1000-1100	1	Tractor maintenance	P	• Repair and maintenance for optimum use	FO&S	Mr. Atiqullah
1100-1130		Tea Break				
1130-1230	1	Type of terracing and their management	T	• Erosion control practices • Terracing • Water management	API	Dr. Talat Farid Ahmed
1230-1330	1	Sprayers	T	• Purpose • Types • Calibration of field sprayers • Adjustment of sprayers	API	Dr. Khalid Farooq
1330-1430		Lunch Break				
1430-1530	1	Hybrid Seed Production	T	• Hybrid seed production in vegetables	API	Dr. NN Nawab
1530-1700	1.5	Different Tools of MS Excel	T/P	•	API	Mr. Hadi Ali Saeed Syed Imran Khan

Day-10: Wednesday, 25 January 2017

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1030	2	Calculations of fertilizers, insecticides, Herbicides and its applications Seed rates calculation Measurement of land	T/P	• Calculation of actual required quantity of insecticides, Herbicides, fertilizers etc. • How to measure piece of land	API	Dr. Khalid Farooq
1030-1100		Tea Break				
1100-1330	2.5	Value Addition of Cereal Crops, Fruit & Vegetable	T	• Introduction • Principles of cereals, fruit & vegetable processing • Techniques of cereal, fruit & Vegetable processing	API	Mr. Amer Mumtaz

				• Processed Products from cereal, fruits & Vegetables • Processing requirements • Solar drying of fruit and vegetable (some examples)		
1330-1430		Lunch break				
1430-1530	1	Fruit and Vegetable Marketing		•	API	Dr. Khalid Farooq
1530-1700	1.5	Introduction & Different Tools of MS PowerPoint	T/P	•	API	Mr. Hadi Ali Saeed Syed Imran Khan

Day-11: Thursday, 26 January 2017

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-0930	1	Training and extension activities under the Project	T	• Confirmation of current status of extension activities by FAs • Session contents • Training structure &activities under the Project	API	JICA Team Ms. Sumaira
0930-1030	1	Problem analysis, solution matching and Identification of further training needs	P	• Problem identification • Matching of the new learning from the training as possible countermeasures against the identified problems	API	JICA Team Ms. Sumaira
1030-1100		Tea Break				
1100-1230	1.5	Introduction to Field Work 1 and Monitoring of FA's field activities	T	• Explanation and discussion on the field work 1.	API	JICA Team Ms. Sumaira
1230-1330	1	Explanation of group exercise on the case study form	T	• Explanation on the case study form	API	JICA Team Ms. Sumaira
1330-1430		Lunch Break				
1430-1530	1	Group exercise on the case study form	P	• Exercise of filling the form	API	JICA Team Ms. Sumaira
1530-1630	1	Formulation of Field Work Plan and confirmation of activity schedule	P	• Discussing and confirming activity schedules	API	JICA Team Ms. Sumaira
1630-1730	1	Different Tools of PowerPoint	T/P	•	API	Mr. Hadi Ali Saeed Syed Imran Khan

Day-12: Friday, 27 January 2017

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0800-0900	1	Post Evaluation			API	API/JICA Team
0900-1000	1	Concluding Session			API	API/JICA Team
1000-1030	0.5	High Tea				

2nd Session
Field Assistants (FAs – 10) Curriculum Contents (Teaching and Learning Guide)

Day-01: 13-02-2017 – Monday

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1100	2.5	Orientation Session Discussion, review, plan, assignments		• Orientation, training flow, outline of training programme • Review of field work 1 • Sharing field problems with resource persons	API	Mr. Hiroyasu Onuma Dr. Khalid Farooq Dr. Ehsan-ul-Haq Dr. Shehzad Asad Dr. Muhammad Sohail Mr. Humayun Khan Dr. NN Nawab Mr. Muhammad Imran
1100-1130	0.5	Tea Break			Cafeteria	
1130-1330	2.0	Facilitation skill	T/P	• Effective facilitation • Facilitation techniques • Body language, eye contact, tone & voice	PIASA Hall	ECI
1330-1430	1.0	Prayer/Lunch Break				
1430-1630	2.0	Facilitation skill	L/P	• Effective facilitation • Facilitation techniques • Body language, eye contact, tone & voice	PIASA Hall	ECI
1630-1730	1.0	Introduction to Inpage Urdu	L/P	•	API	Syed Imran Khan Mr. Hadi Ali Saeed

Day-02: 14-02-2017 – Tuesday

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-0930	1.0	Importance of Quality seed use in wheat	T	• Question and answer (Review of field work 1) • Certified seed	API	Ms. Sundas Waqar
0930-1030	1.0	Role of Seed Certification and Registration Department	T	• Question and answer (Review of field work 1) • Certify seed production • Role of seed certification • Information about seed standards and certification procedures	API	Dr. Khalid Farooq
1030-1100	0.5	Tea Break				
1100-1330	2.5	Plant protection& IDM of wheat & maize crop	T	• Question and answer (Review of field work 1) • Major diseases and control measures	API	Dr. Shahzad Asad
1330-1430	1.0	Prayer/Lunch Break		•		
1430-1630	2.0	Plant protection& IPM of wheat	T	• Question and answer (Review of field work 1)	API	Dr. Ehsan ul Haq

		&maize crop		• Major Insect and their Biological & chemical control		
1630-1730	1.0	Practice to Inpage Urdu	L/P	•	API	Syed Imran Khan Mr. Hadi Ali Saeed

Day-03: 15-02-2017 – Wednesday

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1000	1.5	Nursery Management of Vegetables	T	• Question and answer (Review of field work 1) • Layout, media preparation, seeding, transplanting	API	Mr. Humayun Khan
1000-1100	1.0	Garlic Production Technology	T	• Question and answer (Review of field work 1) • Garlic production technology • Insect and diseases control • Post-harvest handling and marketing	API	Mr. Humayun Khan
1100-1130	0.5	Tea Break				
1130-1230	1.0	Tomato Production Technology	T	• Question and answer (Review of field work 1) • Seedling raising in nursery • Transplanting • Insect and diseases control • Post-harvest handling and marketing	API	Dr. Mazhar Hussain
1230-1330	1.0	Onion Production Technology	T	• Question and answer (Review of field work 1) • Seedling raising in nursery • Transplanting • Sets production • Insect and diseases control • Post-harvest handling and marketing	API	Dr. Hidayat Ullah
1330-1430	1.0	Prayer/Lunch Break				
1430-1630	2.0	Potato Production Technology	L/P	• Question and answer (Review of field work 1) • How we get quality seed? • Production agronomy • Insect and diseases control • Post-harvest handling and marketing	API	Dr. Khalid Farooq
1630-1730	1.0	Practice to Inpage Urdu	L/P	•	API	Syed Imran Khan Mr. Hadi Ali Saeed

Day-04: 16-02-2017 – Thursday

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1000	1.5	Nursery Management of Fruits	P	• Question and answer (Review of field work 1) • Clean and true to type nursery managements • Pruning, budding and grafting	HRI Field	Mr. Muhammad Imran
1000-1030	0.5	Tea Break				

1030-1200	1.5	Guava Production Technology	T	• Question and answer (Review of field work 1) • Guava Production technology • Insect and diseases control • Post-harvest handling and marketing	API	Mr. Iftikhar Ahmad
1200-1330	1.5	Dates Production Technology	T	• Question and answer (Review of field work 1) • Dates production technology • Insect and diseases control • Post-harvest handling and marketing	API	Mr. Iftikhar Ahmad
1330-1430	1.0	Prayer/Lunch Break				
1430-1630	2.0	Citrus Production Technology	T	• Question and answer (Review of field work 1) • Citrus production technology • Insect and diseases control • Post-harvest handling and marketing	API	Dr. Hafeez ur Rehman
1630-1730	1.0	Practice to Inpage Urdu	L/P	•	API	Syed Imran Khan Mr. Hadi Ali Saeed

Day-05: 17-02-2017 – Friday

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0800-0930	1.5	Bio-fertilizer/Bio-zote		• Introduction of bio fertilizer • PARC developed bio fertilizer (bio-zote) technology Usage, pre cautions, crops and availability	API	Dr. Tariq Sultan
0930-1030	1.0	Chickpea Production Technology	T	• Question and answer (Review of field work 1) • Chickpea production technology • Insect and disease control • Post-harvest handling and marketing	API	Mr. Asad Ullah
1030-1100	0.5	Tea Break				
1100-1200	1.0	Rice Production Technology	T	• Question and answer (Review of field work 1) • Rice production technology • Insect and diseases control • Post-harvest handling and marketing	API	Dr. Riaz A. Mann
1200-1300	1.0	Sugarcane Production Technology	T	• Question and answer (Review of field work 1) • Sugarcane production technology • Insect and diseases control • Post-harvest handling and marketing	API	Dr. Muhammad Zubair
1330-1430	1.0	Prayer/Lunch Break				
1430-1630	2.0	Olive and Grape Production Technology	P	• Question and answer (Review of field work 1) • Olive and Grape production technology • Insect and diseases control • Post-harvest handling and marketing	API	Dr. Khalid Mehmood Qureshi

1630-1730	1.0	Practice to Inpage Urdu	L/P	•	API	Syed Imran Khan Mr. Hadi Ali Saeed

Day-06: 18-02-2017 – Saturday

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0900		Islamabad City Visit		•		Mr. Aamir Ilyas

Day-7: 19-02-2017 – Sunday

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1630	8.0	Visit to BARI Chakwal	P	•	Chakwal	Mr. Azeem Tariq

Day-08: 20-02-2017 – Monday

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1030	2.0	Practice of facilitation skills	T/P	• Presentation by participants	API	ECI Dr. Khalid Farooq
1030-1100	0.5	Tea Break				
1100-1200	1.0	Practice of facilitation skills	T/P	• Presentation by participants	API	ECI Dr. Khalid Farooq
1200-1330	1.5	Question and Answer on Pests and Diseases	T/P	• Question and answer session for participants to be ready for their dissemination works on pests and diseases	API	Dr. Khalid Farooq Dr. Ehsan-ul-Haq Dr. Shehzad Asad
1330-1430	1.0	Prayer/Lunch Break				
1430-1630	2.0	Visit to Sunny Miracles (Solar Dry Unit)	P	• Observation of the process of producing dry vegetables and fruits	Sunny Miracles	Dr. Shahnaz Akhtar

Day-09: 21-02-2017 – Tuesday

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1100	2.5	Question and Answer on Field Crops	T	• Question and answer session for participants to be ready for their dissemination works on field crops	API	Dr. Khalid Farooq Dr. Muhammad Sohail Dr. Ashiq Saleem
1100-1130	0.5	Tea Break		•		
1130-1330	2.0	Question and Answer on Vegetable Crops	T	• Question and answer session for participants to be ready for their dissemination works on vegetable crops	API	Dr. Khalid Farooq Mr. Humayun Khan Dr. NN Nawab
1330-1430	1.0	Prayer/Lunch Break				
1430-1630	2.0	Question and Answer on Fruit Crops	T	• Question and answer session for participants to be ready for their dissemination works on fruit crops	API	Dr. Khalid Farooq Mr. Mukhtar Ahmed Mr. Waqas Dogar
1630-1730	1.0	Use of Urdu in MS Word &	L/P	•	API	Syed Imran Khan

		PowerPoint				Mr. Hadi Ali Saeed

Day-10: 22-02-2017 – Wednesday

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1030	2.0	Preparation of Extension Materials (1)	T/P	• Introduction of effective extension materials	PIASA Hall	Mr. Hiroyasu Onuma Ms. Sumaira M. Hussain
1030-1100	0.5	Tea Break		•		
1100-1330	2.5	Preparation of Extension Materials (2)	T/P	• Preparation of extension materials	PIASA Hall	Mr. Hiroyasu Onuma Ms. Sumaira M. Hussain
1330-1430	1.0	Prayer/Lunch Break		•		
1430-1630	2.0	Practice of extension material use	T	• Presentation by the participants	PIASA Hall	ECI Dr. Khalid Farooq
1630-1730	1.0	Use of Urdu in MS Word & PowerPoint	L/P	•	API	Syed Imran Khan Mr. Hadi Ali Saeed

Day-11: 23-02-2017 – Thursday; Introduction to Field Work 2

Time	H	Learning Unit	Type	Learning Elements	Learning Outcomes	Material Required	Place	Resource Person
0830-0930	1.0	Explanation of the Field Work 2	T	• Re-confirmation of the flow of the training activities • Explanation and discussion on theField Work 2	• Clear understanding on the tasks to be carried out during Field Work 2		API	Ms. Sumaira M. Hussain JICA Team
0930-1030	1.0	Extension Methodology	T	Different extension methodologies, their advantages and disadvantages	• Details on various extension methodologies • Appropriate selection of methodologies that are effective and suitable for the topics to be disseminated	PPT presentation	API	Ms. Sumaira M. Hussain JICA Team
1030-1100	0.5	Tea Break						
1100-1230	1.5	Extension Activity Planning	T	• Components of Extension Planning • Effectiveness of extension activity • Importance of monitoring and evaluation	• Understanding on how to plan the extension activities • Setting of evaluation indicators for the extension activities	PPT presentation Flow-chart	API	Ms. Sumaira M. Hussain JICA Team
1230-1330	1.0	Formulation of the extension activity plan	P	• Selection of the topics for extension activities according to the specific problems in the	• Extension Activity Plans (to be carried out during Field Work 2)	Planning Format	API	Ms. Sumaira M. Hussain JICA Team

				locality • Formulation of individual extension activity plans				
1330-1430		Lunch break						
1430-1530	1.0	(continued)	P	• -do-	• -do-	-do-	API	Ms. Sumaira M. Hussain JICA Team
1530-1600	0.5	Confirmation of the activity schedules	P	• Discussing and confirmation of tentative activity schedules	• Tentative activity schedules		API	Ms. Sumaira M. Hussain JICA Team
1600-1700	1.0	Use of Urdu in MS Word & PowerPoint	L/P	•			API	Syed Imran Khan Mr. Hadi Ali Saeed

Day-12: 24-02-2017 – Friday

Time	H	Learning Unit	Type	Learning Elements	Place	Resource Person
0830-1030	2.0	Concluding Session		Course evaluation & closing	API	API/JICA Team

Appendix 6-5: Other Activities

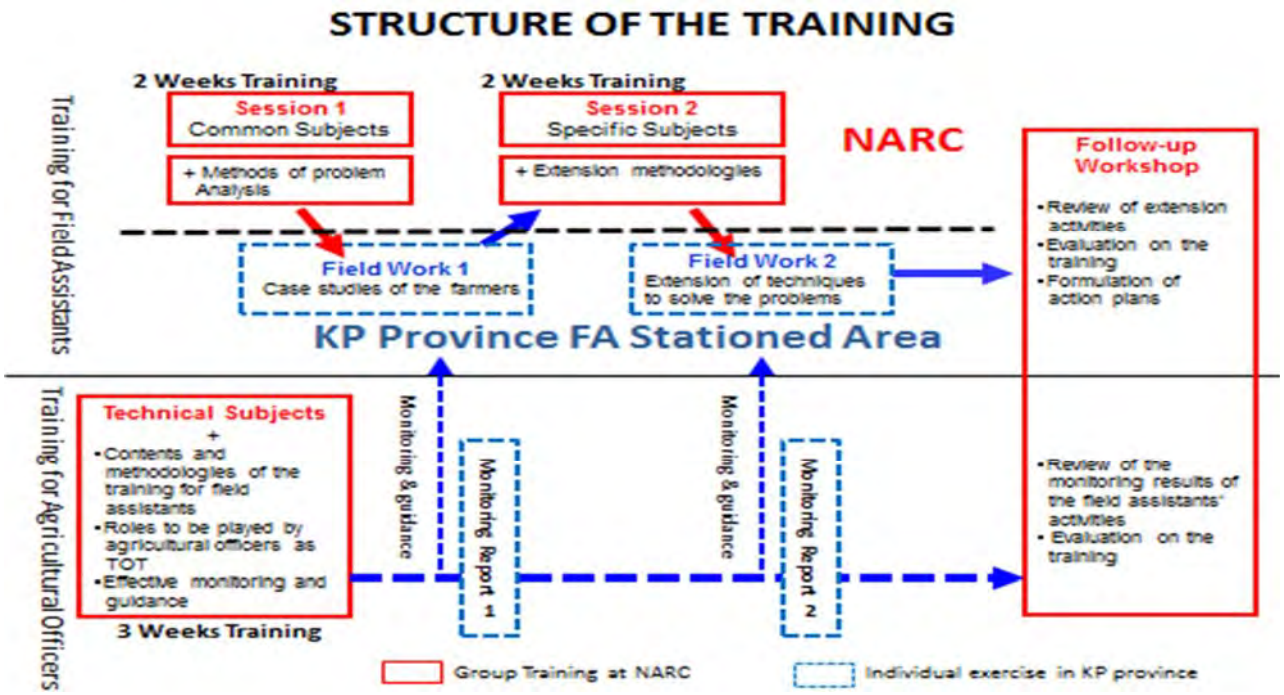
Monitoring Field Activities

Monitoring Field Activities

- For Better Utilization of Monitoring Results -

Table of Content

“The Project for Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province” which is JICA Technical Cooperation Project (January 2016 – June 2017) trained 250 Field Assistants (FA) of Directorate of Agriculture Department, KP Province. The training for those FAs went through series of sessions and field works as described below, and it was found out that their production techniques and knowledge increased, attitudes toward farmers as well as communication skill improved, and not the least, that their confidence as being extension worker have strengthened.



Field Works which were conducted by the FAs during the training structure were monitored through FA’s reports, Project M&E Officers’ Reports, and AO’s Repots. This document presents the monitoring system, formats, data entry, and what could be understood from the reports, and further detailed analysis are presented in “Results of Field Work 1 & 2 and Action Plan by Group 1-10”.

We hope that these formats could be further utilized for FA’s extension activities in future.

JICA Project Team

A. Method of Field Work 1

A-1: Purpose of Field Work 1 (FW1)

FW1was to understand farmer's practice for certain crop and difficulties which the farmers were facing in the area, through Interview Survey with the farmers;

- How are the farmers in the area producing certain crop?
- What kind of difficulties are the farmers facing to produce the crop?
- What kind of measures are farmers taking to get over the difficulties?

By understanding the farmer's practice, FAs had to think what kind of information / techniques should be needed for farmers to overcome those difficulties, as well as what could be the suitable techniques to be applied by the farmers.

A-2: Format – Attachment 1

1) FA FW1 Format (Urdu)
2) FA FW1 Format (English)

A-3: What could be understood from the Collected Data?

The format for FW1 was composed of two parts, i.e. "Farmer's Information" and "FA's Opinion and Recommendation".

Farmer's Information	1.	General Information of the Farmer	Name, Age, Years of farming experience, No. of family members, etc.
	2.	Certain Crop Production Information	・ Area of cultivation ・ Yield/ production ・ Crop Production Activity Schedule/ Calendar
	3.	Technical Features of the Crop Production by the Farmer	* Select 1 answer from mentioned options. 1) Attachment Used for Land Preparation 2) Preparation of Seed (source of seed, selection of seed, pre-sowing treatment) 3) Planting 4) Fertilizer Application 5) Weeding 6) Source of Irrigation Water 7) Pest & Disease Management 8) Harvesting 9) Storing and Transporting 10) Marketing
	4.	Farmer's idea on what might be related to the possible causes for the identified problem	Select all answers from the options which the farmers think are applicable (land preparation, preparation of seed, planting, fertilizer application, weeding, irrigation, pest/disease, harvesting, storing and transporting, marketing)
	5.	Farmer's opinion on the relation between the identified problem and possible causes	
	6.	Measures taken by the Farmer to address the problem	
	7.	Effects of the measures/ contribution to the solution of the problem	
FA's Opinion and Recommendation	8.	FA's opinion on the possible causes for the identified problem and expected countermeasures	
	9.	During Session 2, FA is expected to figure out the followings; ・ All information which could be considered as useful to solve the identified problem and to give proper suggestion to farmers. ・ Final recommendation to the farmer based on the information obtained during Session 2.	

A-4 Data Entry for Analysis

Each report was entered in the following excel format for data analysis.

a) Excel Format

	Name	Division	District	Crop	Theme	Detail	Area (ka)	Yield (kg/ka)	Land Preparation	Seed			Planting	
										Source	Selection	Treatment	Sow/Trans	Rate
1														
2														
3														
##														
##														

	Fertilization				Weeding			Water	Pest Management			Harvest	Store	Market
	NPK	DAP	Urea	FYM	Mothod	Weedicide Kind	Rate		Method	Pesticide Kind	Rate			
1														
2														
3														
##														
##														

	Possible Cause										Measures taken		
	Land preparation	Seeding	Planting	Fertilization	Weeding	irrigation	Pest control	Harvesting	Storing	Marketing	Measures	Effect	FA Opinion
1													
2													
3													
##													
##													

	For Session-2		
	Necessary knowledge	Useful knowledge	Recommendation
1			
2			
3			
##			
##			

b) Sample of the Entered Data Sheet

Group-10 (Field Work -1)			Area	Yield	Land	Seed	Seed	Seed	Planting	Rate/D	Fertilizer	Fertilizer	Fertilizer	Fertilizer	Weed	Water	Pest	Harvest	Store	Market
Crop	Theme	Detail	(ka)	(kg/ka)	Prep.	Source	Selection	Treat		ensity	NPK	DAP	Urea	FYM			manage			
Wheat	Weed	Weed	16	150	Cultivator	Previous	Ordinary	Without	Direct	7		6	6		Spray	Canal	No control	Hand	Storing	No
Wheat	Weed	Weed	280	185	Disc	Previous	Certified	Without	Direct	6.2		6.5	6.5		Spray	Canal	No control	Hand	Direct	Local
Wheat	Weed	Weed	256	150	Rotavator	Dept	Certified	Without	Direct	6.3		4.68	9.37		Spray	Well	No control	Hand	Transport	Local
Wheat	Weed	Weed	88	125	Disc	Dept	Certified	Without	Direct	6.25		6.25	6.25		Spray	Canal	No control	Machine	Storing	No
Wheat	Weed	Weed	10	88	Disc	Dept	Certified	Without	Direct	6.2			5		Spray	Well	No control	Hand	Storing	No
Wheat	Weed	Weed	100	78	Disc	Previous	Certified	Without	Direct	5			6		Spray	Well	No control	Hand	Storing	No
Wheat	Weed	Weed	50	240	Cultivator	Previous	Certified	Without	Direct	6.25		7	7		Spray	Canal	No control	Machine	Direct	Local
Wheat	Weed	Weed	160	123	Rotavator	Previous	Certified	Without	Direct	6.2		6.5	12		Spray	Canal	No control	Machine	Transport	Local
Wheat	Weed	Weed	48	93	Disc	Dept	Certified	Without	Direct	6.2		6.4	12.8		Spray	Canal	No control		Transport	Local
Wheat	Weed	Weed	80	87	Disc	Dept	Certified	Without	Direct	6.1					Spray	Rainfed	No control	Hand	Storing	No
Wheat	Weed	Weed	50	120	Disc	Dept	Certified	Without	Direct	3.5		4	4		Spray	Canal	No control	Hand	Storing	No
Wheat	Insect Pest	Aphids	32	200	Cultivator	Dept	Certified	Without	Direct	6		6.25	12.5		Spray	Canal	No control	Hand	Storing	Local
Wheat	Insect Pest	Termite	24	92	Cultivator	Dept	Certified	Without	Direct	6.2		3.12	3.12		Hand	Canal	No control	Hand	Transport	Local
Wheat	Disease	Rust	32	78	Tractor	Dept	Certified	Without	Direct	6.25		6.25	6.25		Spray	Canal	No control	Hand	Storing	No
Wheat	Disease	Rust	8	150	Rotavator	Dept	Certified	Without	Direct	6.25			18.75	7 trailer	Spray	Canal	No control	Hand	Storing	No
Wheat	Disease	Rust	64	150	Cultivator	Market	Ordinary	Without	Direct	6.25		6.25	12.5	6 trailer	Spray	Canal	No control	Hand	Storing	No
Wheat	Disease	Rust	80	31	Cultivator	Dept	Certified	Without	Direct	5		6.25	6.25	10	Spray	Canal	No control	Hand	Storing	No
Wheat	Disease	Rust	40	187	Cultivator	Market	Ordinary	Without	Direct	6			6		Spray	Canal	No control	Hand	Storing	Local
Wheat	Disease	Rust	24	60	Cultivator	Other	Ordinary	Without	Direct	5					Hand	Rainfed	No control	Hand	Storing	No
Wheat	Disease	Rust	80	150	Cultivator	Dept	Certified	Without	Direct	6		3	6		Spray	Well	No control	Hand	Storing	Local
Wheat	Disease	Rust	10	140	Cultivator	Previous	Ordinary	Without	Direct	6.2		6.5	6.5		Hand	River	No control	Hand	Storing	No
Wheat	Disease	Rust	40	62	Cultivator	Market	Certified	Without	Direct	6		6	6		Hand	Well	No control	Hand	Storing	No
Maize	Insect Pest	Aphids	8	250	Cultivator	Market	Certified	Treated	Direct	1		6.25	6.25		Spray	Canal	No control	Hand	Transport	Local
Maize	Insect Pest	Stem	35	128	Cultivator	Market	Certified	Treated	Direct	1		14	11	5 tractor	Spray	Canal	Spray	Hand	Transport	Local
Maize	Insect Pest	Stem	24	25	Cultivator	Market	Ordinary	Without	Direct	4.16		6.3	6.3		Hand	Canal	No control	Hand	Transport	Local
Rice	Insect pest	Borer	300	300	Rotavator	Market	Certified	With	Transplant	9*9inc		6.25	12.5		Spray	Canal	Spray	Machine	Direct	Local
Rice	Insect Pest	Borer	150	164	Disc	Market	Certified	Without				6.5	13		Hand	Canal	Spray	Machine	Direct	Local
Rice	Insect pest	Borer	50	144	disc	Market	Certified	Without	Transplant	9*9inc		6.25	12.5		Hand	Canal	Spray	Machine	Transport	Local
Rice	Insect Pest	Borer	104	173	Cultivator	Market	Certified	Without	Transplant	2.5ft*6i		6.2	9.37		Hand	Canal	Spray	Machine	Direct	Local
Chickpea	Insect Pest	Borer	32	47	Cultivator	Previous	Ordinary	Without	Direct	3					Hand	Rainfed	No control	Hand	Storing	No
Chickpea	Insect Pest	Borer	70	4	Disc	Previous	Ordinary	Without	Direct	3					Hand	Rainfed	No control	Hand	Storing	No
Chickpea	Disease	Blight	16	47	Disc	Previous	Ordinary	Without	Direct	3.75					Hand	Rainfed	No control	Hand	Storing	Local
Chickpea	Disease	Blight	32	37	Disc	Other	Ordinary	With	Direct	4					Hand	Rainfed	No control	Hand	Storing	Local
Chickpea	Disease	Blight	64	37	Disc	Other	Ordinary	Without	Direct	4					Hand	Rainfed	No control	Hand	Transport	Local
Chickpea	Disease	Blight	48	42	Cultivator	Market	Ordinary	Without	Direct	6					Hand	Rainfed	No control	Hand	Storing	No
Tomato	Insect Pest	Numatod	16	3	Animal	Market	Ordinary	Without	Transplant	3ft*9in			6.25	200bags	Hand	Rainfed	Spray	Hand	Transport	Other
Tomato	Disease	Blight	40	1400	Cultivator	Market	Certified	Without	Transplant	4*1.5ft		6	2	80	Hand	Well	Spray	Hand	Transport	Local
Tomato	Disease	Root rot	16	375	Rotavator	Market	Certified	Without	Transplant	4*3ft		18.75	18.75	225	Hand	Well	Spray	Hand	Transport	Local
Okra	Disease	Blight	64	130	Cultivator	Market	Certified	Without	Direct	2		3.25	6.25		Spray	Well	No control	Hand	Transport	Local
Garlic	Disease	Root rot	5	600	Cultivator	Previous	Ordinary	Without	Direct	30		6	6		Spray	Canal	No control	Hand	Storing	Local
Garlic	Disease	Root rot	40	418	Rotavator	Previou		Without	Direct	40		6.25	12.25	12	Spray	Well	Spray	Hand	Transport	Local
Sugarcane	Animal	Rodents	64	300	Cultivator	Previous	Ordinary	Without		2.5*1ft		21.8	10.9	14	Spray	Canal	With	Hand	Transport	Other
Sugarcane	Insect Pest	Stem	200	400	Disc	Previous	Certified	Without					6.25		Spray	Canal	Spray	Hand	Transport	Local
Sugarcane	Insect Pest	Stem	300	6000	Cultivator	Sugar	Certified	Without	Direct	1.5ft*6i		6.2	6.2		Spray	Canal	Spray	Hand	Transport	Local
Sugarcane	Insect Pest	Stem	72	70	Cultivator	Other	Certified	Without				6.25	6.25		Hand	Canal	Spray	Hand	Transport	Local
Sugarcane	Insect Pest	Borer	200	5500	Cultivator	Previous	Certified	Without	Transplant	1.5ft*6i		6.4	12.8		Hand	Canal	Spray	Hand	Transport	Local
Sugarcane	Disease	Leaf	700	5000	Disc	Previous	Certified	Without	Direct	1.5ft*6i		12.3	7.5			Canal	Spray	Hand	Transport	Local
Citrus	Cultivation	Fertilizati	12		Tractor	Dept		Without	Transplant	25*25ft	8.3	8.3			Hand	Well	Spray			
Guava	Insect Pest	Fruit fly	8	1250	Spade	Previous	Ordinary	With	Transplant					500	Hand	Canal	Spray	Hand	Transport	Local
Guava	Insect Pest	Fruit fly	80	414	Rotavator	Other	Ordinary	Without	Transplant	21*21ft		2kg/plan		40kg/pla	Hand	River	Spray	Hand	Transport	Local
Guava	Disease	Brown	40	412	Rotavator	Other	Ordinary	Without	Transplant	21*22ft		3kg/plan		35kg/pla	Hand	River	Spray	Hand	Transport	Local
Mango	Insect pest	Mealybug	16	340	Cultivator	Dept	Certified		Transplant	25*25ft		2kg/plan	1kg/plant		Spray	Canal	Spray	Hand	Transport	Local

Measures taken	Effect of measures	FA Opinion	Necessary knowledge	Useful knowledge	Recommendation
No	No	Use certified seed and crop rotation	- Detailed lecture on Weeds and their control	- Plougine after 1st irrigation during land prepanration -	- Ploughine after 1st irrigation during land prepanration
Spray chemicals	50% controlled	Use crop rotation and pure seed	- All methods to control weeds	- Use of compost - Use healthy and resistant varieties	- Resistant varieties - Use Compost - Use of suitable
Spray chemicals	50% controlled	Prepare land well	- Detailed information to control weeds	- Healthy seed - Use of resistant varieties - Seed	- Crop rotation - Use compost - Use suitable
Spray chemicals	50% controlled	Use pure seed, deep plough and drill	- Complete control of weeds	- Use of healthy and clean seed - Hoine methods	- Use of chemical - Use separate chemicals for broad
Spray chemicals	Fully controlled	Prepare land in better way	- More Information	- Use Suitable chemical for Narrow leaf and broad leaf	
Spray chemicals	Fully controlled	Use certified seed	- More Information	- Less use of chemicals and it should be on time if	
Spray chemicals	Some extent	Spray proper amount of chemicals	- Weeds control methods	- Helathy seed - Resistant varieties - Seed treatment -	- Crop rotation - Use of compost fertilizer - Use of
Spray chemicals	80% controlled	Use pure seed	- Complete control of weeds	- Use of specific chemcial for narrow leaf and broad	
Spray chemicals	40% controlled	Use pure seed	- Biological and chemical control methods	- Use of chemical method	- Chemical control
Spray chemicals	30% controlled	Prepare land well and use certified	- Methods to completely control weeds	- Use of resistant varieties - Crop rotation -	
Spray chemicals	50% controlled	Use certified seed		- Use of certified seed varieties - Weeds free seed -	
No	No	Spray proper chemical	- Suitable chemical - Resons of Anhid attack	- Use Acktara or Aesta (Chemical brand) - Anhid	- Use Acktara or Aesta (Chemical brand) - Use of
No	No			- Chemical control	- Spray "TENAKAL PLUS" chemical brand with
No	No	Crop rotation & proper seed selection	- Quality seed	- Use of pure seed - cron rotation - sufficient irrigation	- Resgistered vartieles of wheat - Seed treatment with
No	No	Seed should be treated	- Practiacl on seed treatment - Suitable chemical brand	- Use of pure seed and seed treatment	- Pure seed - Resistant Variety - Recommended
No	No	Use certified seed	- Suitable varieties - Suitable chemical for seed	- Use of resistant varieties - Use of chemical brand	- Suitbale varieties (Names) - Suitable Chemcial names
No	No	Seed should be treated	- Lecture on Stem borer control	- Cron Rotation - Resistant Varieties - Seed Treatment	
No	No	Do proper land preparation	- Lecture on Rust - How to get certified seed	- Change the cultivation timing- Use of resistant	- Change the cultivation timing - Use of resistant
No	No	Use deep plough, certified seed and	- More Information	- Cron rotation - Use of resistant varieties - Seed	- Cron rotation - Seed treatment
No	No	Seed shoud be treated	- Detailed lecture on Wheat rust	- Cron rotation - Use of resistant varieites - Seed	- Cron rotation - Use of resistant varieites - Seed
No	No	Use certified seed	- Names of Resistant varieties	- Use of resistant varieties- Seed treatment with	- Use Resistant varieties
No	No	Use certified seed and treat	- Practical on seed treatment- Literature on Wheat	- Use of certified seed varieties - Seed treatment - Use	
No	No	Spray properly	- Drought Resistant varieties - Reasons of Anhid	- Use of Resistant varieties	- Sufficient use of Nitrogen
Spray chemicals	Some extent	Use suitable chemicals	- Lecture on Rust	- Cron Rotation - Resistant Varieties - Seed	
No	No	Use proper chemical	- Methods to control Borer	- Seed treatment - Use of chemical - Use of certified	
Spray chemicals	80% controlled	Use certified seed	- Biological control of borer (Practical)	- Use of Feudran granules	- Late sowine is recomendable
Spray chemicals	40% controlled	Use resistant variety	- Learn more information to contorl borer in rice	- Use area resistant and area snecific variety - Sowine	- Use of chemicals
Spray chemicals	100% controlled	Spray at proper time	- Biological control disease	- Use of resistant varieties - Use of area specific	- Chemical control (Use of Feudran granules etc)
Spray chemicals	70% controlled	Spray chemicals in proper timing	- Biological control methods	- Use of Chemical (Feudran Thaimet Carten)	
No	No	Spray chemicals	- Light trans method	- Use of Chemical (Feudran or Carbo feudran)	
No	No	Spray chemicals	- Light trans method	- Use Suitable chemical for Narrow leaf and broad leaf	
No	No	Use certified seed and crop rotation	- Detailed lecture on Chick pea	- Cron rotation - Use of resistant varieties -	
No	NO	Use certified seed and rotation	- More information	- Cron rotation - Use of resistant varieties - Seed	- Cron rotation - Use of resistant varieties - Seed
No	No	Crop rotation	- Practical on seed treatment - Literature on Chick pea	- Use certified varieties - Use clean seed - Cron	
No	No		- Practical on seed treatment - Literature on Chick pea	- Use certified varieties - Use clean seed - Cron	
Spray chemicals	No	Crop rotation	- Preventive measures to Control Nematode - Control	- Cron Rotation - Easy Control method - Eradication of	
No	No	Seed should be treated	- Undated information	- Eradication of effected plants - Sufficient row to	
Spray chemicals	Some extent	Improve seedling production and	- More Information	- Use resistant varieties - Seed treatment - Use	
No	No	Seed should be treated	- More Information	- Use Certified varieties - Eradicate the effected plants	
No	No	Do proper land preparation	- Lecture on Root rot - Resistant and area specific	- Land leveling - On time irrigation - Use of resistant	- Chemical control (every month change the chemical
Spray chemicals	50% controlled	Improve seed and irrigation	- More Information	- Nursery raising in tray - Treatment with fungicide at	
Apply chemicals	Some extent	Keep the field clean	- Easy methods to control Rats	- Field Inspection or Observation - Planning - Zinc	
Spray chemicals	40% controlled	Apply proper amount of water	- Biological control of borer (Practical)	- Preventive measures - Chemical control	- Use light trans- Use Tricogama cards
Spray chemicals	60% controlled	Use proper planting density	- Biological and chemical control methods	- Use of suitable chemical brand - Use of Tricogama	
Spray chemicals	30% controlled	Spray at proper time	- Biological control methods	- Sowing in September - Cover the stems with soil in	- Use of light traps - Use Tricogama cards
Spray chemicals	50% controlled	Spray chemicals in proper timing	- Complete control of weeds	- Healthy seed - Use of resistant varieties - Seed	- Cron rotation - Use of compost - Use specific
No	No	Seed should be treated	- Control of Leaf scale disease	- Seed treatment	- Use of resistant varieties - Seed treatment
NPK + DAP	Some extent	Spray micronutrient	- Amount of Fertilizer per tree - Use of Fertilziers. -	- FYM - Compost and Chemical fertilzer(NPK)	- Use Compost in December and January. NPK in
No	No	Use trap and bury affected fruits	- Fruit fly control methods - Detailed lecture on fruit	- Use of Methyl veugenol traps to control male fruit fly -	- Use of Fruit fly trans - Use of Protien Hydrozelite
Apply trap	Some extent	Remove weed and Bury affected fruits	- More Information	- Use of Fermone traps - Eradication of effected fruit -	
Spray chemicals	Some extent	Prun properly and bury affeced fruits	- More Information	- Less irrigation - Prunning - Use of suitable chemical	
Spray chemicals	Some extent	Plough the soil on January	- Methods to contorl Mealy bug	- Plougine in december and january and use	

B. Method of Field Work 2

B-1: Purpose of Field Work 2 (FW2)

FW2 was for the FAs to get familiar with planning and conducting extension activities by applying the knowledge they gained through the training.

Planning	Step 1	Select crop, select theme of the technical dissemination, and what kind of extension methods would be good to convey the information.
	Step 2	Plan the date, venue, and necessary preparation (communication, sub-materials, tools, etc.) as well as the program (including feedback from the farmers to check whether they got right information of not)
Reporting	After conducting FW2, FA wrote the activity reports to review their activity.	

FW2, along with FW1, was accompanied by Project M&E Officers and M&E Officers prepared observation reports of the FW2 conducted by FAs.

B-2: Format – Attachment 2

1) FA FW2 Format – Planning (Urdu)
2) FA FW2 Format – Reporting (Urdu)
3) FA FW2 Format – Planning (English)
4) FA FW2 Format – Reporting (English)
5) M&E Officer Observation Report Format (English)

B-3: What could be understood from the Collected Data?

FA + M&E	Date, Venue, Target Crop, Target Theme, Extension Methods, No. of Farmers Participated
FA	Participants List, Major Questions raised by Farmers, Interest shown by Farmers
M&E	Use of Supporting Materials, AO Attendance, Utilization of Other Occasion, Performance of FA, Reaction by Farmers, Evaluation conducted by FA to Farmer after the activity, Resources for Activities (e.g., refreshment, materials)

B-4: Data Entry for Analysis

Data for FW2 were mainly collected from M&E Officers' observation reports by using following excel format.

a) Excel Format

	Name of FA	Division	District	Crop	Theme	Detail	Extension Method	Support Material	Target Farmer	No. of Farmers
	***	***	+++	Wheat	Disease	Rust	Field Visit	Charts	Wheat Grower	8
1										
2										

Continue from "No. of Farmers"

	Use of Occasion	AO Attendance	Performance	Farmer Reaction	Evaluation	Refreshment	Others
	No	Yes	Good	Interested	By Asking	Farmer	****
1							
2							

b) Sample of the Entered Data Sheet

#	Name	Division	District	Crop	Theme	Detail	Extension method	Support material	Target farmer	Number of farmers	Use of occasion	AO attendance	Performance	Farmer Rreaction	Evaluation	Refreshment
1		Malakand	Buner	Citrus	Cultivation	Fertilizatio	Group meeting	No	Citrus grower	16	No	No	Fair	interest	Asking	Farmer
2		Malakand	Buner	Peach	Insect pest	Aphids	Field Day	No	Peach grower	15	No	No	Good	interest	Asking	Farmer
3		Mardan	Mardan	Tomato	Insect pest	Cut worm	Individual visit	Textbook	Tomato grower	1	No	No	Good	ready to apply	Asking	Farmer
4		Mardan	Mardan	Wheat	Weed	Weed	Individual visit	No	Wheat grower	1	No	No	Good	ready to apply	No	No
5		Mardan	Mardan	Wheat	Weed	Weed	Group meeting	No	Wheat grower	12	No	No	Good	ready to apply	Asking	Farmer
6		Mardan	Mardan	Wheat	Insect pest	Termite	Individual visit	No	Wheat grower	2	No	No	Good	interest	No	No
7		Mardan	Swabi	Tomato	Insect pest	Cut worm	Individual visit	No	Tomato grower	1	No	No	Good	ready to apply	No	No
8		Mardan	Swabi	Onion	Disease	Downy	Individual visit	Booklet	Onion grower	1	No	No	Good	ready to apply	No	No
9		Mardan	Swabi	Wheat	Disease	Rust	Individual visit	No	Wheat grower	1	No	No	Good	interest	No	Farmer
10		Mardan	Swabi	Tomato	Disease	Blight	Individual visit	No	Tomato grower	1	No	No	Good	ready to apply	Asking	No
11		Kohat	Kohat	Okra	Disease	Blight	Group meeting	Materials,	Okra grower	9	No	Yes	Good	interest	Asking	Farmer
12		Kohat	Kohat	Tomato	Disease	Blight	Group meeting	Tools,	Tomato grower	9	No	Yes	Good	interest	Asking	Farmer
13		Bannu	Bannu	Garlic	Disease	Brown	Individual visit	No	Garlic grower	1	No	No	Good	ready to apply	Asking	?
14		Bannu	Bannu	Garlic	Weed	Weed	Individual visit	No	Garlic grower	1	No	No	Good	ready to apply	Asking	?
15		Bannu	Bannu	Wheat	Weed	Weed	Group meeting	Charts	Wheat grower	4	No	No	Excellent	interest	Asking	?
16		Bannu	Bannu	Guava	Insect pest	Fruit fly	Individual visit	Charts	Guava grower	1	No	No	Excellent	readyy to apply	Asking	?
17		Kohat	Kohat	Garlic	Cultivation	Production	Radio	?	Kohat people	Listener	No	No	Excellent	?	?	?
18		Kohat	Kohat	Tomato	Cultivation	Production	Radio	?	Kohat people	Listener	No	No	Excellent	?	?	?
19		Kohat	Kohat	Guava	Insect pest	Fruit fly	Group meeting	Tools	Guava grower	10	No	No	Good	great interest	Asking	Farmer
20		Kohat	Kohat	Guava	Disease	Brown spot	Group meeting	Tools,	Guava grower	10	No	Yes	Good	great interest	Asking	Farmer
21		Bannu	Lakki	Chickpea	Weed	Weed	Individual visit	Charts	Chickpea grower	1	No	No	Good	ready to apply	Asking	?
22		Bannu	Lakki	Wheat	Weed	Weed	Group meeting	Charts	Wheat grower	3	No	No	Good	ready to apply	Asking	?
23		Bannu	Lakki	Chickpea	Disease	Blight	Individual visit	Charts	Chickpea grower	1	No	No	Excellent	ready to apply	Asking	?
24		Bannu	Lakki	Wheat	Disease	Rust	Group meeting	Charts	Wheat grower	7	No	No	Excellent	ready to apply	Asking	?
25		D.I.Khan	D.I.Khan	Rice	Insect pest	Stem borer	Group meeting	Charts	Rice grower	6	No	Yes	Good	ready to apply	Testing	?
26		D.I.Khan	D.I.Khan	Sugarcane	Insect pest	Borer	Group meeting	Charts	Rice grower	5	No	Yes	Good	ready to apply	Testing	No
27		D.I.Khan	D.I.Khan	Wheat	Cultivation	Sowing	Individual visit	Charts	Wheat grower	1	No	No	Good	interest	Testing	?
28		D.I.Khan	D.I.Khan	Wheat	Weed	Weed	Individual visit	Charts	Wheat grower	1	No	No	Good	interest	Testing	No
29		D.I.Khan	D.I.Khan	Sugarcane	Insect pest	Borer	Group meeting	Charts	Sugarcane grower	5	No	Yes	Good	interest	Testing	?
30		D.I.Khan	D.I.Khan	Wheat	Weed	Weed	Group meeting	Charts	Wheat grower	5	No	Yes	Good	ready to apply	Testing	?
31		D.I.Khan	D.I.Khan	Wheat	Weed	Weed	Individual visit	Printed	Wheat grower	3	No	No	Good	ready to apply	Testing	No
32		D.I.Khan	D.I.Khan	Rice	Insect pest	Stem borer	Individual visit	Charts	Rice grower	1	No	No	Good	ready to apply	Testing	No
33		D.I.Khan	D.I.Khan	Wheat	Weed	Weed	Group meeting	Charts	Wheat grower	4	No	No	Good	ready to apply	Asking	?
34		D.I.Khan	D.I.Khan	Guava	Insect pest	Fruit fly	Group meeting	Tools	Guava grower	6	No	No	Good	ready to apply	Asking	?
35		D.I.Khan	D.I.Khan	Wheat	Weed	Weed	Group meeting	Charts	Wheat grower	12	No	Yes	Good	ready to apply	Asking	?
36		D.I.Khan	D.I.Khan	Sugarcane	Insect pest	Borer	Group meeting	Charts	Sugarcane grower	6	No	Yes	Good	ready to apply	Asking	?
37		D.I.Khan	D.I.Khan	Bitter	Insect pest	Fruit fly	Individual visit	Charts	Vegetable grower	1	No	No	Good	ready to apply	Testing	No
38		D.I.Khan	D.I.Khan	Wheat	Weed	Weed	Group meeting	Charts	Wheat grower	3	No	No	Good	ready to apply	Testing	No
39		D.I.Khan	D.I.Khan	Onion	Insect pest	Thrips	Group meeting	Charts	Onion grower	5	No	No	Poor	interest	Asking	?
40		D.I.Khan	D.I.Khan	Wheat	Weed	Weed	Group meeting	Charts	Wheat grower	7	No	No	Poor	interest	Asking	?

C. Monitoring of Follow-Up Visit of FW2

C-1: Purpose of Follow-Up Visit of FW2

Follow-Up visits of FW2 were conducted to confirm the degree of application of technologies by the farmers who had been disseminated with technologies by FAs during FW2. The Follow-Up visit took place a few months after the dissemination activities, c.f., after the specific season of the crop and timing of technology application.

Follow-Up visit of FW2 was conducted with either 1) direct visit to farmer with FA and M&E Officer, 2) direct visit to farmer without FA (only by M&E Officer), 3) hearing from FA as FA re-visited the farmers already.

C-2: Format – Attachment 3

1) M&E Officer Follow-Up Visit Format (English)

C-3: What could be understood from the Collected Data?

- Whether farmer applied the disseminated technology or not
- If yes, number of farmers who applied the technology
- If yes, whether the farmer got good result or not.
- If no, reason of not applying the technology

C-4: Data Entry for Analysis

Data for Follow-Up of FW2 were collected from M&E Officers' observation reports by using following excel format.

a) Excel Format

	Basic Information			Field Work - 2					Follow-Up of Field Work 2								
	Name	Division	District	Crop	Theme	Detail	Type	No. of farmer	Method	Application	No. of applied farmer	(%)	Reason in case of no application	Did you have good results?	Are you going to continue?	Reason in case of no good results.	Other observation.
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
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18																	
19																	
20																	
21																	
22																	
23																	
24																	
25																	
26																	
27																	
28																	
29																	
30																	

b) Sample of the Entered Data Sheet

	Basic Information			Field Work - 2					Follow-Up of Field Work 2								
	Name	Division	District	Crop	Theme	Detail	Type	No. of farmer	Method	Application	No. of applied farmer	(%)	Reasons in case of no application	Did you have good results?	Are you going to continue?	Reason in case of no good results	Other observation
1				Maize	Weed	Weed control	Individual	1	DVwFA	Yes	1	100%		Yes	Yes		
2				Fruits	Insect Pest	Fruit fly	Individual	1	DVwFA	Yes	1	100%		Yes	Yes		
3				All	Insect Pest	Aphids	Group	13	DVwFA	Yes	7	54%	Wheat grower	Yes	Yes		
4				Maize	Weed	Weed control	Group	18	DVwFA	Yes	18	100%		Yes	Yes		
5				Citrus	Cultivation	Fruit drop	Group	13	DVwFA	Yes	3	23%	High input cost	Yes	Yes		
6				Fruits	Insect Pest	Fruit fly	Group	11	DVwFA	Yes	5	45%	Slow effect	Yes	Yes		
7				Wheat	Disease	Smut	Group	18	HearingFA	Yes	18	100%		Yes	Yes		
8				Gourd	Insect Pest	Fruit fly	Field Day	17	DVwFA	Yes	10	59%	Slow effect	Yes	Yes		
9				Maize	Insect Pest	Termite	Group	13	DVwFA	Yes	6	46%	Chemicals are more effective	Yes	Yes		
10				Peach	Disease	Gummosis	Group	7	DVwFA	Yes	4	57%		Yes	Yes		
11				Onion	Disease	Damping off	Group	54	DVwFA	Yes	30	56%		Yes	Yes		
12				Tomato	Insect Pest	Nematode	Group	23	DVwFA	Yes	20	87%		Yes	Yes		
13				Onion	Cultivation	Nursery Raising	Group	13	DVwFA	No	0	0%	High input cost				
14				Wheat	Weed	Weed control	Group	35	DVwFA	Yes	28	80%		Yes	Yes		
15				Onion	Disease	Damping off	Group	70	DVwFA	Yes	50	71%		Yes	Yes		
16				Onion	Disease	Downy mildew	Group	50	DVwFA	Yes	40	80%		Yes	Yes		
17				Onion	Cultivation	Nursery Raising	Training	13	DVwFA	Yes	10	77%		Yes	Yes		
18				All	Cultivation	Use Of Chemical	Group	5	DVwFA	Yes	3	60%		Yes	Yes		
19				All	Insect Pest	Fruit fly	Group	4	DVwFA	Yes	4	100%		Yes	Yes		
20				Maize	Insect Pest	Stem borer	Group	13	DVwFA	Yes	13	100%		Yes	Yes		
21				Peach	Insect Pest	Fruit fly	Group	15	DVwFA	Yes	8	53%	Wheat grower	Yes	Yes		
22				Maize	Cultivation	FYM Preparation	Group	12	DVwFA	No			Single field day was not enough				
23				Tomato	Cultivation	Nursery Raising	Group	10	DVwFA	Yes	6	60%		Yes	Yes		
24				Tomato	Cultivation	Cultivation	Group	5	DVwoFA	Yes	5	100%		Yes	Yes		
25				Maize	Weed	Weeds	Group	10	DVwoFA	Yes	10	100%		Yes	Yes		
26				Tomato	Cultivation	Nursery Raising	Group	7	DVwFA	Yes	1	14%	Farmers didn't grow tomato	Yes	Yes		
27				Wheat	Animal Pest	Rodents control	Group	11	DVwFA	No			Written information needed				
28				Wheat	Yield	Low Yield	Group	14	DVwFA	Yes	10	71%		Yes	Yes		
29				All	Insect Pest	Fruit fly	Group	4	DVwFA	No			Still relactant				
30				Wheat	Disease	Rust	Group	13	DVwFA	Yes	13	100%		Yes	Yes		
31				All	Insect Pest	Fruit fly	Group	3	DVwFA	Yes	3	100%		Yes	Yes		
32				Peach	Insect Pest	Fruit fly	Field Visit	1	DVwFA	Yes	1	100%		Yes	Yes		
33				Tomato	Insect Pest	Others	Training	23	HearingFA	Yes	23	100%		Yes	Yes		
38				Potato	Insect Pest	Others	FFS	25	DVwFA	Yes	20	80%		Yes	Yes		
39				Maize	Yield	Low Yield	Field Day	60	DVwFA	Yes	45	75%		Yes	Yes		
40				Maize	Disease	Others	Field Visit	20	DVwFA	Yes	15	75%		Yes	Yes		

D. Monitoring Action Plan Activities

D-1: Purpose of Action Plan Activities

During Follow-Up Workshop, which was the last activity within the training flow, FAs were requested to formulate 3 action plans for the coming 1 year. This exercise was to ensure that the FAs would continue their dissemination activities of their learning to farmers even after the training.

Similar to FW1 and FW2, M&E Officers supported FAs when they conducted the action plan activities. Thus, when action plan activities were conducted, there was proper monitoring on those activities by M & E Officers.

D-2: Format – Attachment 4

1) FA Action Plan Planning Format (Urdu)
2) FA Action Plan Planning Format (English)
3) M&E Action Plan Activity Observation Report

D-3: What could be understood from the Collected Data?

M&E	1) Date, 2) Venue, 3) Target Crop, 4) Target Theme, 5) Extension Methods, 6) No. of Farmers Participated, 7) Use of Supporting Materials, 8) AO Attendance, 9) Utilization of Other Occasion, 10) Performance of FA,11) Reaction by Farmers, 12) Evaluation conducted by FA to Farmer after the activity, 13) Resources for Activities (e.g., refreshment, materials)

D-4: Data Entry for Analysis

Data for Action Plan Activities were collected from M&E Officers' observation report by using following excel format.

a) Excel Format

	Name of FA	Division	District	Crop	Theme	Detail	Extension method	Support material	Target farmer	Number of farmers	Use of occasion	AO attendance	Performance	Farmer Rreaction	Evaluation	Refreshment	Others
1	********	****	****	Wheat	Disease	Rust	Field Visit	Charts	Wheat grower	8	No	Yes	Good	Interest	By asking	Farmer	***
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
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26																	
27																	
28																	
29																	
30																	
##																	
##																	
##																	

b) Sample of the Entered Data Sheet

#	Name	Group	Division	District	Crop	Theme	Detail	Method	Material	Target farmer	Number of farmer	Use of occasion	AO attendance	Performance	Farmer reaction	Evaluation	Refreshment
1		FA1	Malakand	Buner	Wheat	Weed	Weed	Field visit	No	Farmer facing the problem	1	No	No	Fair	interest	Asking	No
2		FA1	Malakand	Buner	Citrus	Disease	Wilting	Individual visit	No	Farmer facing the problem	1	No	No	Fair	interest	No	FA
3		FA1	Malakand	Buner	Peach	Cultivation	Pruning	Individual visit	No	Peach grower	1	No	No	Good	interest	No	Farmer
4		FA1	Malakand	Buner	Citrus	Cultivation	Layout	Field day	Tools	Orchard grower	3	No	No	Fair	interest	Testing	FA
5		FA1	Malakand	Buner	Maize	Weed	Weed	Field visit	Printed matter	Maize grower	1	MFSC registration	No	Good	interest	Asking	FA
6		FA1	Malakand	Buner	Wheat	Insect Pest	Termite control	Individual visit	No	Wheat grower	1	No	No	Excellent	interest	Asking	Farmer
7		FA1	Malakand	Buner	Peach	Insect Pest	Fruit fly control	Individual visit	No	Farmer facing the problem	1	No	No	Fair	interest	Asking	FA
8		FA1	Malakand	Buner	Wheat	Weed	Wild oat control	Field Visit	Printed matter	Wheat grower	5	No	No	Fair	interest	Testing	No
9		FA1	Malakand	Buner	Maize	Weed	Weed	Individual visit	No	Maize grower	1	No	No	Fair	great interest	No	Farmer
10		FA1	Malakand	Buner	Wheat	Weed	Weed	Field visit	No	Farmers suffering from weed	5	No	No	Fair	interest	Asking	Farmer
11		FA1	Malakand	Buner	Bitter gourd	Insect Pest	Fruit fly control	Field visit	No	Vegetable grower	1	No	No	Excellent	great interest	Asking	Farmer
12		FA1	Malakand	Buner	Citrus	Disease	Wilting	Field visit	No	Farmers suffering from the disease	1	No	No	Excellent	great interest	Asking	Farmer
13		FA1	Malakand	Buner	Tomato	Insect Pest	Fruit fly control	Group meeting	No	Farmers suffering fruit fly	3	No	Yes	Poor	interest	No	FA
14		FA1	Malakand	Buner	Maize	Weed	Weed	Field visit	Printed matter	Maize grower	1	No	No	Fair	great interest	Testing	FA
15		FA1	Malakand	Buner	Tomato	Insect Pest	Fruit fly control	Field visit	Printed matter	Tomato grower	1	No	No	Good	great interest	Asking	FA
16		FA1	Malakand	Dir Upper	Wheat	Weed	Weed	FFS	Tools	Wheat grower	19	No	No	Fair	interest	Asking	FA
17		FA1	Malakand	Dir Upper	Peach	Cultivation	Pruning	Group meeting	Tools	Peach grower	5	No	No	Good	interest	Testing	Farmer
18		FA1	Malakand	Dir Upper	Wheat	Weed	Weed	Group meeting	Printed matter	Wheat grower	6	No	No	Good	interest	Asking	FA
19		FA1	Malakand	Malakand	Pea	Weed	Weed	Group meeting	Printed matter	Pea grower	3	No	No	Good	interest	Testing	No
21		FA1	Malakand	Malakand	Apricot	Disease	Flower drop	Individual visit	No	Apricot grower	1	No	No	Fair	interest	No	No
22		FA1	Malakand	Shangla	Orchards	Cultivation	Management	Field day	Tools	Farmer without experience of orchards	100	Field Day	Yes	Excellent	great interest	Asking	Dept.
24		FA1	Malakand	Shangla	Maize	Insect Pest	Insect pest	Group meeting	Printed matter	Maize grower	8	No	No	Good	interest	Testing	FA
25		FA1	Malakand	Swat	Tomato	Cultivation	Hybrid seed	Group meeting	Printed matter	Tomato grower	50	Company program	Yes	Good	great interest	Asking	Dept.
28		FA1	Malakand	Swat	Onion	Disease	Downy mildew	Group meeting	Charts	Onion grower	4	FFS	No	Excellent	will apply	Asking	FA
29		FA1	Malakand	Swat	All	Cultivation	Soil analysis	Group meeting	Tools	Farmers interested in soil analysis	6		No	Good	interest	Asking	No
30		FA1	Malakand	Swat	Onion	Cultivation	Fertilization	Individual visit	No	Onion grower	3	No	No	Excellent	will apply	Asking	FA
31		FA2	Malakand	Buner	Tomato	Cultivation	Germination	Individual visit	No	Tomato grower	1	No	No	Fair	interest	Asking	No
32		FA2	Malakand	Buner	Citrus	Cultivation	Layout	Field day	Tools	field owner	3	No	No	Good	interest	Testing	FA
33		FA2	Malakand	Buner	Wheat	Weed	Weed	Field visit	No	Farmer facing the problem	1	No	No	Fair	interest	No	No
34		FA2	Malakand	Buner	Citrus	Cultivation	Layout	Field day	Tools	Orchard grower	4	No	No	Good	interest	Asking	Farmer
35		FA2	Malakand	Buner	Bitter gourd	Insect Pest	Fruit fly control	Field visit	No	Vegetable grower	2	No	No	Good	interest	Asking	Farmer
36		FA2	Malakand	Buner	Wheat	Weed	Weed	Field visit	No	Wheat grower	2	No	No	Good	interest	Asking	FA
37		FA2	Malakand	Buner	Maize	Weed	Weed control	Group meeting	No	Maize grower	7	No	Yes	Fair	no interest	Asking	Farmer
38		FA2	Malakand	Buner	Wheat	Insect Pest	Termite control	Field visit	No	Termite suffering farmers	1	No	No	Good	interest	Asking	FA
39		FA2	Malakand	Buner	Tomato	Cultivation	Bed preparation	Group meeting	No	Vegetable grower	4	No	No	Good	interest	Asking	Farmer
40		FA2	Malakand	Buner	Tomato	Cultivation	Low germination	Group meeting	No	Tomato grower	3	No	No	Fair	interest	No	No

E. Suggestion for Monitoring FA's Extension Activities Method in the Future

E-1: "Monitoring" FA's Extension Activities

By collecting the data of the extension activities which FAs conduct, we can understand not just the number of farmers who would be reached, but also the area-wise tendency and characteristics which would serve as useful information for planning extension activities in future.

FW2 format used during the Project training can also be utilized by FAs while conducting extension activities, the data of which shall be collected at district level so that the extension staff would be able to review the activities, as well as to plan for the future activities. The collected data at district level, shall also be combined at provincial level, so that those data can be utilized for DoAE strategic planning.

E-2: Format – Attachment 2

1) FA FW2 Format – Reporting (Urdu)

E-3: What could be understood from the Collected Data?

M&E	1) Date, 2) Venue, 3) Target Crop, 4) Target Theme, 5) Detail, 6) Extension Methods, 7) Support Material, 8) Target Farmer, 9) No. of Farmers Participated, 10) Farmer's Reaction

E-4: Data Entry for Analysis

a) Excel Format

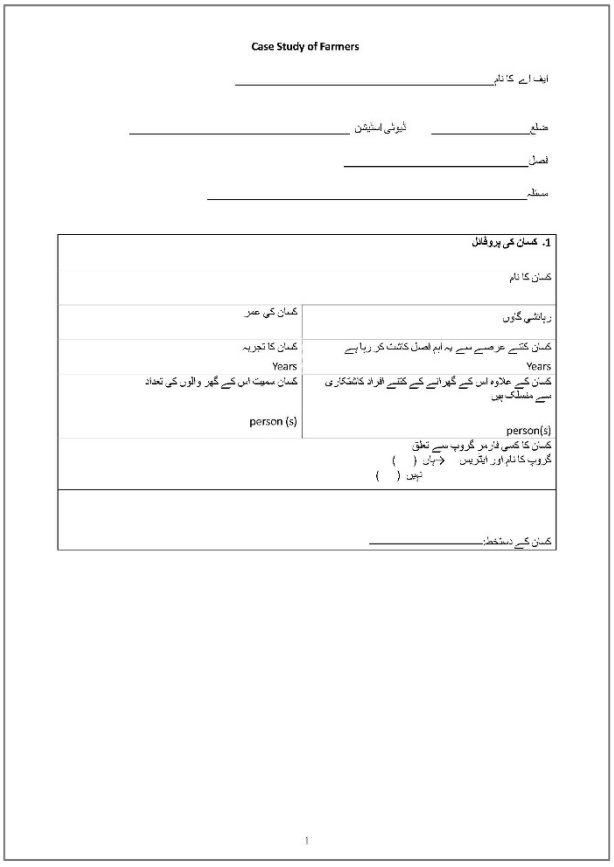
	District	Name of FA	Date	Place	Crop	Theme	Detail	Extension method	Support material	Target farmer	Number of farmers	Farmer reaction
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												

b) Sample of the Entered Data Sheet

#	District	Name of FA	Date	Place	Crop	Theme	Detail	Extension method	Support material	Target farmer	Number of farmer	Farmer reaction
1	Buner				Wheat	Weed	Weed	Field visit	No	Farmer facing the problem	1	interest
2	Buner				Citrus	Disease	Wilting	Individual visit	No	Farmer facing the problem	1	interest
3	Buner				Peach	Cultivation	Pruning	Individual visit	No	Peach grower	1	interest
4	Buner				Citrus	Cultivation	Layout	Field day	Tools	Orchard grower	3	interest
5	Buner				Maize	Weed	Weed	Field visit	Printed matter	Maize grower	1	interest
6	Buner				Wheat	Insect Pest	Termite control	Individual visit	No	Wheat grower	1	interest
7	Buner				Peach	Insect Pest	Fruit fly control	Individual visit	No	Farmer facing the problem	1	interest
8	Buner				Wheat	Weed	Wild oat control	Field Visit	Printed matter	Wheat grower	5	interest
9	Buner				Maize	Weed	Weed	Individual visit	No	Maize grower	1	great interest
10	Buner				Wheat	Weed	Weed	Field visit	No	Farmers suffering from weed	5	interest
11	Buner				Bitter gourd	Insect Pest	Fruit fly control	Field visit	No	Vegetable grower	1	great interest
12	Buner				Citrus	Disease	Wilting	Field visit	No	Farmers suffering from the disease	1	great interest
13	Buner				Tomato	Insect Pest	Fruit fly control	Group meeting	No	Farmers suffering fruit fly	3	interest
14	Buner				Maize	Weed	Weed	Field visit	Printed matter	Maize grower	1	great interest
15	Buner				Tomato	Insect Pest	Fruit fly control	Field visit	Printed matter	Tomato grower	1	great interest
16	Dir Upper				Wheat	Weed	Weed	FFS	Tools	Wheat grower	19	interest
17	Dir Upper				Peach	Cultivation	Pruning	Group meeting	Tools	Peach grower	5	interest
18	Dir Upper				Wheat	Weed	Weed	Group meeting	Printed matter	Wheat grower	6	interest
19	Malakand				Pea	Weed	Weed	Group meeting	Printed matter	Pea grower	3	interest
21	Malakand				Apricot	Disease	Flower drop	Individual visit	No	Apricot grower	1	interest
22	Shangla				Orchards	Cultivation	Management	Field day	Tools	Farmer without experience of orchards	100	great interest
24	Shangla				Maize	Insect Pest	Insect pest	Group meeting	Printed matter	Maize grower	8	interest
25	Swat				Tomato	Cultivation	Hybrid seed	Group meeting	Printed matter	Tomato grower	50	great interest
28	Swat				Onion	Disease	Downy mildew	Group meeting	Charts	Onion grower	4	will apply
29	Swat				All	Cultivation	Soil analysis	Group meeting	Tools	Farmers interested in soil analysis	6	interest
30	Swat				Onion	Cultivation	Fertilization	Individual visit	No	Onion grower	3	will apply
31	Buner				Tomato	Cultivation	Germination	Individual visit	No	Tomato grower	1	interest
32	Buner				Citrus	Cultivation	Layout	Field day	Tools	field owner	3	interest
33	Buner				Wheat	Weed	Weed	Field visit	No	Farmer facing the problem	1	interest
34	Buner				Citrus	Cultivation	Layout	Field day	Tools	Orchard grower	4	interest
35	Buner				Bitter gourd	Insect Pest	Fruit fly control	Field visit	No	Vegetable grower	2	interest

Attachment 1: Formats for FW1

<Urdu>



Case Study of Farmers

ایف اے کا نام_____

ضلع_____ ٹیوٹی ایشن _____

فصل_____

مسئلہ_____

1. کسان کی پروفائل

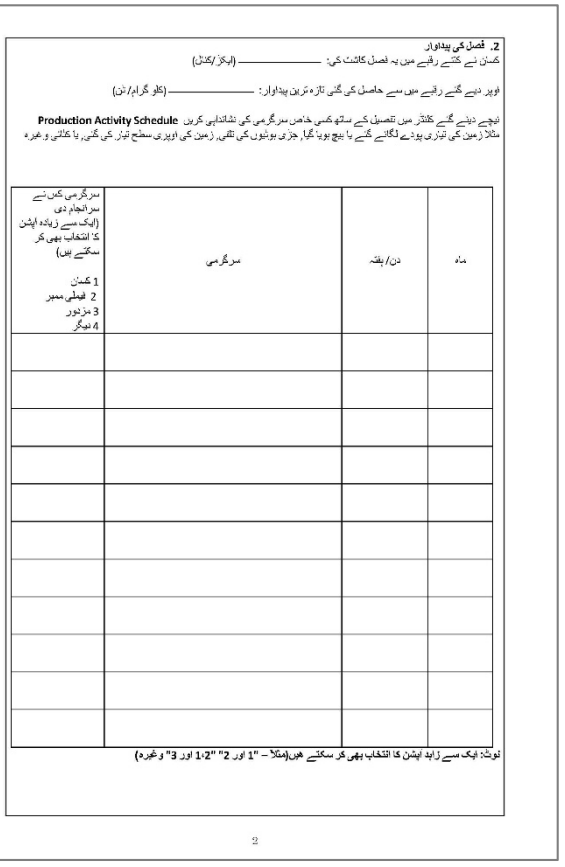
کسان کا نام

زبانشی گاؤں	کسان کی عمر
کسان کتنے عرصے سے یہ اہم فصل کاشت کر رہا ہے Years	کسان کا تجربہ Years
کسان کے علاوہ اس کے گھرانے کے کتنے افراد کاشتکاری سے منسلک ہیں person(s)	کسان سمیت اس کے گھر والوں کی تعداد person (s)

کسان کا کسی فارمر گروپ سے تعلق
گروپ کا نام اور ایٹریبس ہاں ( )
نہیں ( )

کسان کے دستخط:_____

1



2. فصل کی پیداوار

کسان نے کتنے رقبے میں یہ فصل کاشت کی: _____ (ایکڑ/کنال)

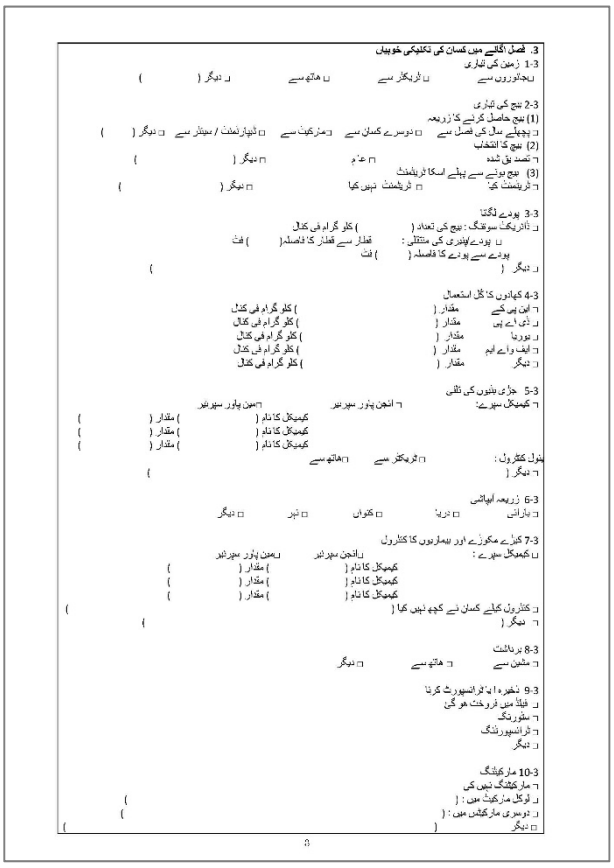
اوپر دیے گئے رقبے میں سے حاصل کی گئی تازہ ترین پیداوار: _____ (کلو گرام/ٹن)

نیچے دیئے گئے کالمز میں تفصیل کے ساتھ کسی خاص سرگرمی کی نشاندہی کریں **Production Activity Schedule**
مثلاً زمین کی تیاری، پودے لگانے گئے یا بیج بوئے گیا، جڑی بوٹیوں کی نلائی، زمین کی اوپری سطح تیار کی گئی، یا کٹائی وغیرہ

ماہ	دن/ ہفتہ	سرگرمی	سرگرمی کس نے سرانجام دی (ایک سے زیادہ آپشن کا انتخاب بھی کر سکتے ہیں) 1 کسان 2 فیملی ممبر 3 مزدور 4 دیگر

نوٹ: ایک سے زائد آپشن کا انتخاب بھی کر سکتے ہیں(مثلاً – "1 اور 2" "1،2 اور 3" وغیرہ)

2



3. فصل اگانے میں کسان کی تکنیکی خوبیاں

3-1 زمین کی تیاری
ہل/جانور سے □ ٹریکٹر سے □ ہاتھ سے □ دیگر ( )

3-2 بیج کی تیاری
(1) بیج حاصل کرنے کا ذریعہ:
□ پچھلے سال کی فصل سے □ دوسرے کسان سے □ مارکیٹ سے □ ڈیپارٹمنٹ / میٹنگ سے □ دیگر ( )
(2) بیج کا انتخاب
□ تصدیق شدہ □ عام □ دیگر ( )
(3) بیج بونے سے پہلے اسکا ٹریٹمنٹ
□ ٹریٹمنٹ کیا: □ ٹریٹمنٹ نہیں کیا □ دیگر ( )

3-3 پودے لگانا
□ ڈائریکٹ سوئنگ: بیج کی تعداد ( ) کلو گرام فی کنال
□ پودے/نرسری کی منتقلی: قطار سے قطار کا فاصلہ( ) فٹ
پودے سے پودے کا فاصلہ ( ) فٹ
□ دیگر ( )

3-4 کھادوں کا کُل استعمال
□ این پی کے مقدار ( ) کلو گرام فی کنال
□ ڈی اے پی مقدار ( ) کلو گرام فی کنال
□ یوریا مقدار ( ) کلو گرام فی کنال
□ ایف وائے ایم مقدار ( ) کلو گرام فی کنال
□ دیگر مقدار ( ) کلو گرام فی کنال

3-5 جڑی بوٹیوں کی نلائی
□ کیمیکل سپرے: □ انجن پاور سپرینر □ مین پاور سپرینر
کیمیکل کا نام ( ) مقدار ( )
کیمیکل کا نام ( ) مقدار ( )
کیمیکل کا نام ( ) مقدار ( )
ہینڈ کلٹیویٹر: □ ٹریکٹر سے □ ہاتھ سے
□ دیگر ( )

3-6 زرعہ ادویات
□ بارانی □ دریا □ کنواں □ نہر □ دیگر

3-7 کیڑے مکوڑے اور بیماریوں کا کنٹرول
□ کیمیکل سپرے : □ انجن سپرینر □ مین پاور سپرینر
کیمیکل کا نام ( ) مقدار ( )
کیمیکل کا نام ( ) مقدار ( )
کیمیکل کا نام ( ) مقدار ( )
□ کنٹرول کیلئے کسان نے کچھ نہیں کیا ( )
□ دیگر ( )

3-8 برداشت
□ مشین سے □ ہاتھ سے □ دیگر

3-9 ذخیرہ یا ٹرانسپورٹ کرنا
□ فیلڈ میں فروخت ہو گئی
□ سٹورنگ
□ ٹرانسپورٹنگ
□ دیگر

3-10 مارکیٹنگ
□ مارکیٹنگ نہیں کی
□ لوکل مارکیٹ میں : ( )
□ دوسری مارکیٹس میں : ( )
□ دیگر ( )

3

4. کسان سے کہیں کہ مندرجہ ذیل میں سے کوئی سے تین مظامین کا انتخاب کریں جن کا مسئلے کی ممکنہ وجوہات سے کوئی تعلق ہو:

□ 3-1: زمین کی تیاری (آلات، ہل چلانے کا طریقہ)
□ 3-2: بیج کی تیاری (خریداری، زیر پانشی)
□ 3-3: پلانٹنگ (سوئنگ اور پلانٹنگ کا طریقہ، پلانٹنگ کا مواد)
□ 3-4: کھادوں کا استعمال (خریداری، استعمال کی تفصیل جیسہ کہ مقدار اور وقت)
□ 3-5:جڑی بوٹیوں کی نلائی (آلات، تدارک کی تفصیل جیسہ مناسب کیمیکل، مقدار اور وقت)
□ 3-6:آبپاشی (پانی کے زرائع، آبپاشی کی تفصیل جیسہ مقدار اور وقت)
□ 3-7: کیڑے مکوڑے/ بیماریاں (آلات، تدارک کی تفصیل جیسہ مناسب کیمیکل، مقدار اور وقت)
□ 3-8: برداشت (آلات، برداشت کی تفصیل جیسہ طریقہ کار اور وقت)
□ 3-9: ذخیرہ / ٹرانسپورٹ (ذخیرہ کرنے کا طریقہ کار، برداشت کے بعد کے انتظامات اور ٹرانسپورٹ)
□ 3-10:مارکیٹنگ (مارکیٹس کا نہ ہونا، قیمتوں کا اُتار چڑھاؤ)

5. اوپر منتخب کیے گئے مضامین اور مسلے کے درمیان تعلق کے بارے میں کسان کی راے بیان کریں:

6. مسلے کے حل کیلئے کسان کی جانب سے کیے جانے والے اقدامات:
کسان کی جانب سے مسلے کے حل کیلئے ابتک جو کوششیں کی گئی اُن کی تفصیل بیان کریں، جیسہ کوئی ایسی تکنیک جو کسان نے ایجاد کی ہو، کوئی مخصوص روائتی انتظامات، کسی غیر روائتی چیز کا استعمال یا اور کچھ۔

7. کسان کی جانب سے کیے جانے والے اقدامات کے اثرات / کیے جانے والے اقدامات کا مسلے کے حل میں کردار
اوپر بیان کیے گئے اقدامات کے نتیجے میں جو بہتری نظر آئی ہے اُسے بیان کریں۔ اگر کسان مسلے کو حل کرنے میں ناکام رہا ہے تو اُسکی وجوہات بیان کریں۔

8. کسان سے حاصل کی گئی تمام معلومات کی بنیاد پر مسلے کی ممکنہ وجوہات اور مناسب حل کے بارے میں ایف اے اپنی راے بیان کریں

4

9. مندرجہ ذیل حصہ سیشن 2 سے پہلے اور درمیان میں پر کریں:

9-1 کسان کی بہتر رہنمائی اور مسئلے کے بہترین حل کے لیے سیشن2 شروع ہونے سے پہلے مسئلے سے متعلق ضروری معلومات کی لسٹ بنائیں

9-2 کسان کی بہتر رہنمائی اور مسئلے کے بہترین حل کے لیے تمام مفید معلومات تحریر کریں

9-3 مسئلے کے حل کے لیے سیشن2 سے حاصل کی گئی معلومات کی بنیاد پر کسان کے لیے حتمی تجویز یا سفارشات بیان کریں

<English>

Case Study of Farmers

Name of the participant: _____

Duty Station: _____ **District:** _____

Crop: _____ **Variety:** _____

Problem to be addressed: _____

1. Farmer's Profile	
Name of the farmer	
Age of the farmer:	Village of residence:
Farming experience: Years	Experience in cultivating the major crops: Years
No of family members (including the farmer): person (s)	No. of family members engaged in farming activities other than the farmer: person(s)
Affiliation to any farmer groups / cooperatives: ( ) Yes - Name & address of the group: _____ ( ) No	
Signature of the interviewed farmer	

2. Poduction of Crop by the Famer

Area cultivated with the crop: _____ (acre or kanal)

Yield / production out of the area planted above in the latest season:

_____ (ton or kg)

Production activity schedule:
(indicate particular activity, i.e. land preparation, planting/sowing, weeding, application of topdressing, harvesting etc. in detail in the following calendar table)

Month (start with the month when the production of the crop starts	Week / day	Activity	Entetr the following code of the person(s) who carry out the activity (* NOTE) 1. The farmer 2. Family member 3. Hired laborer 4. Others (specify)

* NOTE: more than one choice can be selected (i.e. "1 and 2", "1,2, and 3" etc.)

3. Technical Features of the Crop Production by the Farmer

3-1. Attachment for land preparation
☐ Cultivator ☐ Disc harrow ☐ Rotavator ☐ Ridger ☐ Others ( )

3-2. Preparation of seed
(1) Source of seed
☐ Previous crop ☐ Other farmer ☐ Market ☐ Dept/Center ☐ Others ( )
(2) Selection of seed
Cetified seed | | Ordinary seed | | Others ( )
(3) Pre-sowing treatment
☐ With treatment ☐ Without treatment ☐ Others ( )

3-3. Planting
Direct sowing: Seed rate ( ) kg/kanal
☐ Transplanting: Planting Density Between rows ( ) ft
Between plants ( ) ft
☐ Others ( )

3-4. Fertilizer Application in Total
NPK: Rate ( ) kg/kanal
DAP: Rate ( ) kg/kanal
☐ Urea: Rate ( ) kg/kanal
FYM: Rate ( ) kg/kanal
☐ Others: Rate ( ) kg/kanal

3-5. Weeding
| | Chemical spray: | | Engine power sprayer | | Man power sprayer
Kind of Chemical ( ) Rate ( )
Kind of Chemical ( ) Rate ( )
Kind of Chemical ( ) Rate ( )
| | Manual control: | | By tractor | | By hand
☐ Others: ( )

3-6. Source of Irrigation Water
☐ Rainfed ☐ River ☐ Well ☐ Canal ☐ Others ( )

3-7. Pest and Disease Management
| | Chemical spray: | | Engine power sprayer | | Man power sprayer
Kind of Chemical ( ) Rate ( )
Kind of Chemical ( ) Rate ( )
Kind of Chemical ( ) Rate ( )
| | No control:
Others: ( )

3-8. Harvesting
☐ By machine ☐ By hand ☐ Others ( )

3-9. Storing and Transporting
| | Direct sales in the field:
☐ Storing:
☐ Transporting:
☐ Others ( )

3-10. Marketing
| | No marketing:
| | Local market: ( )
☐ Other market: ( )
☐ Others ( )

4. Ask farmer to select the subjects which might be related to the possible causes for the identified problem:

☐ 3-1: Land preparation (Equipment, Plowing method)
☐ 3-2: Preparation of seed (Procurement, Treatment)
☐ 3-3: Planting (Sowing and planting method, Planting materials)
☐ 3-4: Fertilizer application (Procurement, Application details such as amount and time)
☐ 3-5: Weeding (Equipment, Control details such as suitable chemicals, amount and time)
☐ 3-6: Irrigation (Water resources, Irrigation details such as irrigation amount and timing)
☐ 3-7: Pest/Disease (Equipment, Control details such as suitable chemicals, amount and time)
☐ 3-8: Harvesting (Equipment, Harvesting details such as method and timing)
☐ 3-9: Storing and transporting (Storing method, Post harvest, Transportation)
☐ 3-10: Marketing (Market availability, Price fluctuation)

5. Describe the farmer's opinion on the relation between the identified probem and the possible causes in each operation selected above:

6. Measures taken by the farmer to address the problem:
Describe what the farmer have so far tried to solve the problem in details, such as any innovative techniques, specific cultural management practices, application of unconventional inputs, and so forth.

7. Effects of the measures / contribution to the solution of the problem:
Describe in details what have been the tangible changes / improvements observed as the result of the application of the measures mentioned above. If the farmer failed to solve the problems, describe the assumed reason why the measure did not work (as the farmer's opinion).

8. Based on the above information collected from farmer, describe the FA's opinion on the the possible causes for the identified problem and the expected countermeasures.

9. The following parts should be filled before and during Session-2:

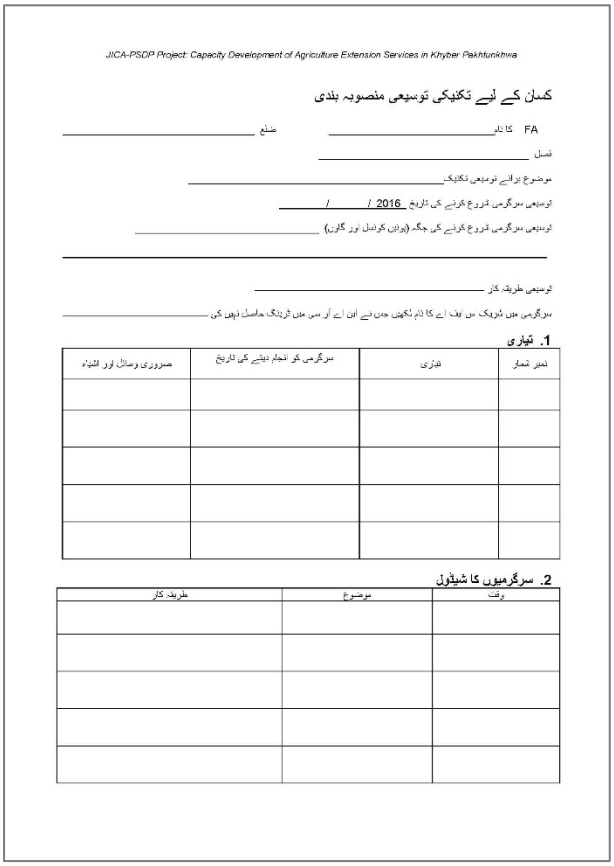
9-1. Before the commencement of Session-2, please list up the necessary information to be obtained during Session-2 in order to solve the identified problem and to give proper suggestion to farmer.

9-2. Record all the information which can be considered as useful to solve the identified problem and to give proper suggestion to farmer.

9-3. Final recommendation to the farmer based on the information obtained during Session-2.

Attachment 2: Formats for FW2

1) FA FW2 Urdu Format: Planning



JICA-PSDP Project: Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa

کسان کے لیے تکنیکی توسیعی منصوبہ بندی

FA کا نام _____ ضلع _____

فصل _____

موضوع برائے توسیعی تکنیک _____

توسیعی سرگرمی شروع کرنے کی تاریخ 2016 / / _____

توسیعی سرگرمی شروع کرنے کی جگہ (یونین کونسل اور گاؤں) _____

_____

توسیعی طریقہ کار _____

سرگرمی میں شریک ہر ایف اے کا نام لکھیں جن نے این اے آر سی میں ٹریننگ حاصل نہیں کی _____

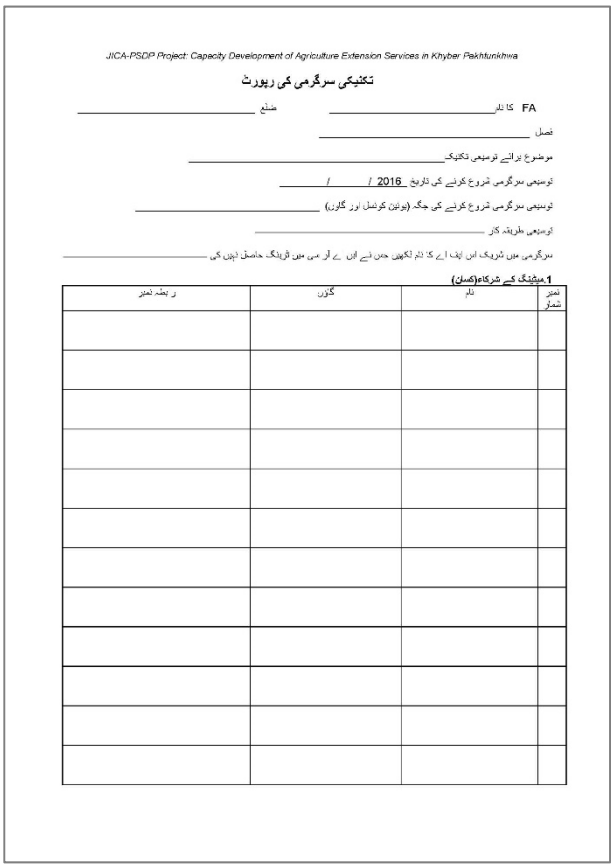
1. تیاری

نمبر شمار	تیاری	سرگرمی کو انجام دینے کی تاریخ	ضروری وسائل اور اشیاء

2. سرگرمیوں کا شیڈول

وقت	موضوع	طریقہ کار

2) FA FW2 Urdu Format: Reporting



JICA-PSDP Project: Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa

تکنیکی سرگرمی کی رپورٹ

FA کا نام _____ ضلع _____

فصل _____

موضوع برائے توسیعی تکنیک _____

توسیعی سرگرمی شروع کرنے کی تاریخ 2016 / / _____

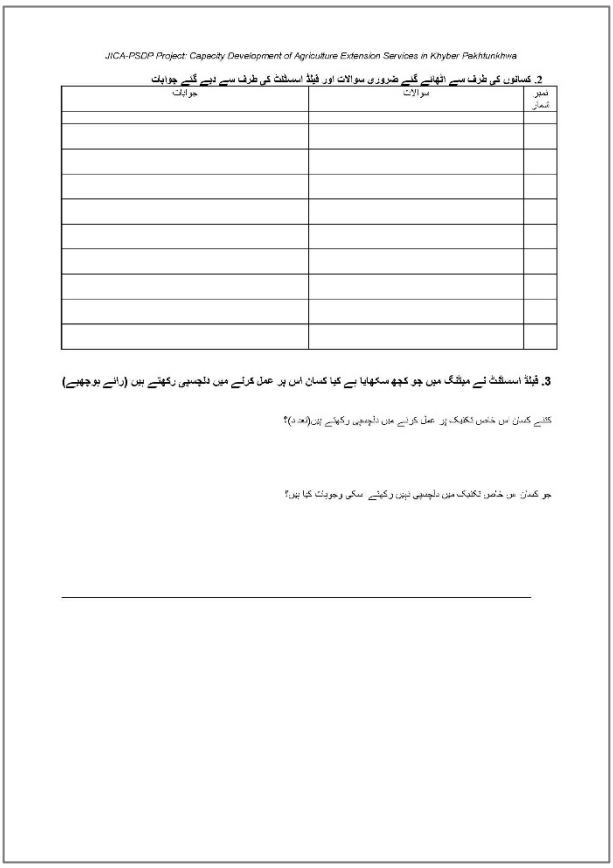
توسیعی سرگرمی شروع کرنے کی جگہ (یونین کونسل اور گاؤں) _____

توسیعی طریقہ کار _____

سرگرمی میں شریک ہر ایف اے کا نام لکھیں جن نے این اے آر سی میں ٹریننگ حاصل نہیں کی _____

1.میٹنگ کے شرکاء(کسان)

نمبر شمار	نام	گاؤں	ر بطہ نمبر



JICA-PSDP Project: Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa

2. کسانوں کی طرف سے اٹھائے گئے ضروری سوالات اور فیلڈ اسسٹنٹ کی طرف سے دیے گئے جوابات

نمبر شمار	سوالات	جوابات

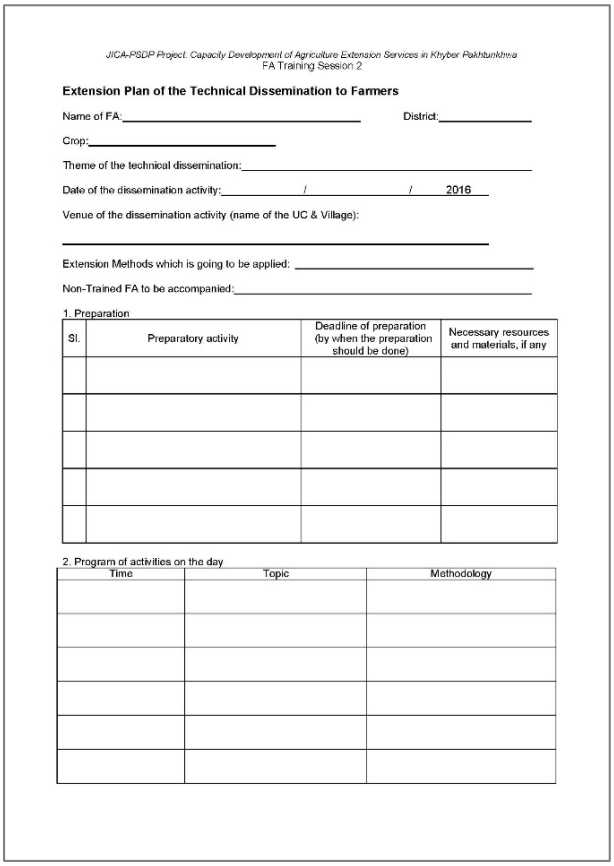
3. فیلڈ اسسٹنٹ نے میٹنگ میں جو کچھ سکھایا ہے کیا کسان اس پر عمل کرنے میں دلچسپی رکھتے ہیں (رائے پوچھیے)

کتنے کسان اس خاص تکنیک پر عمل کرنے میں دلچسپی رکھتے ہیں(تعداد)؟

جو کسان اس خاص تکنیک میں دلچسپی نہیں رکھتے سکی وجوہات کیا ہیں؟

_____

3) FA FW2 English Format: Planning



JICA-PSDP Project: Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa
FA Training Session 2

Extension Plan of the Technical Dissemination to Farmers

Name of FA:_____ District:_____

Crop:_____

Theme of the technical dissemination:_____

Date of the dissemination activity:_____/_____/ 2016

Venue of the dissemination activity (name of the UC & Village):

_____

Extension Methods which is going to be applied: _____

Non-Trained FA to be accompanied:_____

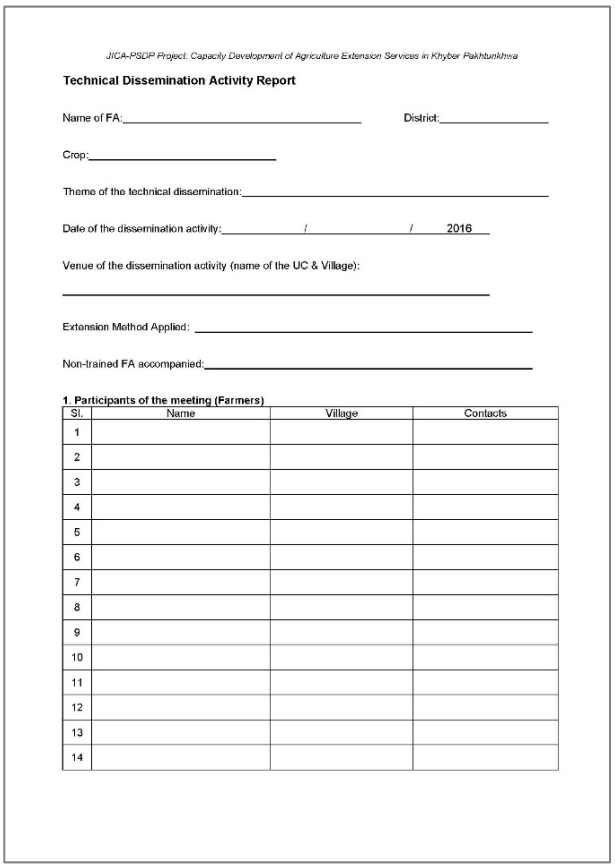
1. Preparation

Sl.	Preparatory activity	Deadline of preparation (by when the preparation should be done)	Necessary resources and materials, if any

2. Program of activities on the day

Time	Topic	Methodology

4) FA FW2 English Format: Reporting



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Technical Dissemination Activity Report

Name of FA:_____ District:_____

Crop:_____

Theme of the technical dissemination:_____

Date of the dissemination activity:_____/_____/ 2016

Venue of the dissemination activity (name of the UC & Village):

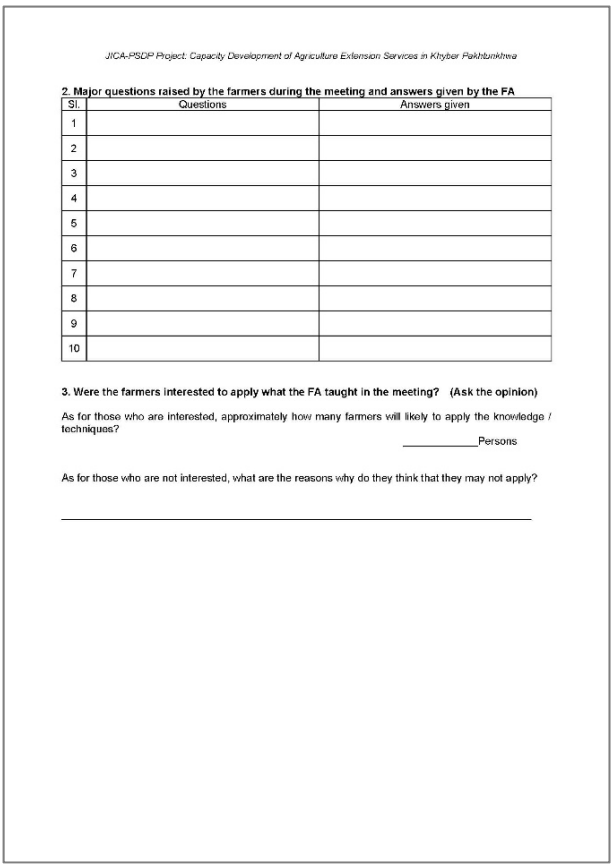
_____

Extension Method Applied: _____

Non-trained FA accompanied:_____

1. Participants of the meeting (Farmers)

Sl.	Name	Village	Contacts
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			



JICA-PSDP Project: Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa

2. Major questions raised by the farmers during the meeting and answers given by the FA

Sl.	Questions	Answers given
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

3. Were the farmers interested to apply what the FA taught in the meeting? (Ask the opinion)

As for those who are interested, approximately how many farmers will likely to apply the knowledge / techniques?

_____Persons

As for those who are not interested, what are the reasons why do they think that they may not apply?

_____

5) M&E Officer FW2 Observation Report

JICA-PSDP Project: Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa

Observation Report on FA's Field Work 2

Name of M&E Officer	
Date of Monitoring	
Name of FA	
Location	District Village
Name of AO in Charge with FA	

1. Plan and Actual

1) Plan for FW2

Name of Crop	
Contents of Extension Activity	
Method of Extension Activity	
Reason for the necessity of the activity	
Use of Supporting Materials	Yes or No: If yes, what are the materials

2) Actual

i) Optional – If there were any changes on the followings, please write down.

Name of Crop	
Contents of Extension Activity	
Method of Extension Activity	
Use of Supporting Materials	Yes or No: If yes, write down the materials and take photo.
Reason of Changes	

ii) Please always fill in the followings after the FW2

Targeted Farmer(s); include number	a) Who were the farmers? b) How did FA select the farmers for FW2? c) Number of farmers who participated:
Utilization of Other Occasion (e.g., combined with wedding ceremony, combined with District FFS activity, etc)	
AO Attendance for the Day	
Reason for the absence of AO	

JICA-PSDP Project: Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa

2. Observation:

(1) Execution of the Extension Plan Including Time Management

(2) Actual Information/ Message/ Technology which FA told the Farmers
Please write down all detailed information.

If there were any changes from the plan (mentioned in "2. Program – Topic", please find out from the FA why he changed the message/ information.

(3) Performance of the FA

(4) Reaction of Participating Farmers

(5) Evaluation of Farmers Understanding, including whether FA checked with the farmers on their understanding level.

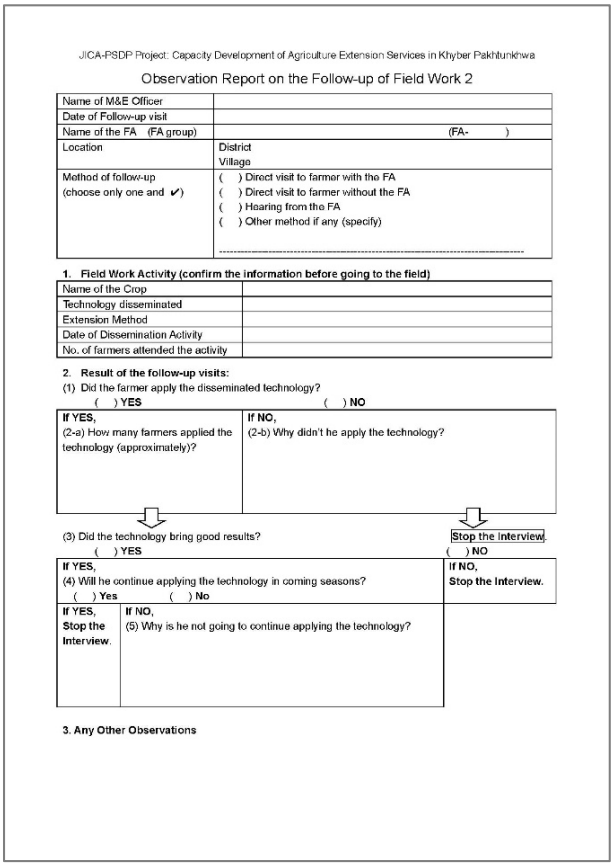
(6) Resources for the Dissemination Activities e.g., Supporting Materials, Refreshment

(7) Any Other Observations

Suggestions

Attachment 3: Monitoring of Follow-Up for FW2

M&E Follow-Up Survey Format (English)



JICA-PSDP Project: Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa

Observation Report on the Follow-up of Field Work 2

Name of M&E Officer	
Date of Follow-up visit	
Name of the FA (FA group)	(FA-)
Location	District Village
Method of follow-up (choose only one and ✔)	( ) Direct visit to farmer with the FA ( ) Direct visit to farmer without the FA ( ) Hearing from the FA ( ) Other method if any (specify) ----------

1. Field Work Activity (confirm the information before going to the field)

Name of the Crop	
Technology disseminated	
Extension Method	
Date of Dissemination Activity	
No. of farmers attended the activity	

2. Result of the follow-up visits:

(1) Did the farmer apply the disseminated technology?

( ) **YES** ( ) **NO**

If YES, (2-a) How many farmers applied the technology (approximately)?	**If NO,** (2-b) Why didn't he apply the technology?

(3) Did the technology bring good results? Stop the Interview.

( ) **YES** ( ) **NO**

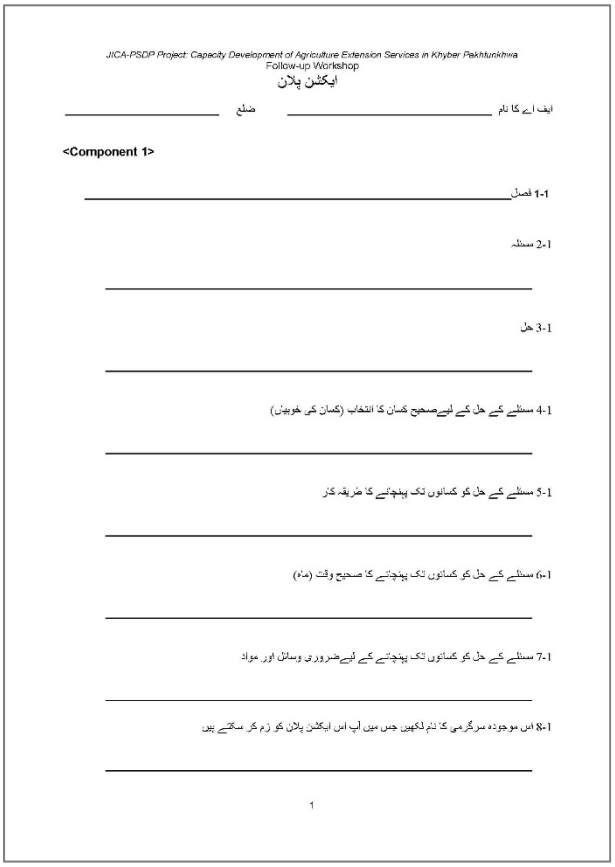
If YES, (4) Will he continue applying the technology in coming seasons? ( ) **Yes** ( ) **No**	**If NO,** **Stop the Interview.**

If YES, **Stop the Interview.**	**If NO,** (5) Why is he not going to continue applying the technology?

3. Any Other Observations

Attachment 4: Action Plan

1) FA Action Plan Preparation Format (Urdu)



JICA-PSDP Project: Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa
Follow-up Workshop
ایکشن پلان

ایف اے کا نام _____ ضلع _____

<Component 1>

1-1 فصل_____

1-2 مسئلہ

_____

1-3 حل

_____

1-4 مسئلے کے حل کے لیےصحیح کسان کا انتخاب (کسان کی خوبیاں)

_____

1-5 مسئلے کے حل کو کسانوں تک پہنچانے کا طریقہ کار

_____

1-6 مسئلے کے حل کو کسانوں تک پہنچانے کا صحیح وقت (ماہ)

_____

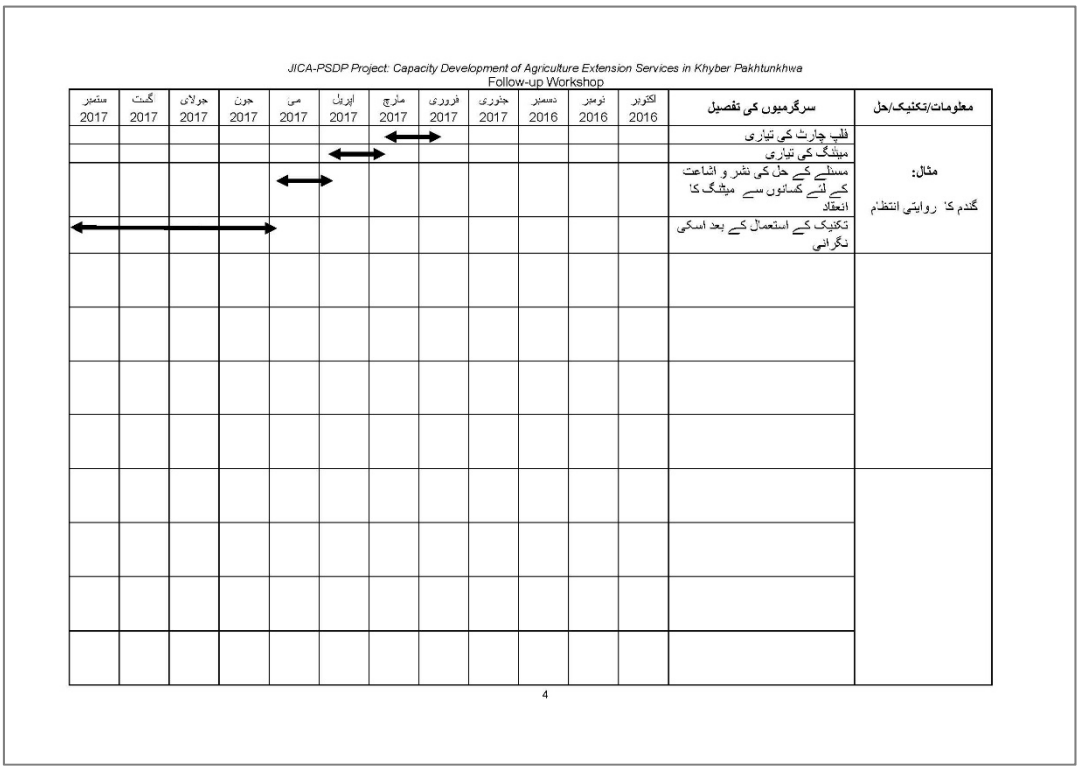
1-7 مسئلے کے حل کو کسانوں تک پہنچانے کے لیےضروری وسائل اور مواد

_____

1-8 اس موجودہ سرگرمی کا نام لکھیں جس میں آپ اس ایکشن پلان کو ضم کر سکتے ہیں

_____

1

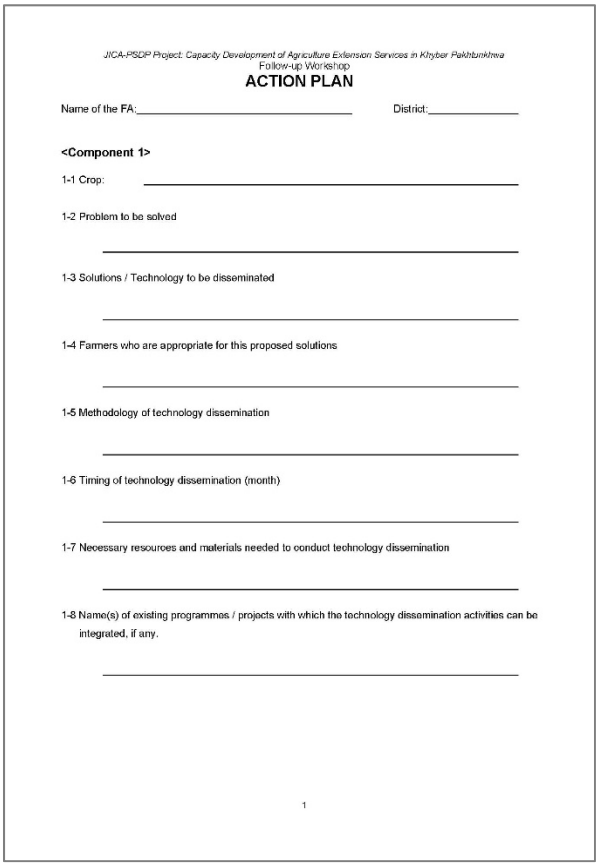


JICA-PSDP Project: Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa
Follow-up Workshop

معلومات/تکنیک/حل	سرگرمیوں کی تفصیل	اکتوبر 2016	نومبر 2016	دسمبر 2016	جنوری 2017	فروری 2017	مارچ 2017	اپریل 2017	مئی 2017	جون 2017	جولائی 2017	اگست 2017	ستمبر 2017
	فلپ چارٹ کی تیاری						←	→					
	میٹنگ کی تیاری						→	←					
مثال: گندم کا روایتی انتظام	مسئلے کے حل کی نشر و اشاعت کے لئے کسانوں سے میٹنگ کا انعقاد								←	→			
	تکنیک کے استعمال کے بعد اسکی نگرانی									←	—	—	→

4

2) FA Action Plan Preparation Format (English)



JICA-PSDP Project: Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa
Follow-up Workshop

ACTION PLAN

Name of the FA:_____ District:_____

<Component 1>

1-1 Crop: _____

1-2 Problem to be solved

_____

1-3 Solutions / Technology to be disseminated

_____

1-4 Farmers who are appropriate for this proposed solutions

_____

1-5 Methodology of technology dissemination

_____

1-6 Timing of technology dissemination (month)

_____

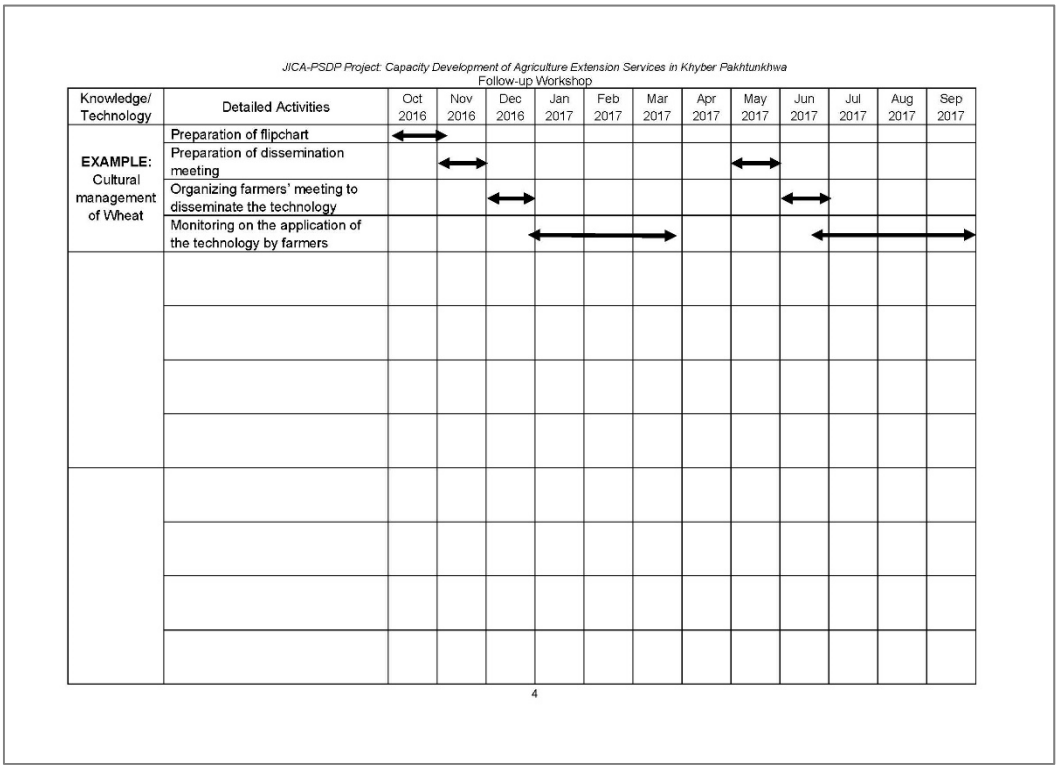
1-7 Necessary resources and materials needed to conduct technology dissemination

_____

1-8 Name(s) of existing programmes / projects with which the technology dissemination activities can be integrated, if any.

_____

1



JICA-PSDP Project: Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa
Follow-up Workshop

Knowledge/ Technology	Detailed Activities	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Sep 2017
EXAMPLE: Cultural management of Wheat	Preparation of flipchart	←	→										
	Preparation of dissemination meeting		←	→					←	→			
	Organizing farmers' meeting to disseminate the technology			←	→					←	→		
	Monitoring on the application of the technology by farmers				←	—	→			←	—	—	→

4

3) M&E Officer Action Plan Observation Repor

JICA-PSDP Project: Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa

Observation Report on FA's Action Plan Activities

Name of M&E Officer	
Date of Monitoring	
Name of FA	
Location	District Village
Name of AO in Charge with FA	

1. Action Plan

Name of Crop	
Contents of Extension Activity	
Method of Extension Activity	
Use of Supporting Materials	Yes or No: If yes, write down the materials and take photo.
Targeted Farmer(s); include number	a) Who were the farmers? b) How did FA select the farmers for the activity? c) Number of farmers who participated:
Utilization of Other Occasion (e.g., combined with wedding ceremony, combined with District FFS activity, etc)	
AO Attendance for the Day	

2. Observation:

(1) Execution of the Extension Plan Including Time Management

(2) Actual Information/ Message/ Technology which FA told the Farmers
Please write down all detailed information.

(3) Performance of the FA

(4) Reaction of Participating Farmers

(5) Evaluation of Farmers Understanding, including whether FA checked with the farmers on their understanding level.

JICA-PSDP Project: Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa

(6) Resources for the Dissemination Activities e.g., Supporting Materials, Refreshment

(7) Any Other Observations

Suggestions

Appendix 6-6: Other Activities

Result of Field Works in FA Training

Findings and Results of Field Work 1, Field Work 2, and Action Plan by FA Group 1-10

Table of Contents

1. General Information about the Results of Field Work 1 (FW1), Field Work 2 (FW2) and Action Plan Activities by FA Group 1-10

FW1: Case Study (Number of cases carried out by FAs)

Division	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	Total
(Number of FA)	(39 FAs)	(55 FAs)	(44 FAs)	(44 FAs)	(14 FAs)	(16 FAs)	(38 FAs)	(250 FAs)
FW1	126	156	88	88	28	32	76	594

FW2: Dissemination Activity (Number of cases carried out by FAs)

Division	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	Total
(Number of FA)	(39 FAs)	(55 FAs)	(44 FAs)	(44 FAs)	(14 FAs)	(16 FAs)	(38 FAs)	(250 FAs)
FW2	75	110	88	88	28	32	76	497
Number of Farmers Participated in FW2								
FA1	345	438	0	0	0	0	0	783
FA2	244	317	0	0	0	0	0	561
FA3	88	168	71	0	0	0	0	327
FA4	89	296	90	0	0	0	0	475
FA5	0	104	181	103	0	0	0	388
FA6	0	86	134	134	0	0	0	354
FA7	0	0	0	88	85	41	85	299
FA8	0	0	0	103	97	60	55	315
FA9	0	11	0	41	64	24	176	316
FA10	0	31	20	0	38	19	96	204
Total	766	1,451	496	469	284	144	412	4,022
Farmers/Activity	10.2	13.2	5.6	5.3	10.1	4.5	5.4	8.1

AP: Action Plan (Number of cases carried out by FAs)

Division	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	Total
(Number of FA)	(39 FAs)	(55 FAs)	(44 FAs)	(44 FAs)	(14 FAs)	(16 FAs)	(38 FAs)	(250 FAs)
Action Plan	70	123	49	22	0	0	0	264
Number of Farmers Participated in Action Plan								
Total	574	860	307	59	0	0	0	1,800
Farmers/Activity	8.2	7.0	6.3	2.7				6.8

FW2 + Action Plan (Number of cases carried out by FAs)

Division	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	Total
(Number of FA)	(39 FAs)	(55 FAs)	(44 FAs)	(44 FAs)	(14 FAs)	(16 FAs)	(38 FAs)	(250 FAs)
Number of Activity								
FW2	75	110	88	88	28	32	76	497
Action Plan	70	123	49	22	0	0	0	264
Total	145	233	137	110	28	32	76	761
Number of Participated Farmers								
FW2	766	1,451	496	469	284	144	412	4,022
Action Plan	574	860	307	59	0	0	0	1,800
Total	1,340	2,311	803	528	284	144	412	5,822
Farmers/Activity	9.2	9.9	5.9	4.8	10.1	4.5	5.4	7.7

2. Findings and Results of FW1 and FW2 by FA Group 1-10

1) Findings: Characteristics of Crops and Themes for Field Works

a. There was little difference in the target crops between the FW1 and FW2. Division-wise analysis of the target crops indicated that **cereals such as wheat and maize were common in Hazara**, and **vegetables such as tomato and onion are popular in Malakand**. **Mardan was characterized with higher portion of industrial crops (sugarcane and tobacco)**. On the other hand, **cereals were dominant with low percentage of fruit trees in Peshawar.** In **Kohat, chick pea, garlic, okra and guava** were common, which was not listed as crop legend, and cereals were less. In addition, **Bannu was also cereal-dominant division, with higher portion of wheat**. Finally, f**ruit trees were less and sugarcane was common in D.I. Khan**.

b. Regarding the target theme of the FW, **diseases, insects and weed were predominately major in FW1**, while **cultivation methods were remarkable in FW2**. This shift might be reflecting that the **FAs tried to deal with farmers' problems through improvement of cultivation methods which includes preventive measures, rather than insects/diseases symptomatic treatment.**

c. Major crop diseases were "blight", "rust", "smut", and "downy mildew". Especially, **downy mildew was very common in Malakand Division as vegetables are dominant crops in the area**. Those areas where vegetables are major crops, such as **Hazara, Kohat, and D.I. Khan Divisions, blight** was popular, while in cereal crop dominant areas, such as **Mardan, Peshawar, and Bannu Divisions, rust** was observed commonly.

d. Major insects were **"fruit fly"and stem borer"**, and especially **fruit fly was very common in Malakand, Kohat, and Bannu Divisions**. On the other hand, **stem borer was dominant in Hazara, Mardan, and Bannu.**

2) Data: Numerous Wise (per Division, Number of cases carried out by FAs)

a) Basic Information

Division (Number of FA)	Hazara (39 FAs)	Malakand (55 FAs)	Mardan (44 FAs)	Peshawar (44 FAs)	Kohat (14 FAs)	Bannu (16 FAs)	D.I.Khan (38 FAs)	Total (250 FAs)
FW1	126	156	88	88	28	32	76	594
FW2	75	110	88	88	28	32	76	497
Total	201	266	176	176	56	64	152	1,091

b) Target Crops

Target Crops	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	Total
Wheat	64	58	59	57	10	35	54	337
Maize	50	33	52	30	3	6	3	177
Tomato	24	47	16	21	9	0	9	126
Potato	18	9	2	4	0	0	0	33
Onion	9	32	3	4	3	0	4	55
Apple	1	2	0	0	0	0	0	3
Peach	1	17	2	1	2	0	0	23
Citrus	5	9	4	1	0	0	0	19
Sugarcane	0	3	13	6	0	0	21	43
Tobacco	0	3	5	0	0	0	0	8
Others	29	53	20	52	29	23	61	267
Total	201	266	176	176	56	64	152	1,091

c) Target Themes

Target Themes	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	Total
Disease	73	100	58	54	24	29	40	378
Insect Pest	27	71	72	68	16	18	74	346
Animal Pest	17	4	2	2	7	0	0	32
Weed	29	34	25	26	3	17	34	168
Yield	14	7	0	5	2	0	1	29
Cultivation	23	35	17	16	4	0	3	98
Input	8	6	0	0	0	0	0	14
Others	10	9	2	5	0	0	0	26
Total	201	266	176	176	56	64	152	1,091

d) Kind of Diseases

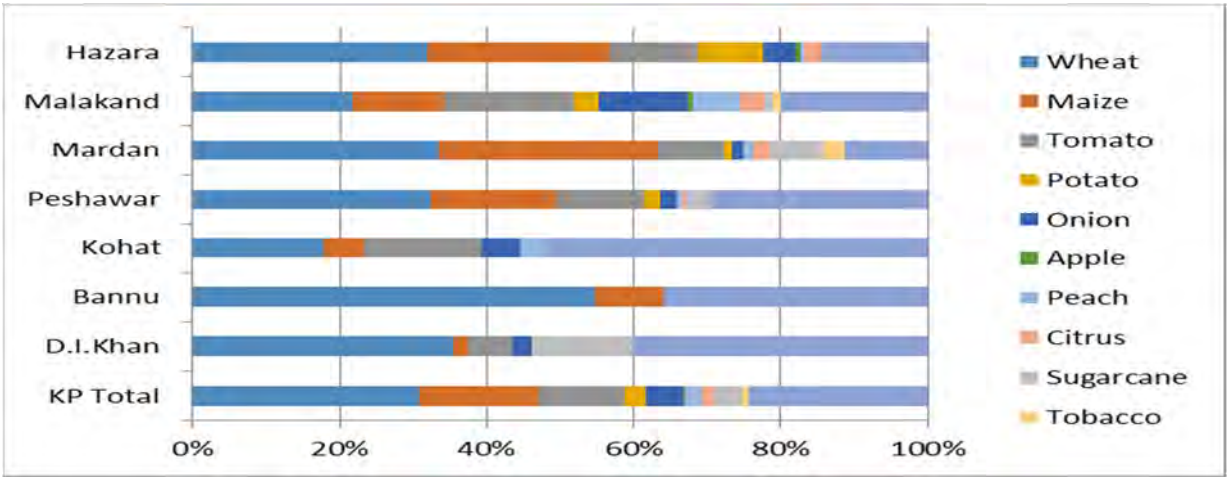
Kind of Diseases	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	Total
Blight	27	16	10	10	8	4	17	92
Rust	8	19	33	28	0	16	14	118
Smut	17	8	5	0	0	2	1	33
Downy mildew	2	20	1	5	0	0	0	28
Karnal bunt	4	1	0	0	0	0	0	5
Purple Blotch	2	1	0	0	0	0	1	4
Damping off	0	4	1	0	0	0	0	5
Gummosis	2	1	0	2	0	0	0	5
Others	10	31	8	9	16	7	7	88
Total	72	101	58	54	24	29	40	378

e) Kind of Insects

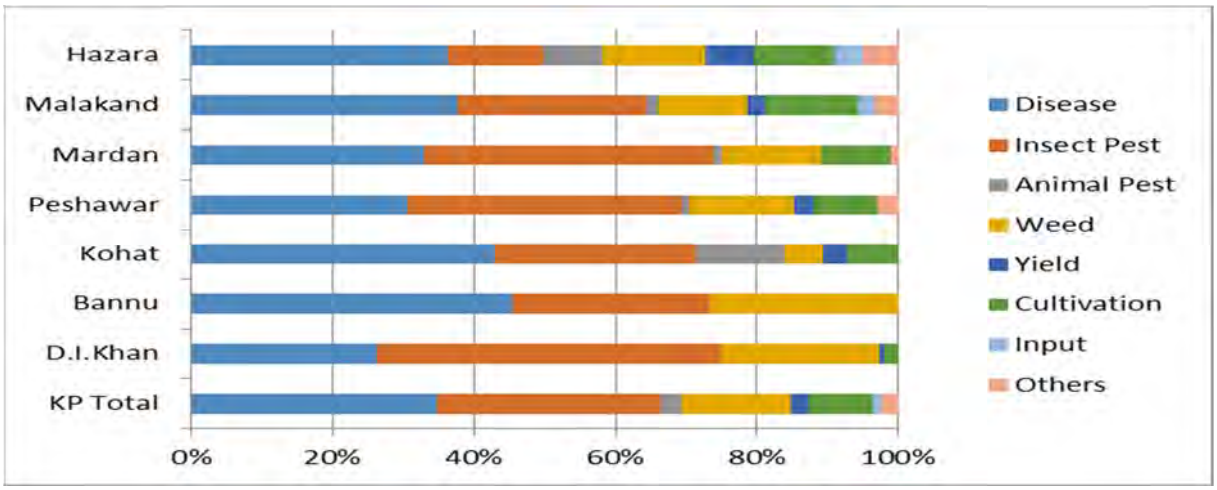
Kind of Insect	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	Total
Fruit fly	3	32	9	19	10	9	10	92
Stem borer	12	10	28	13	2	6	19	90
Army worm	1	1	0	0	0	0	1	3
Cut worm	2	0	4	0	0	0	0	6
Aphids	1	7	3	1	0	0	0	12
Thrips	3	1	0	2	0	0	1	7
Termite	1	7	11	3	0	3	11	36
Nematode	0	3	0	0	0	0	0	3
Others	5	9	17	30	4	0	32	97
Total	28	70	72	68	16	18	74	346

3) Data: Figure Wise (per Division)

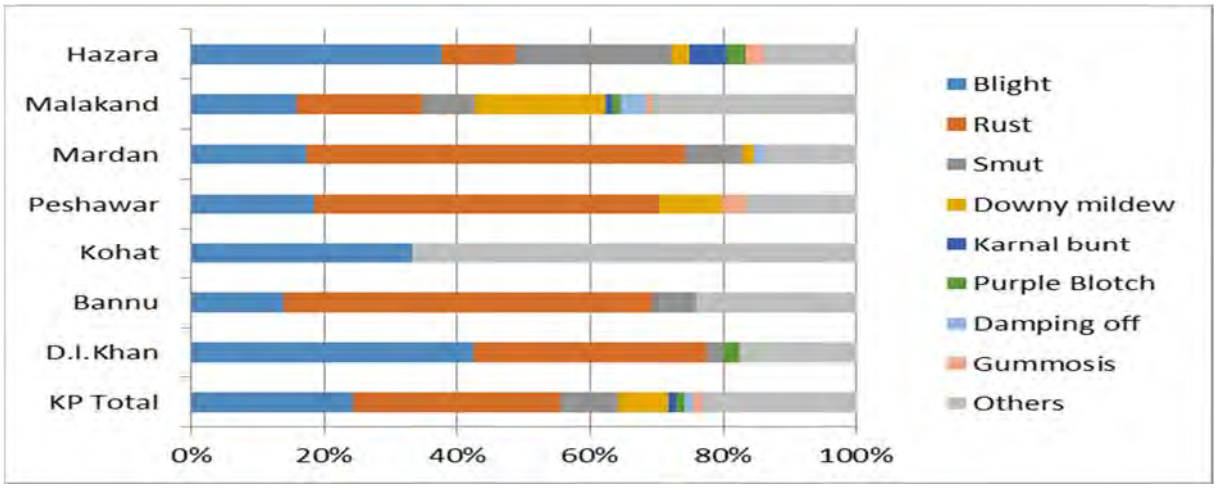
a) Target Crops



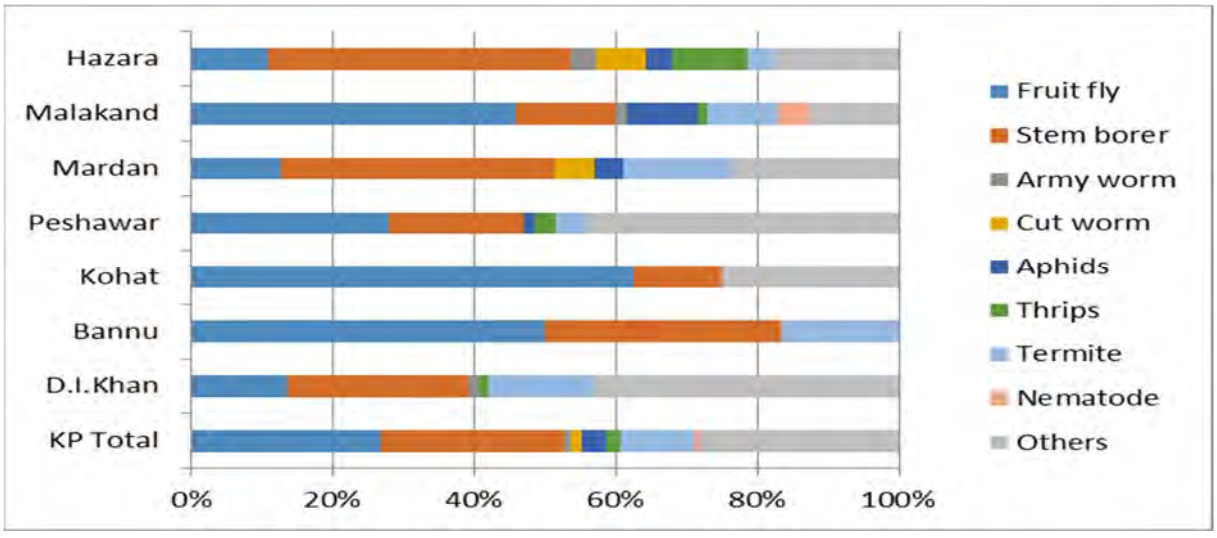
b) Target Themes



c) Kind of Diseases



d) Kind of Insects



3. Findings and Results of FW1 by FA Group 1-10

1) Findings: Technical Features

a. Land preparation

Since most farmers were utilizing tractor for land preparation with exceptional case to utilize animal power, the kind of attachment to the tractor was asked. Farmers were utilizing cultivator, rotary cultivator and harrow disc according to the kind of crop.

b. Seed Preparation

- **Seed Source**

As for wheat seeds, many farmers obtained them from the department of agriculture and some farmers obtained from the previous crop. As for chickpea, most farmers obtained seeds from their previous crop. For all the other crops, most farmers obtained seeds from the market.

- **Seed Selection**

Many farmers were utilizing certified seeds for most cereal, vegetable and fruit crops. At the same time, many farmers were not satisfied with such certified seeds.

- **Seed Treatment**

Most farmers in southern districts were sowing seeds without treatment for most crops. Some farmers in northern districts were utilizing treated seeds or sowing seeds with treatment especially for maize and vegetable crops.

c. Planting

In most cases, direct sowing method was applied for cereal crops such as wheat and maize, and transplanting method was applied for vegetable and fruit crops. The average sowing rate for wheat was 6.25 kg/kanal.

d. Fertilization

Although the application rate of fertilizer varied from one farmer to another, 6.25 kg of DAP and 6.25 kg of Urea per kanal seemed to be a standard rate for wheat crop. Proper guidance for the appropriate fertilization was needed for many farmers.

e. Weeding

As for weeding, farmers had tendency to spray chemicals for cereal crops, and to control by hand for vegetable and fruit crops. It might be related to the size of field for different crops.

f. Source of Irrigation Water

Cereal crops were mainly cultivated under rainfed or canal irrigation area. Chickpeas were cultivated under rainfed condition in most cases. Vegetables and fruit crops were mainly cultivated under canal or well irrigation area.

g. Pest/Disease Control

Most cereal farmers were not applying any control measures and only some farmers applied chemicals for cereal crops. On the contrary, most farmers were spraying chemicals for pest/disease control of vegetable and fruit crops.

h. Harvesting

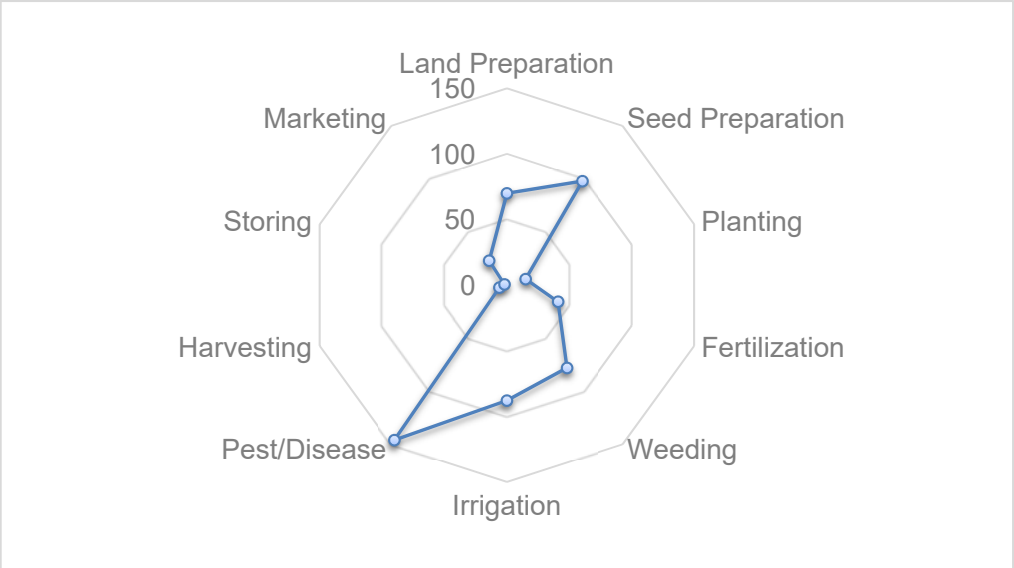
Most farmers were harvesting all the crops by hand with some exceptional cases of harvesting with machineries for cereal crops especially for rice.

i. Storing/Marketing

In most cases, farmers were storing their wheat and maize products for their own consumption. On the contrary, vegetable and fruit crops were mainly transported to the local market or directly sold in the fields.

2) Findings: Possible Causes for the Identified Problem

Possible causes of the identified problems pointed out by farmers are shown in the Figure below. Pest/Diseases and Seed Preparation were the major problems followed by irrigation, weeding and land preparation.



3) Findings: Measures taken by the Farmers to address the Problem and the Effects

Since the major problems were “Pest and Diseases”, measure taken by farmers were mainly “Spray Chemicals”. The effect of such measures was evaluated as “none” or “to some extent”.

4) Findings: Information which were filled by FA during Session 2

a. Necessary Knowledge to be obtained

Information required by FAs before Session-2 were mainly pest and disease control measures, weed control measures and cultivation technic for specific crop.

b. Useful Knowledge obtained

Useful knowledges obtained by FAs during Session-2 were (i) Proper land preparation and sowing including deep ploughing and line sowing, (ii) Utilization of proper chemicals at proper time with proper dosage, (iii) Utilization of proper seeds (healthy seed and resistant variety) along with proper seed treatment, and (iv) Crop rotation.

c. Recommendation for Farmers

Recommendations for farmers made by FAs included (i) Application of crop rotation, (ii) Deep ploughing and line sowing, (iii) Use of proper seeds (certified seed and resistant variety), (iv) Application of seed treatment, (v) Use of proper chemicals at proper time with proper dosage, and (vi) Application of biological control such as pheromone trap.

5) Data: Numerous Wise (per Division)

(Number of cases carried out by FAs)

Division (Number of FA)	Hazara (39 FAs)	Malakand (55 FAs)	Mardan (44 FAs)	Peshawar (44 FAs)	Kohat (14 FAs)	Bannu (16 FAs)	D.I.Khan (38 FAs)	Total (250 FAs)
Number of FW1	126	156	88	88	28	32	76	594

Target Crops	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	Total
Wheat	41	38	34	26	5	17	28	189
Maize	36	16	24	17	2	3	2	100
Tomato	17	29	7	13	5	0	5	76
Potato	13	4	1	4	0	0	0	22
Onion	6	18	1	1	1	0	1	28
Apple	1	1	0	0	0	0	0	2
Peach	0	10	1	0	1	0	0	12
Citrus	4	4	1	1	0	0	0	10
Sugarcane	0	2	7	0	0	0	10	19
Tobacco	0	3	4	0	0	0	0	7
Others	8	31	8	26	14	12	30	129
Total	126	156	88	88	28	32	76	594

Target Themes	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	Total
Disease	59	69	41	33	13	17	24	256
Insect Pest	17	37	40	31	8	10	36	179
Animal Pest	4	2	2	2	4	0	0	14
Weed	17	19	4	9	1	5	16	71
Yield	12	5	0	5	2	0	0	24
Cultivation	4	15	0	4	0	0	0	23
Input	8	6	0	0	0	0	0	14
Others	5	3	1	4	0	0	0	13
Total	126	156	88	88	28	32	76	594

4. Findings and Results of FW2 by FA Group 1-10

1) Findings: Characteristics of Extension Methods for Field Work 2

a. **Extension Methods: Group meeting was very common extension method** in general, but **individual visit was dominant in Mardan, Peshawar, and Bannu Divisions**.

b. **Extension Supporting Materials: Posters and brochures** were remarkably utilized during the activities. Especially, nearly **90% of FAs used such materials in Bannu and D.I. Khan Divisions**. T**ools such as pruning kits and sprayer, and agricultural inputs such as fertilizers and agriculture chemicals, were frequently used in Hazara and Kohat Divisions.**

c. **Use of Extension Supporting Materials:** Those FAs from FA Group 3 and onward were trained on how to prepare extension materials by themselves in Session 2 of the training. It was found out that those FAs who leant how to prepare the materials, conducted more activities with utilization of such materials, compared to the FAs from FA Group 1 and Group2 who were not trained on that topic.

d. **AO Attendance to FW2:** AO attendance to the extension activities conducted by FAs was around 18%.

e. **No. of Farmers participating FW2 per Activity:** The number of the participants to the group meetings varied from **2 to 20**. In total, **4,022 farmers participated in 497 dissemination activities**, and this implies that around **8 farmers on average participated in one activity.**

2) Data Tables: (Distribution by Divisions, Number of cases carried out by FAs)

a) Basic Information

Division (Number of FA)	Hazara (39 FAs)	Malakand (55 FAs)	Mardan (44 FAs)	Peshawar (44 FAs)	Kohat (14 FAs)	Bannu (16 FAs)	D.I.Khan (38 FAs)	Total (250 FAs)
Number of FW2	75	110	88	88	28	32	76	497

b) Target Crops

Target Crops	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	Total
Wheat	23	20	25	31	5	18	26	148
Maize	14	17	28	13	1	3	1	77
Tomato	7	18	9	8	4	0	4	50
Potato	5	5	1	0	0	0	0	11
Onion	3	14	2	3	2	0	3	27
Apple	0	1	0	0	0	0	0	1
Peach	1	7	1	1	1	0	0	11
Citrus	1	5	3	0	0	0	0	9
Sugarcane	0	1	6	6	0	0	11	24
Tobacco	0	0	1	0	0	0	0	1
Others	21	22	12	26	15	11	31	138
Total	75	110	88	88	28	32	76	497

c) Target Themes

Target Themes	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	Total
Disease	14	31	17	21	11	12	16	122
Insect Pest	10	34	32	37	8	8	38	167
Animal Pest	13	2	0	0	3	0	0	18
Weed	12	15	21	17	2	12	18	97
Yield	2	2	0	0	0	0	1	5
Cultivation	19	20	17	12	4	0	3	75
Input	0	0	0	0	0	0	0	0
Others	5	6	1	1	0	0	0	13
Total	75	110	88	88	28	32	76	497

d) Extension Methods

Extension Method	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	Total
Individual Visit	4	6	29	39	3	12	12	105
Group Meeting	52	77	55	44	22	20	64	334
Field Visit	0	5	2	3	0	0	0	10
Field Day	13	7	0	0	0	0	0	20
FFS	1	3	0	0	0	0	0	4
Training	0	7	2	2	0	0	0	11
Others	5	5	0	0	3	0	0	13
Total	75	110	88	88	28	32	76	497

e) Materials Used

Materials used	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	Total
Written material	35	65	24	47	16	28	66	281
Tools and material	17	20	13	7	9	0	10	76
No material	23	25	51	34	3	4	0	140
Total	75	110	88	88	28	32	76	497

f) AO Attendance

AO attendance	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	Total
Yes	14	29	5	13	18	1	11	91
No	61	81	83	75	10	31	65	406
Total	75	110	88	88	28	32	76	497

g) No. of Farmers who Participated per Activities

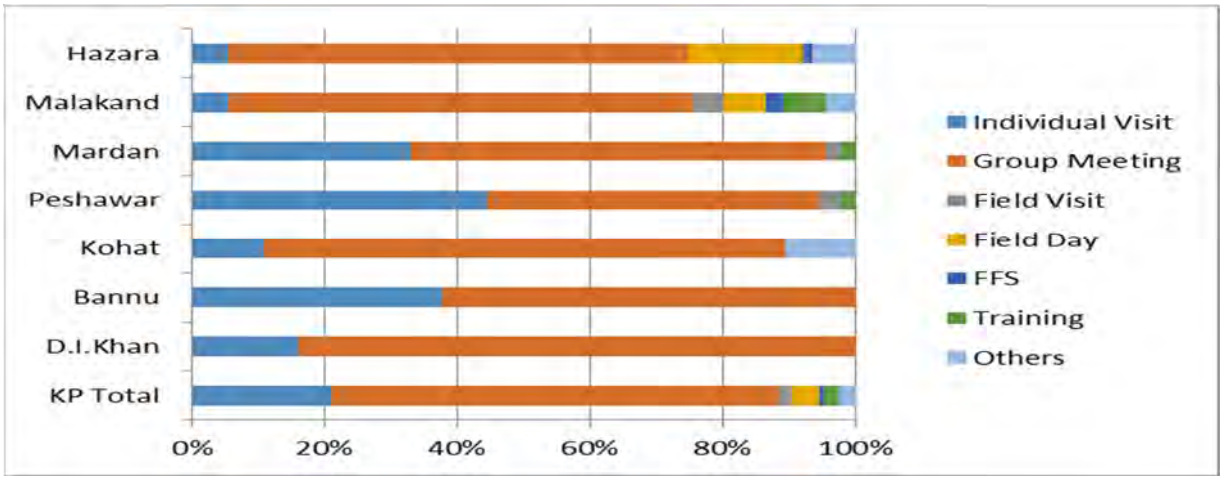
No. of Farmers	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	Total
1	4	6	30	40	0	12	11	103
2-20	60	86	57	47	25	20	65	360
21-50	3	9	1	1	0	0	0	14
50-	0	3	0	0	0	0	0	3
Unknown	8	6	0	0	3	0	0	17
Total	75	110	88	88	28	32	76	497

h) Total Number of Farmers who Participated in FW2

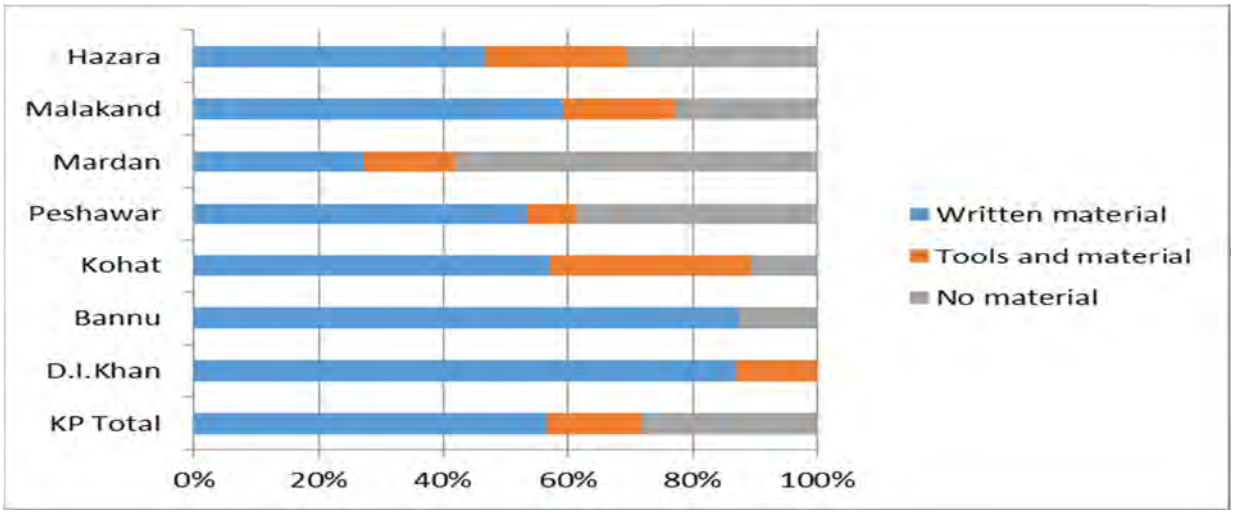
No. of Farmers	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	Total
Total	766	1,451	496	469	284	144	412	4,022
Average Number of Participated Farmers/Activity								8.1

3) Data Figures (Distribution by Divisions, Percentage representation)

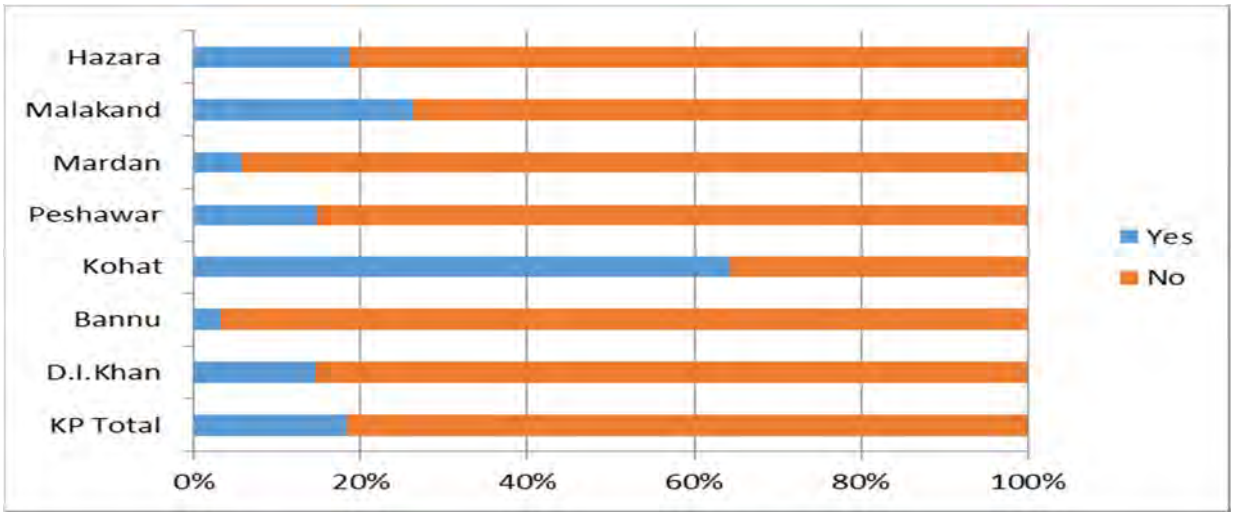
a) Extension Methods



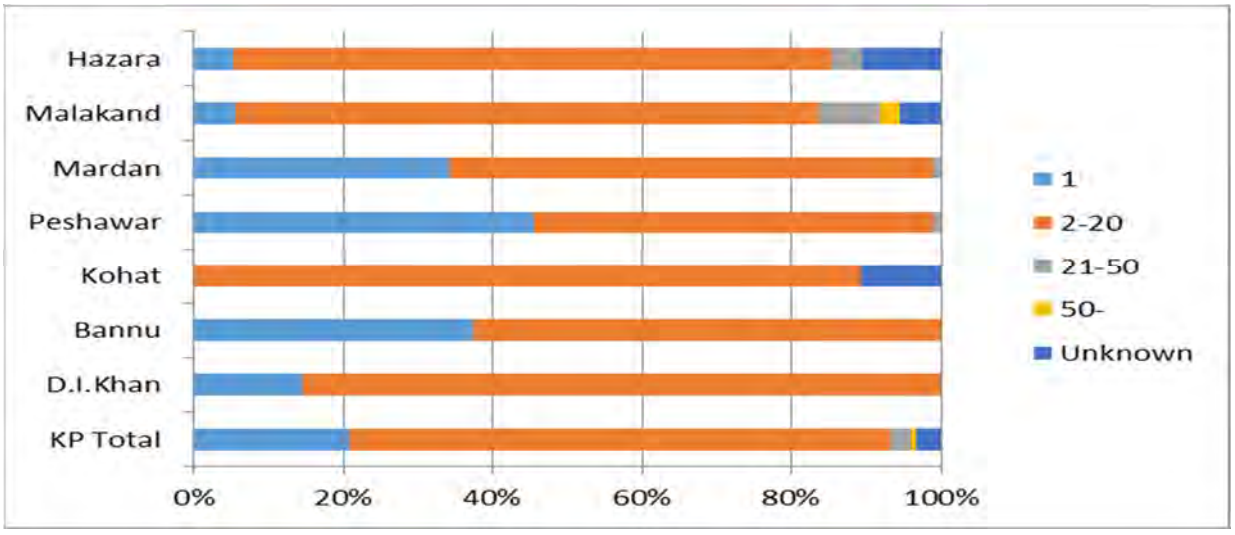
b) Materials Used



c) AO Attendance



d) Number of Participated Farmers per activity



5. Findings and Results of Action Plan Activities by Group 1-6

1) Findings: Comparison between Result of Action Plan Activities and FW1/ FW2

a. **Target Crops:** There were basically no differences from FW1 or FW2.

b. **Target Themes:** There were clear **shift in themes, from "insects/disease" to "cultivation methods"**. It could be analyzed that FAs tried to **disseminate more preventive measures** such as cultivation methods to the farmers in the action plan activities, instead of suggesting symptomatic treatments by applying agriculture chemicals. This could be understood as one of the important impact of the training which aimed for "capacity development of extension workers"..

c. **Extension Methods: "Group meeting"** was common extension method in general, but more number of individual visit or field visit was conducted in the action plan activities compared to FW2.

d. **Extension Supporting Materials:** Less number of FAs used extension supporting materials compared to FW2. The reason could be that the majority of those FAs who conducted action plan activities were from FA Group 1 and Group2, which the session on how to prepare extension materials by themselves were not yet being conducted. Those FAs who participated in the later training courses understood the effectiveness of utilizing extension materials, and accordingly, they would use more extension materials in their action plan activities.

e. **AO Attendance:** AO attendance to the extension activities conducted by FAs was around 18% which was similar to FW2.

f. **No. of Farmers participating per Activity:** The number of the participants to the group meetings varied from **2 to 20, which was similar to FW2**. In total, **1,800 farmers participated in 264 action plan activities**, and this implies that around **7 farmers on average participated in one activity**.

2) Data Tables: (Distribution by Divisions, Number of cases carried out by FAs)

a) Basic Information

Division (Number of FA)	Hazara (39 FAs)	Malakand (55 FAs)	Mardan (44 FAs)	Peshawar (44 FAs)	Kohat (14 FAs)	Bannu (16 FAs)	D.I.Khan (38 FAs)	Total (250 FAs)
AP prepared	117	165	132	132	42	48	114	750
AP executed	70	123	49	22	0	0	0	264
Percentage	60%	75%	37%	17%	0%	0%	0%	35%

b) Target Crops

Target Crops	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	KP Total
Wheat	19	34	22	18	0	0	0	93
Maize	12	15	13	0	0	0	0	40
Tomato	10	18	5	2	0	0	0	35
Potato	4	1	0	0	0	0	0	5
Onion	0	11	0	1	0	0	0	12
Apple	0	1	0	0	0	0	0	1
Peach	1	12	0	0	0	0	0	13
Citrus	1	7	0	0	0	0	0	8
Others	23	24	9	1	0	0	0	57
Total	70	123	49	22	0	0	0	264

c) Target Themes

Target Themes	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	KP Total
Disease	11	22	11	7	0	0	0	51
Insect Pest	9	31	12	3	0	0	0	55
Animal Pest	3	0	0	0	0	0	0	3
Weed	11	28	14	10	0	0	0	63
Yield	0	0	0	0	0	0	0	0
Cultivation	30	41	12	2	0	0	0	85
Input	0	0	0	0	0	0	0	0
Others	6	1	0	0	0	0	0	7
Total	70	123	49	22	0	0	0	264

d) Extension Methods

Extension Method	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	KP Total
Individual Visit	14	26	32	4	0	0	0	76
Group Meeting	35	63	17	9	0	0	0	124
Field Visit	15	22	0	9	0	0	0	46
Field Day	2	5	0	0	0	0	0	7
Others	4	7	0	0	0	0	0	11
Total	70	123	49	22	0	0	0	264

e) Materials Used

Materials used	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	KP Total
Charts	2	4	1	0	0	0	0	7
Printed matter	5	26	3	2	0	0	0	36
Tools	23	23	6	2	0	0	0	54
No	40	69	39	17	0	0	0	165
Others	0	1	0	1	0	0	0	2
Total	70	123	49	22	0	0	0	264

f) AO Attendance

AO attendance	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	KP Total
Yes	11	21	8	3	0	0	0	43
No	59	102	41	19	0	0	0	221
Total	70	123	49	22	0	0	0	264

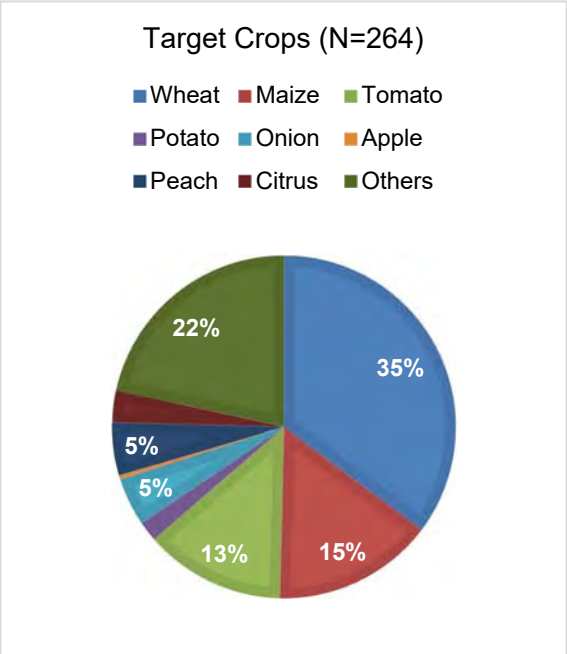
g) No. of Farmers who Participated in Action Plan Activities

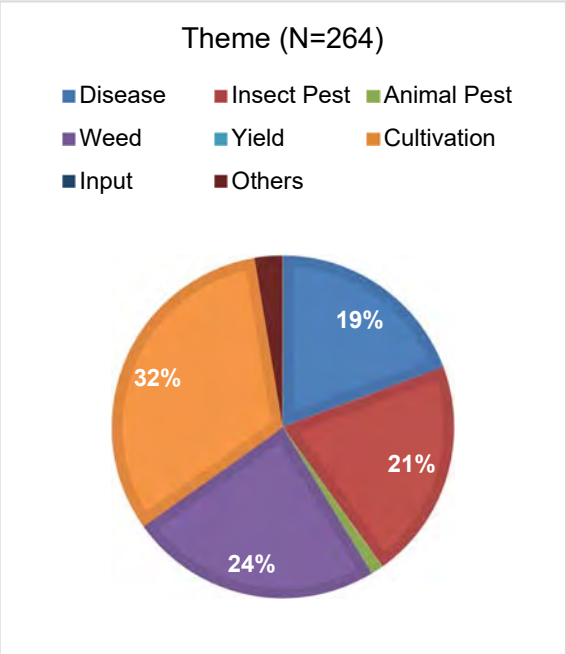
No. of Farmers	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	KP Total
1	16	38	26	9	0	0	0	89
2-20	49	78	18	13	0	0	0	158
21-50	5	4	5	0	0	0	0	14
50-	0	3	0	0	0	0	0	3
Unknown	0	0	0	0	0	0	0	0
Total	70	123	49	22	0	0	0	264

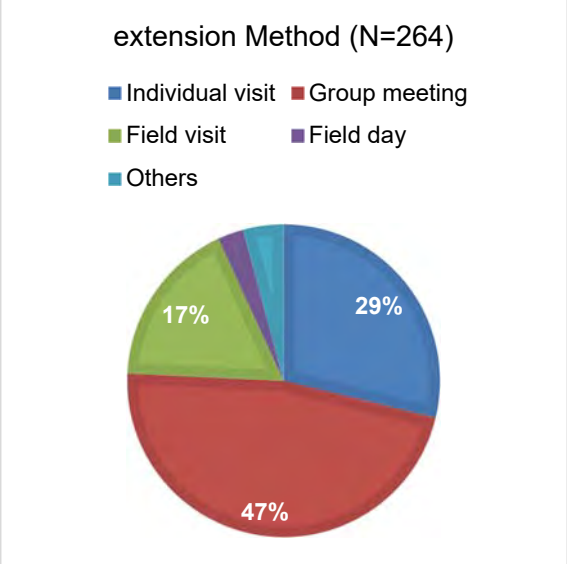
h) Total Number of Farmers who Participated in Action Plan Activities

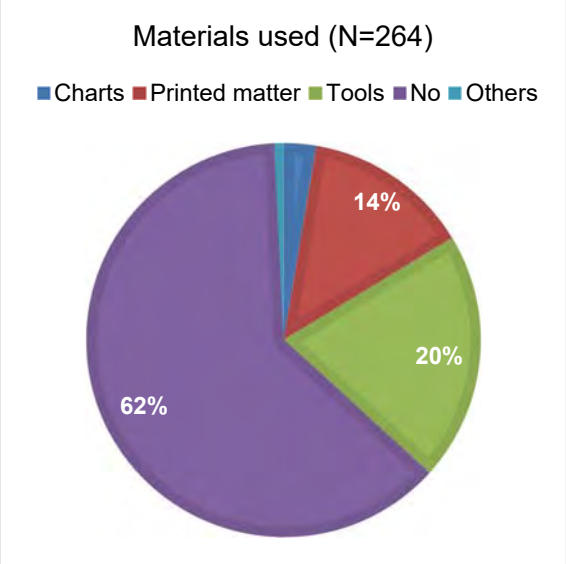
No. of Farmers	Hazara	Malakand	Mardan	Peshawar	Kohat	Bannu	D.I.Khan	KP Total
Total	574	860	307	59	0	0	0	1,800
Average Number of Participated Farmers/Activity								6.8

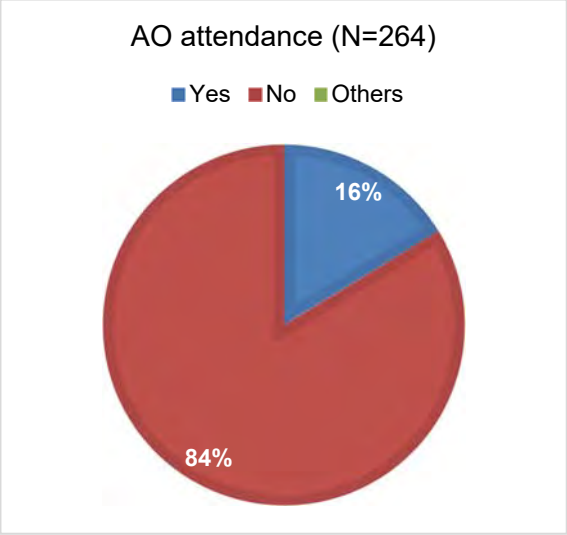
3) Data Figures (percentage representation)

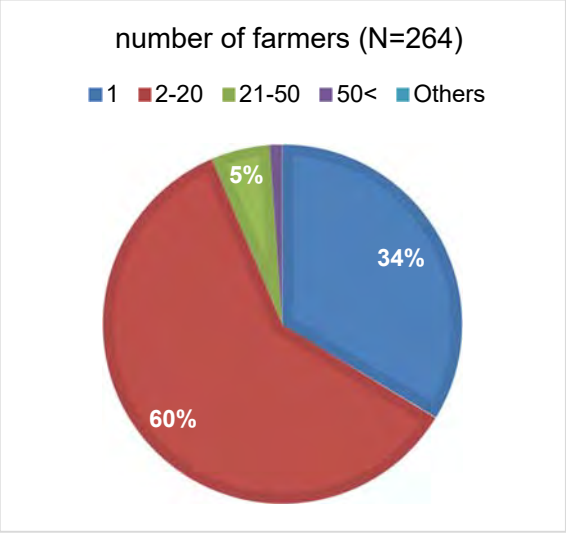












6. Findings and Results of Follow-Up of FW2

1) Findings: Follow-Up of FW2

a. **No. of Follow-Up of FW2 Conducted:** The follow-up of FW2 has so far been carried out in Hazara, Malakand, and Mardan divisions, where around a half of the number of FW2 activities conducted were being followed up.

b. **Method of Follow-Up:** Some **70% of the FAs visited the target farmers again with the M&E Officers,** and conducted face-to-face interviews with the farmers. On the other hand, the rest of 30% of FAs was interviewed by the M&E Officers on the phone.

c. **Adoption of Disseminated Knowledge/ Technologies: 90% of the farmers actually used technologies** which were disseminated by FAs through FW2, and there were only 10% of farmers who did not use the disseminated technologies. Those farmers who did not apply the knowledge/ technologies gave reasons such as "could not use the technologies as it was not in accordance with the season", "necessary materials/inputs were not available in the market", or "effectiveness of the technologies was not prominent to be introduced". Little farmer did not understand the contents of disseminated technologies themselves.

d. **Satisfaction of the Applied Knowledge/ Technologies:** 100% of those farmers who applied the disseminated knowledge/ technologies were satisfied as they got good results and expressed their willingness to continue to apply them in the future as well.

2) Data Tables (Distribution by Divisions)

(Number of cases carried out by FAs)

	Hazara		Malakand		Mardan		Total	
No. of Activity	78		108		80		266	
No. of Follow-Up	31	40%	72	67%	33	41%	136	51%
Direct visit with FA	23	74%	66	92%	2	6%	91	67%
Direct visit without FA	0	0%	3	4%	0	0%	3	2%
Hearing from FA	8	26%	3	4%	31	94%	42	31%
Technology Applied	27	87%	67	93%	29	88%	123	90%
Technology not applied	4	13%	5	7%	4	12%	13	10%
No. of applied farmer	207	73%	794	80%	107	86%	1,108	80%
Technology satisfied	27	100%	67	100%	29	100%	123	100%
Technology not satisfied	0	0%	0	0%	0	0%	0	0%
Technology to be applied	27	100%	67	100%	29	100%	123	100%
Technology not to be used	0	0%	0	0%	0	0%	0	0%

Appendix 6-7: Other Activities

List of Equipment for KP Province Model Farm Service Centre

Equipment for KP Province Model Farm Service Centre

No.	Name of Equipment	Purpose of Use	Required Accessories	Q'ty	Manufucturer, Model and Specification
1	Multimedia Projector	Will be used for lecture for trainees	Carry Case, Power Cable, Connecting Cables, etc.	25	Manufacturer: Sony Model: DX-102 Specification: Brightness: 2300 lumens Resolution: 1024 x 768 (XGA) HDMI in 1.2X Zoom Lens 10W built in speaker
2	Projector Screen	Will be used for lecture for trainees	with standard accessories	25	Manufacturer:Luky Model:Tripod Specification: 8 X 6 ft Movable
3	Laptop	Will be used for lecture for trainees	With carrying case, charger etc.	24	Manufacturer: Dell Model: INSPIRON N3543 Specification:INSPIRON N3543 Intel(R) Core(TM) i3-5005U Processor (3M Cache, 2.00 GHz), 8GB, 500GB, DVD/RW, 15.6", Windows 7 Pro 64 Bit & Back Pack Carry Case,,Supported memory media: SD,with HD Webcam
4	Laptop	Will be used for lecture for trainees	With carrying case, charger etc.	1	Manufacturer:Dell Model: Dell INSPIRON N7548 Ci5-5200U Specification: INSPIRON N7548 Ci5-5200U Prosessor (3M Cache, 2.2GHz Turbo Upto 2.7GHz, 8GB,500GB, 15.6", Windows 7 Pro 64 Bit & Back Pack Carry Case,Supported memory media: SD,With HD Webcam
5	Printer	General	with standard accessories	25	Manufacturer :HP Model:HP Laser Pro 400 M401d Specification: Print speed black: Normal: Up to 33 ppm First page out (ready): Black: As fast as 8 sec Print quality black (best): Up to 1200 x 1200 dpi Duty cycle (monthly, A4): Up to 50,000 pages Print technology: Laser Memory, standard: 128 MB Paper handling input, standard: 100-sheet multipurpose tray 1 automatic duplex printing Output capacity: Up to 150 sheets
6	Stil Picture Camera	General	Shoulder strip, batteries, pouch etc	25	Manufacturer: Sony Model: Sony Cyber-shot DSC-H400 Specification:Sensor resolution: 20.1 Mega pixel, 63x Degital zoom,720p HD movie recording,Max. video resolution: 1280X720 ,Storage Media: SD memory card -32 GB,360 degree Sweep Panorama,Face Detection and Smile Shutter technologies
7	Electronic Scale	General	with standard accessories	25	Manufacturer:China Model:At the time of PO Availble Best Model will be Given. Specification: Capacity: 100 kg Readability: 0.01 kg Stainless steel weigh pan AC & battery operation
8	Steel Cabinet	Will be used for storing equipment		25	Manufacturer:Local Model:Local Specification:Height: 1.2 meter,Width: 0.8 meter,Depth: 0.4 meter,Draws minimum three,Locking system with keys With wheels,Steel thickness gage (18 gage or below)
9	Photo Copier	General	with standard accessories	1	Manufacturer: Konica Minolta Model: Konica Minolta 554e Specification: Copy Speed (A4 Crosswise): 55 ppm,First Copy Out Time: 4.1 Sec,Warm-Up Time: 22 Sec,Copying process: Electrostatic laser copy,Copy resolution (dpi): 600 x 600,Multiple copy: 1-9,999 sheets,Original format: A5 - A3,Paper trays capacity: Tray 1: 500 sheets, A5-A3, 52-256 gsm, Tray 2: 500 sheets, A5-SRA3, 52-256 gsm,Auto Duplex Paper Size: A5-SRA3; 52-256 gsm,Scan Main: 600dpi × Sub: 600dpi,Print 1,800 dpi (equivalent) × 600 dpi,Standard Space Requirements

Appendix 6-8: Other Activities

Result of Follow-Up Workshop

Results of the Workshop

Table of Contents

A. Result of the Training

- Enhancement of **technical knowledge and new technologies**.
- **Updated knowledge on technologies and exposure to latest technologies** to replace what they have learnt before at ATI.
- **Improvement of communication/ facilitation skills.**
- **Abilities to communicate with farmers and to respond to their inquiries.**
- **Practical knowledge** obtained through exposure visits.
- *Exposure to various research stations* during the training.
- Ability fostered **to train other FAs and farmers**.
- **Abilities to discuss with farmers to identify their problems as well as to suggest solutions.**
- **Better interaction with farmers and trust from farmers.**
- **Better rapport** between farmers and department.
- **Change of FAs' behaviors and attitudes towards farmers** in positive manner.
- Accumulation of **practical experiences** in the field.
- Recognition of the **importance of extension planning and effective implementation based on the plans.**
- Enhanced knowledge on **various extension methodologies.**
- **Ability to prepare / produce supporting materials** for extension activities by themselves.
- **Utilization of posters and other extension materials developed by the Project.**
- Building up of **relationship with NARC and researchers**.
- **Better linkage among the extension staff**, especially among those from different districts.
- **Awareness on different farming problems in different areas** through exposure trips and exchange with co-extension staff.
- **Increased opportunities to share information and technical knowledge** among researchers, extension staff, and farmers.
- **Sharing and transfer of the knowledge and technologies** learnt from the training to those FAs who did not participate in the training.
- **Dissemination of learnt technologies to farmers** which improved agricultural practices of the farmers.
- Provision of some improved varieties (seeds & seedlings) from NARC to farmers.
- **Farmers' interests in farming increased** with introduction of improved technologies.
- Improvement in **discipline and work ethics** among trained FAs.
- **Increase of self-confidence and motivation in** carrying out extension activities.

B. Challenges in the Field Extension Activities in General

- FAs **do not have office** to be the base of activities.
- There are **chronic problems of mobility for field's activities**, especially in remote areas and / or mountainous locations. Lack of transportation facilities makes FAs' mobility difficult.
- **Every FA has to cover 3 to 4 UCs** but it is difficult for him to regularly address all farmers in these areas.
- Heavy workload: **FA can spare less time for field due to the burden of work in offices** (such as registration of farmers for wheat seed provisions, etc.).
- **Allocation of funds for field activities from the department is very limited**. Lack of fund to avail necessary inputs and lack of information on technical knowledge to be disseminated.
- There is **not sufficient provision of agricultural materials, tools/machinerie**s to be used in the field activities.
- **No demonstration plots** to disseminate the technology.
- Due to lack of trained staff, extension officers cannot address to the farming communities and their problems that are in a vast number.
- **Lack of linkage / communication gaps between research and extension**. No information about research results are shared to FAs.
- The **linkages among different departments of agriculture ministry are weak** especially with research institutions.
- Lack of proper training program for the farmers.
- It is **difficult to set meeting / gathering with farmers at some timing of crop seasons**, e.g. at harvest time, farmers are very busy.
- Some farmers consider the old practices are good enough and do not trust new things. They think that their ways are better thus they are not interested or do not listen to FAs.
- Farmers do not use the fertilizers and other chemicals properly. Also, some un-registered chemicals are used.
- Since FAs are to cover wide geographical areas, **lack of transportation facilities causes difficulty to reach and disseminate technologies to the farmers**.
- Gap between farmers and department: Farmers do not contact to department even when they have problems. There are not much opportunities for the department and farmers to have interactions.
- Farmers are poor therefore they do not follow the recommended doses of fertilizer and pesticide.
- **Literacy / educational background of farmers**: Many farmers are illiterate and some have difficulties in picking the right message delivered by FAs. Their understanding is not sufficient and they cannot easily be convinced. Farmers are mostly illiterate and not showing interests in advanced technologies and knowledge. Because of low level of education and literacy of farmers, the technical messages are not well disseminated or accepted.
- **Availability of quality inputs:** Farmers are not using quality inputs such as certified / quality seeds, hybrid seeds, pesticides etc. because some are not available at local markets or because farmers cannot afford to buy them.
- Farmers face **problems in marketing** their produce due to very weak market system.
- **Political interferences**: FAs' field activities are disturbed when political persons intervene, e.g. to select the farmers to be given some inputs for demonstration, etc. (sometimes people who are not engaged in farming are given those provisions).

C. Actual Difficulties Encountered during the FW2 and Countermeasures

Difficulties Encountered	Countermeasures Taken
Lack of Mobility.	The M&E Officers of the Project helped the staff with their vehicles.
No allocation for refreshments.	・ Farmers and agriculture staff arranged the refreshments from their own pockets. ・ Some FA organized the activities with small number of farmers in their plots to avoid sitting in meetings.
No provision of funds for stationary to prepare materials for meeting with farmers.	FAs had to use their own money.
Pruning kits were not available.	They had to ask farmers to bring different tools and used the farmers' own kits.
Laptops and printers were not available.	Agriculture staff used their own laptop to show the videos to the farmers.
The fruit fly traps were not available.	・ They procured by sharing of costs: 60% provision from office and 40% of the costs borne by farmers. ・ FA improvised the traps with Pepsi bottles.
Chemicals for the weeds in wheat crop was expensive.	FA advised farmers to purchase from MFSC where the price is lower than in the markets.
Chemicals for termite control were very expensive.	FA introduced alternative method (biological control).
Lack of printing materials such as pamphlets, brochures, etc.	・ FAs used old newsletters available at the office. ・ FAs explained verbally. ・ FAs made some materials themselves.
FAs could not arrange enough number of materials / tools for group activity.	・ Some farmers provided their own to be used in the FW2. ・ Sometimes FAs bought them with their own money.
Problems of wheat leaf rust and downy mildew in garlic are reported during FW2.	FAs provided suggestions to use certified seeds.
Seed germination rate is low.	The techniques using plastic trays are introduced.
Difficulties to gather farmers at the time of dissemination.	・ If the group meeting is not possible, individual meeting was arranged. ・ The venue of dissemination activities was changed and activities rescheduled.
Some rich farmers who have large plots are not interested in improvement of cultural management or new production technologies (because they can get enough).	Progressive farmers who also have large plots were invited to talk to these farmers so they could be convinced.
Some farmers were not interested in the FW2 at the beginning.	・ FAs tried to attract their attentions by displaying some charts regarding the techniques with comparison between conventional and advanced practices. ・ FAs showed agricultural magazines, charts, and other materials to attract the farmers. ・ The benefits of application of technologies were emphasized.
Political interference.	FA had to seek guidance from the AOs.
Because of the limited time allotted for field work, the specific crop on which the FA wanted to demonstrate some techniques was not in the field.	FA used the picture of the crop and showed the video. He also used the charts to foster the understanding of farmers on the problems.
Conflicts among farmers made the meeting difficult.	FA selected representatives from different groups or some leaders who can influence both to attend the meeting.

D. Suggestions for Improvement of Training

- This type of **refresher training should regularly be organized** as well as the training on new technologies to be arranged more frequently.
- Continuous training should regularly be organized (e.g. in every 6 months).
- **Resource persons should deliver the lectures relevant to their expertise and respective topics.**
- There should **not be repetition of lectures** during the training.
- **Language of instruction should be in Urdu or Pashtun.**
- **Training materials, presentations and handouts should also be prepared in Urdu or Pashtun.**
- The latest finding and research results of NARC (including publications and presentations) should be shared.
- **Practical work should be increased and focused** more in the entire training course than theoretical work.
- The training should **focus more on the area specific crops and problems,** which are applicable to respective environments of the areas of the participants.
- **Topics and subjects of the training should address the needs of FAs and farmers**, and be focused on specific crops and environment of the areas of participants as well as with the crop seasons.
- **For location-specific topics on which NARC does not have much focus, resource persons would better be invited / mobilized from KP province or outside.**
- **More exposure visits** to be included in the training course.
- **Exposure visits** to other province and districts to be organized.
- More IT-related courses should be included and laptops should be provided.
- It is better if other training on honey bee, dates, and silk will also be arranged.
- **Every participant should be given a chance to practice a presentation during the session on facilitation skills.**
- More **agricultural literatures should be provided** to participants as well as to the farmers.
- Duration of the training was not suitable because **course work was very intensive** and it was not manageable in short duration.
- It is better to arrange the time of training from **8:00 a.m. to 2:00 p.m**. and make the duration longer. The participants can be tired as there are many topics and the training is very intensive.
- This kind of **training should be arranged at district levels** so that all FAs and other extension staff can be trained.
- **Topics and subjects of the training should address the needs of FAs and farmers**, and be focused on specific crops and environment of the areas of participants as well as with the crop seasons.
- **This type of training, i.e. combination of training and actual work with farmers, was the first experience for the FAs, and should be arranged more by NARC-API.**
- The **concerned person (extension related personnel of KP) should be included in any project planning.**
- **During curriculum preparation, FAs should also be invited together with other relevant persons.**
- **Consideration should be given to the selection and eligibility of participants** (It is not meaningful if any trained staff retire right after the training, etc.).
- Progressive farmers should also participate in this kind of training with extension staff.
- Farmers should also be given training by NARC-API.
- Mobility of staff and allocation of more staff will be necessary to maximize the effects of training.

Appendix 6-9: Other Activities

Learning from Study Visit to Gilgit-Baltistan by the Training Participants

JICA-PSDP Project

"Capacity Development of Agriculture Extension Services in Khyber Pakhtunkhwa Province"

Study Visit to JICA Technical Cooperation Project

"The Project for Promotion of Value Added Fruit Products in Gilgit-Baltistan"

29th September 2015 - 4 October 2015

Useful learning's

Most Useful Topic	#	Definition	Effect	#
Bokashi Preparation	13	It is an organic fertilizer similar to compost, the main difference between compost and Bokashi is time duration. More details you can find in the Bokashi production brochure.	Bokashi will Reduce the use of chemical fertilizer	6
Bokashi Preparation	13		Quality Yield	3
Bokashi Preparation	13		Reduce the time period	2
Bokashi Preparation	13		Reduce the input cost	8
Structure of RDO, LSO & Female support Organizations	10	Women are playing very important role in our agriculture, unfortunately they are not getting much support from our extension workers due to some cultural barriers but if we make such female support organizations at our village level, it can help a lot to improve & enhance their capacity. besides that the local support organizations at village level can administrate closely all the activities of that area and can support the peoples effectively.	Would be helpful to increase the strength of existing local support organizations	1
Planting Technique	10	Put enough media to make plant higher 30cm than soil surface, which will give enough space to roots for growing and would consume less water.	Decrease the mortality rate of plants	1
Planting Technique	10		Production would be increased	2
Planting Technique	10		Roots & plants would be strengthened	5
Planting Technique	10		Farmers don't need to dig a hole for planting & also number of plants can be increased in this technique	1
Pruning	9	Pruning enhances the fruit weight & reduce the shot hole infection in new & old orchards, just leave three main branches on tree to get quality fruit, easy to observe and easy to harvest the fruit.	Reduce the diseases attack	4
Pruning	9		Get yield from old trees after pruning	4
Pruning	9		Increase the life span of trees and quality of produce	5
Pruning	9		Increase farmers income	1
Picking Technique	8	Pick the fruit with flower stalk, fruit will get necessary nutrients through that stalk despite harvesting, which would increase the shelf life & freshness of the fruit.	Reduce post harvest losses	5
Grading	8	Grading is a good tool to earn more profit, we have seen how the farmers in	Increase the Price of produce	4

Study Visit to JICA Technical Cooperation Project
"The Project for Promotion of Value Added Fruit Products in Gilgit-Baltistan"
29th September 2015 - 4 October 2015

Useful learning's

Most Useful Topic	#	Definition	Effect	#
Grading	8	GB are grading their produce according to weight & size and in the result they earn good profit.	Through that equipment grading quality would improve	1
Bordeaux Mixture Preparation	5	You can make Bordeaux mixture with just some very common & cheap ingredients (Copper sulphate, Lime & water) you can find the technique how to prepare it in Bordeaux mixture brochure.	Reduce the input cost	2
Bordeaux Mixture Preparation	5		Use of pesticides would decrease	2
Bordeaux Mixture Preparation	5		Prevent Orchard from different diseases	2
On farm test of ripeness of Apple	4	Pick some fruits randomly from the orchard, cut them from middle and put some iodine on endocarp(inner middle part), by just changing of color you would understand whether its ready to harvest or still you have to wait.	Farmers would have exact idea of fruit maturity which would be helpful to harvest on time	2
Packing	3	Good packing would attract the customer and reduce the losses while transporting it to market. Especially packing with stalk and without removing the natural white powder coating can keep the produce fresh for long time.	Earn good profit	2
Packing	3		Reduce post harvest losses	1
Packing	3		Consumer Attraction	2
MML (Mountain Microorganism Liquid)	3	MML is an organic & act as a biotic fertilizer & fungal/bacterial pesticide, besides that it can replace the various synthetic pesticides which are causing health & environment hazards.		
Bio Insecticides Preparation	3	BIP is an excellent replacement of expensive & dangerous chemicals		
Drying Techniques	2	Apricot should be harvested before getting over ripened and cut them in the proper shape. By following these two steps we can improve the quality of dried fruit	Farmers would get quality dried fruit	1
Value added fruit products	2			
Autumn Plantation	1	We can get 1year early produce if we do plantation in autumn instead of doing it in spring.	Reduce the water shortage	1
Specialty in one crop	1			
Fruit Germplasm	1			
Food Processing and marketing	1	By involving private Agri-business companies to market our products can build a strong marketing channel.	To involve private sector we can strengthen the marketing system	1