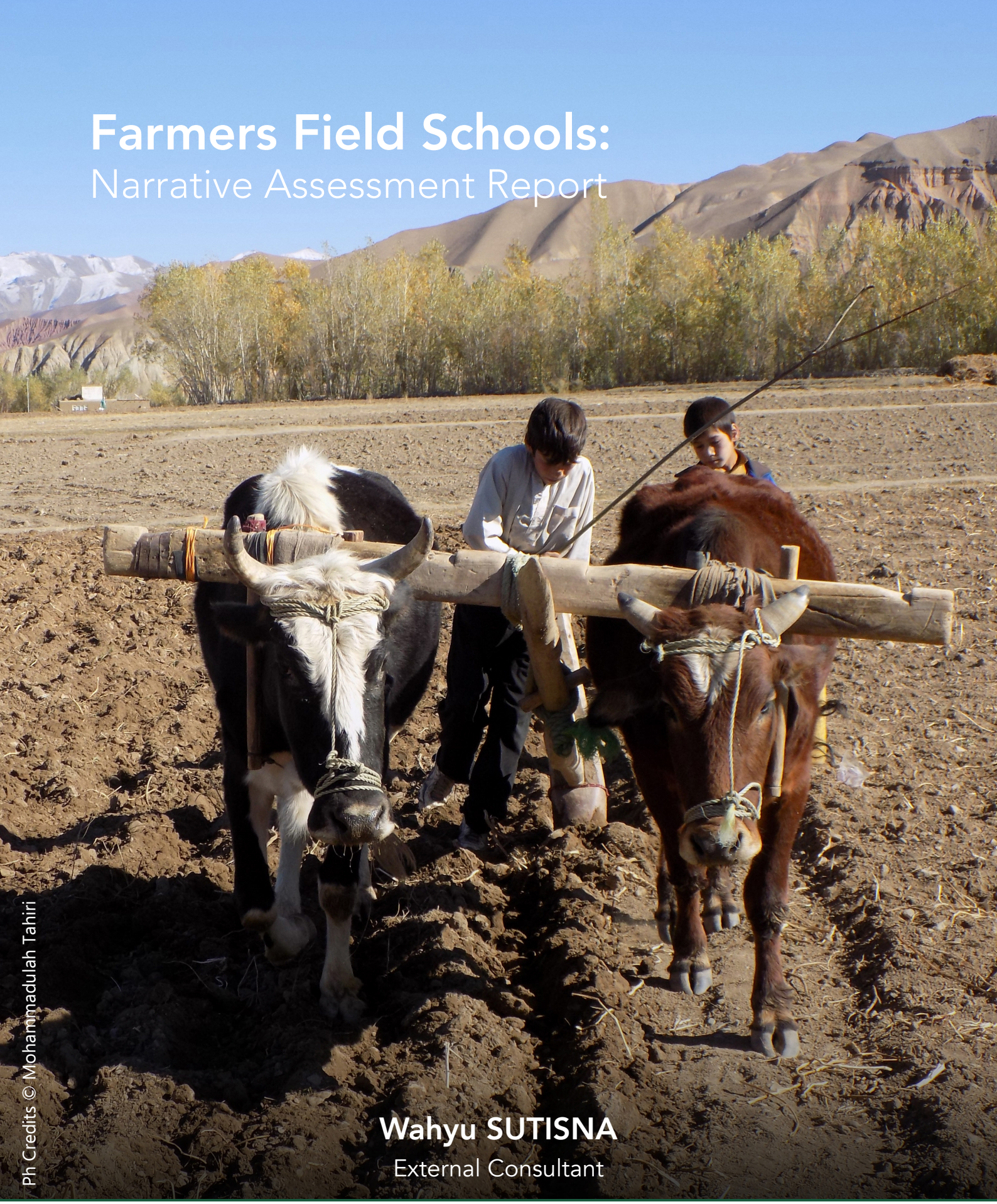
Farmers Field Schools:
Narrative Assessment Report



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Central Highlands
Sustainable Development Programme

SOLIDARITÉS INTERNATIONAL

Central Highlands Programme (CHP) is common initiative implemented by a consortium of three French NGOs (GERES, MADERA and SOLIDARITES INTERNATIONAL) funder by the Agency for French Development (AFD). The general objective of the programme is to increase the living standards and quality of life of rural mountainous populations by promoting balanced rural development and preservation of natural resources. The 3.5 years programme was launched in March 2014 in two provinces of the Central Afghanistan: Bamyan and Maydan-Wardak.

Acknowledgment

Numerous individuals have contributed to the creation of this report. Like the Coordinator and Deputy Coordinator of food security, Project Manager, Activity Manager, Agro – Supervisor in Sayghan – Base and Yakawalang – Base. This report represents and describes the collective information of everybody who shared their knowledge, experiences, ideas and expertise. Special thanks go to the leaders of the SOLIODARITY International and BAMYAN Head office, who coordinated all of the field visits, for the several field trips, and generally made sure that everything happened according to plan. Without her capable assistance, it is unlikely that this effort could have been completed on time!

Special thanks as well to the numerous officers who devoted considerable time and effort to share me how the fields school was conducted in the field, especially Abdul Razak Razi, and Gholam Hasaan, in Sayghan district, Dzikrullah, Dade Khuda and Ikhsanullah in Kahmard district for their valuable information and explanation. Many thanks going to Ali Azimi, Yaqub Maiwal for interpretation, Zalmai, Aziz U rahman, Nedu Mohammad, Khanon Rahimi, Zahra, and Mohammad Ariq, in Yakawalang Office – Base, for sharing their experience and accompanied during the mission and were generous in sharing their insights and knowledge of the Farmer Field School approach, its history, achievements and constraints. .

Numerous farmers group and individual provided several live discussion and their insights into the farmer field school, their knowledge, perception, and experience and most valuable contribution, incorporated in this report will finally inspire concerns peoples on how field school solidarity international should look like for tangible outcome. Their honest articulation proudly and generously shared. Finally, the narrative report is express of reality in the ground and bias was avoided. This report was written by Wahyu Sutisna, Farmer Field School Consultant.

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1. Background

SOLIDARITIES INTERNATIONAL is working on promoting sustainable agriculture and Natural Resources Management in Bamyan, introducing new techniques and methodologies, more respectful to the environment, allowing better conservation of soil fertility and supporting more efficient use of water. The current projects, demonstration plot are implemented at farmers level, as well on-farm experiments and regular training sessions are conducted all along the year with farmers.

After the decade of implementation, SI redirect from Progressive Farmer Relay (PRF) approach and adopted the Farmer Field School methodology. In order to achieve this, the capacity of field staff must be reinforced to ensure more develop participatory when working with community in the field.

SI staff have recently received the training on the farmer field school approach and methodology and started the implementation according to the result of the training and to measure the current field school practices and it performance, the assessment is requires.

The outcome of assessment will be used for the inputs of improvement according to the field school standard which has been implemented in many others regions, SI will taking account for further intervention related to effective implementation and result of farmer field school.

2. Objective

Is to observe and assess the practical of current implementation of the farmer field school methodology in agriculture and animal husbandry organize by field technicians and to provide necessary recommendation or suggestion to improve and refine the areas of implementation methodology.

3. Expected output

The outputs of this Farmer Field School study reflect the areas below:

1. Strengths and weaknesses of the current implementation practices for the farmer field school methodology are identify
2. Gaps in the current implementation practices and the formal field school methodology are identify
3. Recommendation for improving the effectiveness of the current implementation practices in achieving the goal of the farmer field school methodology

4. Justification

4.1 The Farmer Field School

There is a “standard” model FFS. This standard model establishes a norm for implementation of FFS. There is lots of room for variation as long as the resulting process is learner centeredness, participatory, and relies on an experiential learning approach. There have been variations in the standard and models for different situations and contexts call for adaptations. When an FFS is conducted in a crop other than rice, there are necessarily changes based on factors such as the key growth stages of the crop, local cropping patterns and specific local problems. Any FFS should rely on the same process; it is the content that changes as the FFS is conducted with different crops and social culture. The four IPM principles, of course, underpin any IPM FFS. The FFS is not materials dependent, but it does depend on having access to fields

where observations can be made and studies organized. The materials that can be found in an FFS are those that learners use to construct experiments or in making analyses and presentations

The access to where farmer have better learn in the field, is depend on the facilitator ability to generate curiosity and interest and actively taking part in any field school stages such field monitoring, discussion, and taking decision. Proper educational processes and relevant curriculum are the essential elements ensure for the field school farmer gaining sufficient knowledge. In other side, timely available learning tools and materials help facilitator organize learning effectively.

When field school was introduce either in farming sector or beyond and without taking account into technical, social and cultural context, the learning process perhaps facing constraint and difficulties. However, proficient facilitator is significantly playing important role to eliminate the constraint, although it is not a single factor to lead successful field school.

5. Farmer Field School of SOLIDSARITIES INTERNATIONAL, general profile

SI livestock and agriculture technical staff have receive training on the farmer field school approach and already started of implementation follow the result of the training in two district Yakawlang and Sayghan with sub - office or sub – base in Kahmard. Six field schools are being organized in Sayghan and similar group are organize in Kahmard Sub – Base. Each of field school has a plot of approximately 2000 m square where two introduced wheat variety were grown, and new improve variety of potato planted with set of technical demonstration for the field school trainees to learn and adopt.

Except in Yakawalang, field school in animal husbandry and vegetables women field school are being organize. By field technicians, other crop field schools are similar to Sayghan and Kahmard.

Other research plot of mainly on wheat varieties and different treatment are also complement to improve field staff knowledge and skill each of office (Sayghan and Yakawalng) implement four research sites. One farmer plot also selected as demonstration field in adjacent to research plot (case in Sayghan and Yakawalang) the objective is to assess adaptability of particular technology and effect to the crop yield.

As SI adopt the field school concepts, methodology and practices from the first source and applied for crops and animal husbandry, therefore several elements are similar to the original version used for the rice crop in South East Asian countries. Similarities are; village selection and prioritizing, participant selection, meeting schedule, small group discussion and presentation, and learning plot (FFS centre)

Field assessment has been conducted by visiting field school in different places and ensuring the information gather are correct, field observation, and discussion with relevant actors was in place.

6. Field school has been visited in Sayghan - Based and Yakawalang - Based is;

In Sayghan District, five field schools able to visit are,

Ghorabchi, Biani, Ghorab, facilitated by Mr. Raqzak Razi, Garwana and Sayeed Baba facilitated by Mr. Gholam Hassan and the only two groups conducted the technical session coinciding to the visit, Ghorab group and Garwana group, meanwhile in Ghorabchi, Biani, and Sayyed Baba groups do not conduct technical session.

In Kahmard District, three field schools able to visit are,

Yakhak payen group and Panja madar group who facilitate by Mr. Dade Khuda and Payen Bagh who facilitate by Mr. Ikhsanullah. The only Yakhak payen group who conduct technical session coincide with the visit and two other group do not.

In Yakawalang District, five field schools able to visit are;

- Halwaqul village, crops field school, facilitate by Mr. Zalmai
- Sarafak village, crops field school, facilitate by Mr. Aziz-U-Rahman
- Naitaq village, animal husbandry field school, facilitate by Mr. Nedu Mohammad
- Dasht e Sachak village, vegetable field school (female group) facilitate by Mrs. Khanon Rahimi
- Sachak Pomdach village, animal husbandry field school (female group) facilitate by Mrs. Zahra

7. Areas have been assessed

7.1 The Comparative Study (FFS centre)

Assessing the design, practices and objective of the study

Each of crops field school equipped with demonstration plot, called FFS centre relatively similar in size planted with two new introduce wheat variety and kept small portion planted by potato and vegetable, except field school in animal husbandry without centre, and field school vegetable slightly different from wheat. The purpose of centre is to provide farmer technology have to be learn, each meeting and the topic should organise in the centre and relevant to crop situation. At the end, farmer expect to adopt the technology into own plot.

Field school farmer have collective work to prepare centre in land preparation, seed sowing, and small portion in weeding, the rest agronomical practices done by land lord. *There is no specific objective in the FFS centre that farmer have to learn and observe, the centre is design for demonstration plot, not as a tool that farmers should learn how these technology is work and adopt.*

7.2 Technical Session or called Topic

Assessing the learning procedures

Technical session was organized in weekly basis since land preparation, seed sowing, irrigation and weeding. Other related topics organize in weekly basis in the centre, but not all field school, the distance from their resident makes farmer reluctant come to centre. For field school organized in the centre, yet not practices in crop field. No available teaching aid provided, topic irrelevant to crop situation, except for animal husbandry and little for vegetables field school. Facilitator and farmers mention 17 to 20 meetings have been organized until July 2014 it continue up to 23 0r 25 meeting respectively until crop harvest. Different to field school in animal husbandry and vegetable, session was organized practically. In general, *there is no meeting agenda and specific objective of the topic that helps farmer comprehends. In particular field school on wheat the topic was not meet with field need, even without practical work such crop observation, discussion and conclusion.*

7.3 Facilitator competency

Assessing facilitation skill

Some technical sessions were organized by facilitator, meeting was begun with facilitator asking for recapitulation of the past topics was conducted, farmer articulate they remember. New session begin with facilitator explanation regarding today topic, instruction was given to do small group work of five,

soon flip chart and marker pen distributed. Farmers are writing what they know onto flip chart, for those who do not clear the objective or illiterate do not participate.

After completion, one of small group member presenting their result to other in group, continue in rotation basis until all group finished. Little question and answer was in place, no depth discussion indeed and facilitator do not posing relevant questions to measure what actually have learnt. Perhaps facilitator do not select topic based on field need as well curriculum of competency and training modules have to prepare. *Majority of facilitators conduct the session without systematic procedure and irrelevant topics, not significantly improve knowledge and skill. Few of them doing better in women vegetable and animal husbandry field school.*

7.4 Farmer experience in the field school

Assessing farmer selection, participation and their interest.

Following information from sources, farmer selections initiated by meeting with village council (shura) and selects 25 farmers who willing to joint. Facilitator registers them and plan for the next meeting. All fully participate in early meeting regularly; later participants are reducing gradually. The farmers who regularly participate in field school are 15 persons, and the rest not confirming. Based on their observation, the number of farmers should not exceed from *15 persons only* and should neighbour each other for easy communication. Discussion was held with farmers who are not in field school day. Farmers articulate their experiences from the beginning until current days, they express willingness to participate in field school, and disclose who not regularly participate.

As they observe, many farmer engage with off farming business such, selling labour for cash, busy at own field works, weeding, irrigation, collect fodder, harvest, and went for summer herding animal (aylok). What was farmer observe is absolutely true and acceptable. *Therefore, field school meeting should be*, *bi-weekly basis to accommodate farmer business.*

7.5 The Facilitator Action Plan

Assessing technical issues and relevancy

The action plan is a basis to direct field school organization for the entire crop season. Plans provide detail information of crop stages and topics shall be cover from land preparation until the end. Realistically, this action plan is to general and not reflects to specific crop penology, and many technical topics irrelevant to FFS centre. Therefore, *action plan should review and specified for each crop as well teaching curriculum with particular competency wish to achieve*. In addition, *training modules should develop ensuring facilitator systematically facilitate the topic, and stimulate farmers become active learner.*

7.6 The Training

Assessing field school training contents and requirements

Ideally field school requires high proficient facilitators, must technically sound and has greater knowledge in facilitation and adult education methodology. Their role is to provide learner opportunity which enabling them gaining sufficient knowledge and skill. Facilitator, should possessing critical analysis in social characteristic and minimizing inhibiting factors, and remove the barriers, helps them gaining essential information, technology and policy. *Need Specific training to improve adult education and facilitation skill areas.*

8. Strong Areas Identified

SOLIDARITY INTERNATIONAL, have tremendous effort to helps most needy rural peoples through adoption of farmer field school to met their basic needs. The strong areas comprise basic elements such as:

- Committed staff at all level, they are sincere and dedicated to their responsibility, possessing a great willingness to help peoples and this is the fundamental elements for greater achievement.
- Basic standard and procedures of field school has been practices, supporting research plot being conducted, field school equipped with centre, regular meeting and session organized, farmer selection and nomination follows guidance, and improvement is undergoing, these are the most essential for the field school.
- Potential facilitator with university background who possessing basic knowledge is valuable asset and resources that can move forward in greater competency in the near future.
- Partially facilitation processes are adhering, somehow, need to be furnished in adult education principles, ensuring farmer have greater knowledge and improve skills.
- Required facilities support and policies are timely provided, this is allowing staffs involved in field school gradually improve expertise and professionalism. This is essential elements for greater project achievements and contributes to individual career.

9. Weak Areas identified

In addition to the strong areas, weaknesses also note such below:

- There is no specific detail field school curriculum and expected farmer competencies is documented, this lead to difficulties in developing training modules which ensuring field school is systematically conducted follows adult education principles.
- Utilize less field school centre as major learning tools are common in wheat field school, meeting not begin with crop observation followed by discussion and conclusion due to lack of planning. In addition, irrelevant technical topics are practices despite meeting took place in the centre.
- Design of comparative study (FFS centre) not specifically indicates technology aims to promote and learned by farmer, is too general. Originally the centre is tools for farmer have to learn about technology, familiarize the system, observe the crop phenomena for the entire season and conclude the result at the end.

10. The Gaps identified

The following consolidate information gathered from farmers, facilitator, supervisor, field observation and available documents, there are two major gaps discovered as highlight below:

- Adopted field school methodology and practices basically develop for Asia rice farmer aims to promotes Integrated Pest Management in Rice (IPM in Rice) to control rice insects and diseases based on tropical rice ecology. Meanwhile, the field school practices by SI are technology dissemination model aims to promote technology adoption. Therefore, field school

methodology and practices have to review for adaptability, in accordance to the objective and suitability for better farmer participation and adoption.

- Proficient facilitator is key success for better achievement through technology promotion to be adopted, at the same time designing post field school activities helps farmer actualizing their knowledge and implement at own initiative. Currently, facilitator's performance is not met the optimum skill requirements.

11. Recommendations

In general recommendation comprise of essential elements are indicate below:

1. Farmer selection continues at current procedure, however, after 25 farmer nominates re-validation by key farmer is essential to select 15 neighboring farmer. This is ensuring greater farmer participation and maximum technology diffusion.

2. Reduce total meeting frequency from 30 to 15 times as well farmer suggestion. Weekly meeting only during land preparatory, and sowing followed by bi-weekly after crops germination and onward. This avoiding boringness and accommodate farmer doing own farming business. This also applicable for male field school animal husbandry, not for field school in vegetable and female animal husbandry.

3. Field school curriculum and training modules have to be developed; this is applicable for all field school. Any topic should follow module systematically, avoid lecturing model, stimulate farmer active learner to comprehend the subjects.

4. Every field school meeting have to follow agenda for measurable outcomes. The agenda comprise of the subject will be learn, and time table. The agenda helps facilitator focus the learning process and avoid unnecessary discussion.

5. FFS centre should re-design for better focus technology. Treatments have to indicate what specifically farmer have to learn and what advantages are there. This helping farmer follow the scenario of technology dissemination procedures. Too much information willing to disseminate, to little farmer will learn. Or.....

6. Change design of current field school centre to field school technical dissemination model. The technology willing to disseminate is shared to field school farmers based on crop interest. Pair of them apply recommended single technology only in their own partial plot and should not too large, the rest depends on what farmer normally practice. Bi-weekly meeting organize in convenient place, farmer should take crop samples from both recommended and own practice to the meeting for discussion. Facilitator set the mechanism, asking farmer to show the sample and explain current crop situation. The other free to ask and give comments. All farmer should share own situation by rotation until session completed. At the end, facilitator summarizing the day learning and the knowledge farmer has gaining.

12. Annexes

12.1 Examples of training modules used for field school topic (example)

Water evaporation test and mulching

Background:

In general soil evaporation is causes by sun ray exposures and wind blowing. High temperature or wind blowing, in particular is contributes speeding up evaporation incidence and causes soil rapidly dry. The evaporation scale also determines by factors of soil cover, soil type, availability crops residues or mulching over the surface. Dry soil need frequent irrigation, for the water shortage area, soil cover is helps reduce evaporation and maintain soil humidity. Mulching widely known and practices by farmer to reduce evaporation and kept soil humid for longer time and reduce irrigation schedule thus save more water. Many type of mulch farmer can apply such use of plastics, however, for the small scale farmer use of dry weeds mulch is encouraged because availability in the village and de-composted mulch become organic manure.

Objectives:

After practice: farmer comprehends importance of soil cover to maintain soil humidity

Time requires:

10 minutes to explain the session, 2 hours or 1 day to practice, depend on weather.

Materials needed:

Containers can be plastic tray or shallow bucket so can afford enough soil, (3) pieces.

Dry leaves or others materials used as mulch to cover soil in the containers

Water as needed.

Procedure:

Filled the containers with the soil little bit below the surface, wetted with the water like soil after the rain. Wetting must evenly over the surface for the all of containers.

Cover the two containers with dry leaves like mulch, one of them should be covered slightly thin, the other one covered quite thick. The last container let the soil bare and does not cover.

Three of them placed in the open field that can be exposed to the sunlight directly.

After two hours collect all of them and observed, in which containers that soil still wet, and in which soil was dry.

After the observation, return all the containers to the same placed to be exposed by sunlight for the entire of the day. After one day bring back all the containers, take all the soil out of the containers. Observe the soil closely, which container the soil is still humid, and which container the soil is completely dry.

Discussed with the group, why there is different water content among three containers, and where the water was gone.

Questions and discussion:

What will be happening to the water in the bare soil?

How if the strong wind blowing the soil surface, what will be happening to the water in the soil?

Why practice mulching is important? What are materials locally available for mulching? What the permanent soil cover mean?

Conclusion:

After the discussion, concludes importance of permanent soil cover to reduce evaporation and maintain soil humidity

Nutrient up taking

Background:

Anatomically every plant has two major vessels, Xylem and Phloem that like a hose use to transform water. Xylem is transporting nutrient and water from the soil to the leaves and processed become starch through photosynthesis. Phloem is used to distribute the starch to overall plant part such stem, branches, flower and fruits to be developed. Process of up taking nutrient and distribution of starch need water to transform. Lack of water or disruption of water transformation system cause in effective of photosynthesis, and it affected to the plant growth.

Objective:

After practice: farmers comprehend the importance soil have sufficient water.

Time requires:

10 minutes for introduction, 1 or 2 hours to practice

Materials needed:

3 discarded bottle of mineral water 1 or 1, 5 liter size, cut into two part.

Red food dying 2 vials

Water as needed

Plant with clear tissues like, vegetable seedling can appropriate 3 plants, roots should not be cut

Dead plant with roots, 1 plant

Magnifying glass if available

Procedures:

Fill the cut of bottle by water and pour the food dying into, stir so the water color becomes red evenly.

Placed these live plant into the mixing water, put the roots on the bottom of the container.

In the other bottle placed the dead plant as well the live plant. The last bottle place the plastic straw that has no vessels.

Put all the bottles in the bit shady place, do not openly to sunlight.

After 1 or 2 hours, observe the plant tissues on the stem, branches, leaves, or flowers. Used magnifying glass if available. Observe whether the red color was moved to the plant tissues, if yes, trainees should answer the questions later. Cut the stem and observe the vessel closely. Observe also the dead plants and straw.

Questions and discussion:

After observation completed, pose the questions; how does the red color is moving from the bottom to the plant tissues, why it does not happened to the dead plant and straw,

Does it possible the red color move without helps of water. If the red is nutrients, how important water in the soil is.

Conclusion:

Concludes the importance of soil have sufficient water for better crop growth and yields.

Indigenous Micro Organism (IMO)

Background:

Indigenous Micro Organism (IMO) is a kind of Effective Microorganism (EM) which made from the available local materials, as alternative of EM that have to buy from the market. IMO have low acid and PH approximately 3,5 IMO also containing huge of microbial are useful to be decomposition agents or bio activator. IMO is widely usable making quick compost, plant growth stimulator and liquid fertilizer.

IMO can be made from various materials such: rotten sweets fruit such as, banana, grape, mango, or others. IMO also can be made from other source such bamboo shoot if available, others material for making IMO also molasses or sugar cane juice and rice rinses water, coconut juice also widely used.

IMO normally used as fermentation agent in making rapid compost that results high macro and micro elements, other utilization also for the liquid fertilizer IMO regularly sprayed onto crop to stimulate crop vigorous and more environmental stress tolerant.

Objectives:

After practicing the session participants will be able making IMO at own initiative and used it properly.

Materials and Tools

Ripe or over ripe fruits, molasses or sugar cane juice, rice rinse water
Plastic jar, plastic bucket, or plastic barrel

Comparison

1 kg fruits, after removal their skin or seeds for easy process
350 gram molasses or 1 liter of sugar cane juice
2,5 liter coconut juice if available
7 liter rice rinse water

Time requires:

15 minutes for the explanation and 1 hour to practice

Procedures

Fruits must be crushed using grinder or juicer so it become fine it help quick fermentation
Molasses slice into small pieces it easier to dilute in the water

Put rice rinse water into bucket and put also molasses or sugar cane juice into rice rinse water to become solution and stir gently become homogenous mixture.
Put crushed fruits into the solution and stir it for 3 or 4 minutes become evenly mix as thick solution and add molasses or cane juice if needed.
Close the bucket lid with plastic sheet or paper and tight it up with plastic string, keep out reach of animal or children and put in shade place or in side building.
Open the lid every three days and stir the solution gently using stick do not stir with bare hand to avoid contamination, close the lid again and repeat this practice until five times.
After fifteen days the IMO solution is ready to used, however, for better keeping, solution have to transfer to other jar for the safety after screening by using sieve.

Discussion:

What is the advantage making IMO? What is the constraint? Are materials and tools available in the village?

Conclusion:

Conclude the session what is the most important learning point from the underwent practices?

12.2 Technical topic and relevancy (example)

The facilitator must know the special topics must relevant to the field situation and how to develop. Example: for the soil issue must be conduct earlier because field school plot perhaps require soil treatment such adding organic manure, and farmer know the benefit after special topic learned. The reference below is example to organize special topic during field school.

Title of the topic	Appropriateness	Purpose
Seed germination test	Before seed showing, during land preparation	Farmer will comprehend of quality of seed they sown.
Healthy seedling/seedling bagging	Before land preparation after socialization, after seed germination test continued with bagging	Farmer will comprehend healthy seedling before transplanting
Water holding capacity	Before planting or seed sowing	Farmer will comprehend the advantage of using organic manure to improve soil humidity
Soil aggregation test	Before planting or seed sowing	Farmer will comprehend the advantage of using organic manure to improve soil texture
Indigenous Micro Organism (IMO)	A week after crops planting or seed sowing	Farmer will comprehend how to produce and use IMO and it benefit to the crop in field school plot
Water evaporation test and mulching	Before planting or seed sowing	Farmer encourage to apply method after learning
Nutrient up taking	During crop generative stage	Farmer will comprehend the important of keeping soil moisture and proper irrigation
Rapid compost making	Before planting, seed sowing or during crop vegetative stage	Framer will able to make and use compost at own plot during crop season
Organic fertilizer/plant juice	Two weeks after crop planting or seed geminates	Farmer will comprehend benefit of using organic fertilizer produce form plants

Title of the topic	Appropriateness	Purpose
Foliar spray-plant growth stimulator	Three weeks after crop planting or seed germinates	Farmer will comprehend function of foliar spray and have sufficient time to observe the effect
Insect identification and classification	Any time if insect available in the crop field	Farmer will comprehend which plant eater and their natural enemies
Plant diseases identification and classification	Before planting or seed sowing for the seed born diseases, during crop season for other infected diseases	Farmer will be able to diagnose the diseases symptom properly and take measurement
`Insect Zoo	Whenever farmer want to know insect role and function in the field	Farmer will familiar and able to differ which is plant eater and beneficial insects
Botanical pesticide/ chili pepper and garlic solution	During crop season or early planting in the field	Farmer will be able to make effective botanical pesticide at own initiative and observe the effect on targeted insect
Kitchen Garden model	After socialization and before seed sowing or transplanting	Farmer will be able designing garden according to their need.
Food and Nutrient household production	In the middle of filed school period	Farmer will comprehend about nutritious food for their health
Human infected diseases and it prevention	In the middle of field school period	Farmer will comprehend which infected diseases are transmittable and what prevention are requires