



Guidelines and Standard Operating Procedures

for

Implementing Outreach Program

in

IHPP Dzongkhags

(Ver. 2)

**Integrated Horticulture Promotion Project
in West Central Region
(IHPP-JICA/ARDC Bajo)**

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Guidelines and Standard Operating Procedures for Implementing Outreach Program in the project Dzongkhags of IHPP-JICA/ARDC, Bajo

1. BACKGROUND

The Agriculture Research and Development Centers (ARDCs) have started disseminating technologies directly to the farmers' fields from 2006 through a newly developed research extension approach called Out-Reach Program (ORP). This approach was launched primarily to avoid the conventional system of promotion of technologies which was mainly in the form of inputs (seeds and seedlings) supply to the farming communities or beneficiaries in a diffused or in a piece meal manner without proper focus. The conventional method neither brought about the adoption of recommended crop management practices nor brought significant economic benefits to the beneficiaries as desired. The efforts and resources in generating technologies could not realize visible physical progress although many of these technologies were proven to improve quality, yield and production.

The ORP is an efficient, popular and widely followed extension approach in disseminating new technologies to the farmer's field. The ORP involves active participation of the research, extension and farmers' right from the planning until it is fully adopted. This joint efforts or involvement favour faster adoption of the technologies. A parable relating to the successful implementation of the ORPs like Land Management in Salamjee village in Dagana Dzongkhag by ARDC-Bajo and the Integrated Vegetable Promotions implemented in Themdangbi, Phosorong, Drepong, Chali and Masangdaza villages in Monger Dzongkhag by ARDC-Wengkhar are some of the success story. This new research extension approach is now advocated and suggested to be adopted by both the public service providers like ARDCs and the Dzongkhag/Gewog Extension wings. The ORP has helped to advocate prospective high value crops and accelerated commercial production contributing directly to the nation's objective of food and nutrition security.

However, in implementing this ORP, basic guidelines and Standard Operating Procedures (SOPs) is found necessary to execute project activities within its mandates. Further, the SOPs would help in proper planning, execution and reporting of the activities while maintaining transparency and accountability. This guideline and the SOP has been developed with the objectives to upscale ORP activities by the ARDC, Bajo through the Integrated Horticulture Promotion Project (IHPP), Technical Cooperation Project (TCP) by Japan International Cooperation Agency (JICA) based at ARDC Bajo.

The main activity of the project is to promote horticulture crops in the West Central Region. This guideline and SOPs will be specifically followed for the establishment of demo orchards and commodity focus village in the project districts (Wangduephodrang, Punakha, Tsirang, Dagana and Gasa) of IHPP-JICA/ARDC Bajo.

2. OBJECTIVES

The following are the objectives of the guidelines:

- 2.1 implement impact oriented ORP under IHPP-JICA/ARDC Bajo (here in after referred as “IHPP”) in the project districts.
- 2.2 Maintain uniform and timely implementation modality of technology dissemination in an effective, transparent and accountable manner through incorporation of ORPs in annual work plan and progress reporting.
- 2.3 Foster strong cycle of research-extension-farmer linkages and,
- 2.4 Identify ORPs as demonstration farms and encourage farmer-farmer extension service delivery.

3. CRITERIA FOR SELECTION OF OUT-REACH SITES AND FARMERS / FARMERS GROUP

The main criteria for selection of sites, farmers, and farmer’s group/focus village are:

- 3.1. The selected farmers and focus village/farmer’s group will be from among the following
 - a. Farmer/ farmers group who had applied through Gewog (EA) and Dzongkhag (DAO) to IHPP
 - b. Nominated by the District Agriculture Sector (here in after referred as “DAS”)
 - c. Nominated/selected by IHPP
 - d. Jointly selected by the DAS and IHPP
- The final selection of farmer/ farmers group/focus village will be at the discretion of the IHPP in accordance with the availability of seeds and seedlings in ARDC Bajo and IHPP ORP plan.
- 3.2. The farmer/ farmers group should be genuinely interested to take up semi-commercial to commercial production of the fruit crops.
- 3.3. The proposed site should be suitable for the promotion of the crops (geo-climate suitability, irrigation water and market access). The selected site should be one of the best lands of the farmers which has to be fertile and near the house. (**Annexure 4** to be referred for altitude suitability).
- 3.4. The farmer/beneficiary or each farmer in the group/focus village should have sufficient area to cultivate at least 30 plants per orchard.
- 3.5. There should be at least 10 interested farmers for establishing commodity focus village.
- 3.6. The farmers/farmers group should bear the production cost except for free seed/seedlings or other technical support which will be extended by IHPP.

- 3.7. The farmers/farmers group farmers of focus village should attend trainings anywhere as and when planned by IHPP and DAS.
- 3.8. The farmers/farmers group farmers of focus village shall follow the full management plans and practices as advocated by IHPP and DAS.
- 3.9. The farmers/farmers group farmers of focus village should be willing to be farmer-farmer extension personnel as and when requested and share their skill and knowledge with other fellow farmers.

4. ROLES AND RESPONSIBILITIES OF STAKEHOLDERS

The roles and responsibilities of the stakeholders, among others will include those which are reflected in the SOP as **Annexure-1**.

4.1. SELECTED FARMERS AND FARMERS GROUP FARMERS OF FOCUS VILLAGE

- 4.1.1. Clearing of the site(s) identified for orchard establishment
- 4.1.2. Accompany the technical team and arrange enough labours at the time of field layout
- 4.1.3. Pit preparation with FYM as per the standard prescription within the prescribed time period
- 4.1.4. Fencing of the individual plants soon after the plantation using available local materials (bamboo mat, etc) and providing boundary fencing if possible
- 4.1.5. Follow and implement all the recommended practices as advocated by IHPP and DAS.
- 4.1.6. Timely reporting to the concerned Gewog Extension Officer and/or IHPP in case of any problem

4.2. GEWOG ADMINISTRATION

- 4.2.1. Provide administrative and technical support to the concerned Gewog Extension Officer
- 4.2.2. Monitor the ORPs and include these activities in the periodic progress reporting of the gewog

4.3.GEWOG AGRICULTURE SECTOR

- 4.3.1. Listing of probable beneficiaries/interested farmers and submission to DAO.
- 4.3.2. Preliminary feasibility study of outreach sites
- 4.3.3. Involve in site verification, orchard layout and planting with IHPP team
- 4.3.4. Ensure field preparation with FYM for planting by the farmers as per the technical recommendation
- 4.3.5. Advice on orchard management (Including fertilizer application, training and pruning, and top working)
- 4.3.6. Monitoring pests and diseases and recommendation of chemicals
- 4.3.7. Record keeping and submission of status report on biannual basis (Jan. & July.) to IHPP routing through the DAO (Report form to be provided by IHPP)

4.4. DZONGKHAG AGRICULTURE SECTOR

- 4.4.1. Involve in overall planning and implementing of ORP in the Dzongkha and liaise with IHPP
- 4.4.2. Submission of list of eligible beneficiaries/interested farmers to IHPP
- 4.4.3. Provide administrative and technical support to concerned extension agent
- 4.4.4. Monitor and follow up of the program
- 4.4.5. Submission of status report on biannual basis (Jun. & Dec.) to IHPP
- 4.4.6. Make application form available in the gewog offices

4.5. IHPP

- 4.5.1. Overall planning/co-ordination and implementation of ORP in the region
- 4.5.2. Develop a guideline on altitude based crop promotion to aid extension in selecting the sites.
- 4.5.3. Inform the IHPP project annual ORP plan to DAS the number of orchards to be established in respective districts for selection and listing of probable beneficiaries
- 4.5.4. Finalization of total number of farmers/beneficiaries based on list provided by the DAS or direct selection in each IHPP district

- 4.5.5. Technical assessment of the site and decide on the feasibility
- 4.5.6. Provide systematic training on orchard management practices to the ORP farmers
- 4.5.7. Provide one-time free seedlings and replenishment of dead seedlings based on the management by the beneficiary.
- 4.5.8. Record keeping including the GPS coordinates and map of the ORP
- 4.5.9. Co-ordinate impact study and generate report

5. ANNEXURES

Annexure 1: Standard Operation Procedure for establishing demo orchards and commodity focus village

SN	Activity/Action	Month
A. Site selection, training, layout and planting		
I. Demo Orchards		
1.	Dzongkhags to be intimated on the number of orchard of different fruits to be established by IHPP	July -August
2.	Receipt of nominated farmer's list from the DAS	August-September
3.	Site verification and Selection of farmers for demonstration orchard.	September-October
4.	1 st Training: Awareness and demonstration on pit preparation and planting (study tour to Wengkhar)	October
5.	Field layout for planting	November
6.	Field/Pit preparation with FYM	November-December
7.	2 nd training (planting, training and pruning) for selected famers	January/February
8.	Field training on Planting, mulching, irrigating and staking	February
9.	3 rd training (orchard management) for selected farmers	June
II. Commodity Focus Village		
1.	Dzongkhags to be intimated on the number of commodity focus village of fruits to be established by IHPP	July-August
2.	Receipt of list of potential village/ farmers group from the DAS	August-September
3.	Site verification and Selection of village/ farmers group	September
4.	Training: Awareness and demonstration on pit preparation and planting (study tour to Wengkhar) (1 representative from the group)	October
5.	Demonstration/training on layout, pit preparation and planting	November
6.	Field/Pit preparation with FYM	November-December
7.	Field training cum Planting, mulching, irrigating and staking	February
B. Monitoring and reporting		
1.	Monitoring pest and disease and observing status of tree by the IHPP	1 times a year (March-April or Oct-Dec)
2.	Pruning and training at least in 3 years	Once or twice in 3 year, Dec-February)
3.	Progress reporting by the EA to the DAO and by DAO to the IHPP	Biannually (Jan. & July)
4.	Compilation and submission of report for Annual Report publication by RCO	Yearly

ORP Form 1

Annexure 2: Details of the applicant farmer
(To be filled by the EA)

Date:

Details of applicant		Name of applicant	
Name of HH Head		House No.	
Gewog		CID No.	
Village		Contact No.	
Chewog		Family size	M= F=
Dzongkhag		Area available for orchard or vegetable development (Ac)	Acre
Thram No. (Attach a copy of Lag Thram)		Name of location	
Altitude (masl)	m		
Access to nearest road	From; ☐ Farm road, ☐ Feeder road, ☐ Highway		(Distance) Km

A. Name of the fruit crops recommended:

SN	Fruit crops	Qty (Nos)
1		
2		
3		
4		
5		
6		
7		
8		

Name and Signature
Applicant (Farmer)

Name: _____ Signature: _____

(Date: _____)

Gewog Extension Supervisor

Name: _____ Signature: _____

(Date: _____)

Dzongkhag Agriculture Officer

Name: _____ Signature: _____

(Date: _____)

Annexure 4: Suitable altitude range for different fruit crops and varieties

Fruit	Variety	Altitude(m) North face	Altitude(m) South face
Pear	Kosui	1600-2200m depend on fog	1800-2300m depend on fog
	Hosui	1700-2300	1800-2300
	Yakumo	1600-2200	1800-2300
	Chojuro	1700-2200	1800-2300
	Niitaka	1700-2200	1800-2300
	Shinko	1700-2300	1800-2300
	Meigetsu	1800-2300	1900-2300
Persimmon	Jiro	1600-2200	1700-2200
	Fuyu	1700-2200	1800-2300
	Zenjimaruru	1600-2200	1700-2300
	Hanagosho	1700-2200	1800-2300
Peach	Floridasun	1400-1800	1600-2000
	Kuratake	1600-2200	1700-2300
	Beauty cream	1700-2200	1800-2300
Plum	New castle	1500-2000	1600-2200
	Soldum	1600-2200	1800-2300
	Honey rosa	1600-2200	1800-2300
	Ohishiwase	1700-2200	1800-2300
	Santarosa	1800-2300	1900-2300
Kiwi	Wengkhar green	1600-2200	1700-2300
	Wengkhar yellow	1400-2200	1500-2300
Chestnut		1500-2200	1600-2300
Loquat	Mogi/Tanaka	1700-2000	1800-2000
Grapes	Asian type	1000-2300 below 800mm rainfall	
Apple	Anna	1400-1800	
Citrus	Unshu line variety	1500-1800	
	Ohta/Yoshida, Teisho ponkan, Clementine	1500-1700	
	Hayaka/Tsunokaori	1600-1800	
	Kumquat Marumi	1400-1700	
	Tarku/Local mandarin	1000-1400	
	Pumelo	500-1000	

Guidelines for Selection of Temperate Fruit Nursery Growers (Ver. 2: July 2017)

1. Identification of the nursery growers

- The nursery grower shall be identified either jointly by the District Agriculture Sector (DAS) and IHPP-JICA, ARDC, Bajo (here in after referred as “IHPP”) or directly by the IHPP.

1.1 Joint identification

- A list of potential nursery growers will be submitted by the DAS to IHPP.
- A joint field visit will be made by the Extension Agent (EA) and IHPP.
- Selection/disqualification will be made upon the confirmation of the fulfillment of the criteria during the joint field verification.

1.2 Direct selection by the IHPP

- Direct selection will be made by IHPP if the farmers are already;
 1. Has implemented/is implementing some activities with IHPP successfully.
 2. Is already a successful nursery grower but requiring technical support.

2. Prerequisite to be fulfilled by the selected Fruit crops nursery grower should;

- a. Is interested to establish fruit crops nursery.
- b. Has sufficient land in ideal location (not more than 30 min. walk from the road-end) with favorable geo-climatic condition required for successful fruit crops nursery establishment.
- c. Should dedicate fertile and good land for nursery development.
- d. Has sufficient irrigation water meeting nursery requirement.
- e. Is hard working, has sufficient farm labor and can dedicate sufficient time for nursery works.
- f. Ideally be a literate (read and write) to keep basic record

3. Responsibility of IHPP

- a. Identify the nursery growers either jointly with DAS or directly.
- b. Provide sufficient rootstock seeds and/or seedlings.
- c. Provide sufficient scion woods.
- d. Provide training to the selected nursery growers and equip him/her with necessary skills and knowledge.
- e. Provide technical support required beside the point 4.
- f. Monitor the nursery activity at least once in six months jointly with the EA.

4. Responsibility of the District Agriculture Sector

- a. Submit a list of interested farmers to the IHPP.
- b. Identify the nursery growers jointly with IHPP.
- c. Provide technical support to the nursery growers whenever necessary.
- d. Monitor the nursery activity biannual base (Jan. & July) and report to IHPP
 - a. e. Involve Bhutan Agriculture Food Regulatory Authority (BAFRA) for certification if required.

Guidelines for Selection of Vegetable Seed/Seedling Growers

(Ver. 1: July 2017)

1. Background

Royal Government of Bhutan's (RGoB) aims to achieve 95% vegetable self-sufficiency in 12th FYP which would require the need to proportionately increase production of vegetable seeds in the country. Currently, there are very few vegetable nurseries in the country and most of the vegetable seeds are imported. Therefore, it is very crucial to strengthen vegetable seed/seedling growers to sustain vegetable production and self-sufficiency in the country. One of the main objectives of IHPP-JICA is to strengthen vegetable production of quality horticulture seeds and seedlings in the West Central Region (WCR).

Quality seed is the basic and critical input for achieving the desired vegetable production. The availability of quality seeds in time at affordable price enables vegetable growers to grow their crop during the ideal time. The disease-free, healthy seed produce uniform, healthy and vigorous seedlings leading to higher yield and quality production. Hence, availability of quality seeds assumes paramount significance for achieving desirable results. Therefore, this guideline is aimed at strengthening technical capacities of seed/seedling growers. It entails the process of identification of beneficiaries (seed/seedling growers), roles and responsibilities of the stakeholders (Seed/seedling growers, District Agriculture Sector (DAS) and IHPP-JICA/ARDC Bajo) involved in strengthening of vegetable nurseries and production of quality seeds.

2. Identification of the seed/seedling growers

- The seed/seedling grower shall be identified either jointly by the District Agriculture Sector (DAS) and IHPP-JICA, ARDC, Bajo (here in after referred as "IHPP") or directly by the IHPP.

2.1 Joint identification

- a) A list of potential seed/seedling growers will be submitted by the DAS to IHPP.
- b) A joint field visit will be made by the Extension Agent (EA) and IHPP.
- c) Potential seed/seedling growers will be screened against the selection criteria
- d) Selection/disqualification will be made upon the confirmation of the fulfillment of the criteria during the joint field verification.

2.2 Direct selection by the IHPP

- Direct selection will be made by IHPP if the farmers have already implemented/is implementing some activities with IHPP successfully.

3. Prerequisite to be fulfilled by the selected vegetable seed/seedling grower should:

- a. Being a commercial vegetable crops seed/seedling grower.
- b. be a literate (read and write) to keep basic record
- c. be a hard working who can dedicate sufficient time for nursery works.
- d. possess sufficient land area in ideal location (not more than 30 min. walk from the road-end) with favorable geo-climatic condition required for the successful vegetable crops nursery production.
- e. dedicate fertile land for nursery development.
- f. have sufficient irrigation water to meet nursery requirement.

4. Responsibility of IHPP

- a. Identify the seed/seedling growers either jointly with DAS or directly.
- b. Provide sufficient seeds or seedlings.
- c. Provide sufficient high quality seeds to selected farmers in the beginning.
- d. Provide training to the selected nursery growers and equip them with necessary skills and knowledge.
- e. Provide technical support required beside the point 4.
- f. Monitor the seed/seedling growers' activity at least once in six months jointly with the EA.

5. Responsibility of the District Agriculture Sector

- b. Submit a list of interested farmers to the IHPP.
- c. Identify the nursery growers jointly with IHPP.
- d. Provide technical support to the nursery growers whenever necessary.
- e. Monitor the nursery activity on seasonal/biannual (July and January) basis and report to IHPP.
- f. Involve Bhutan Agriculture Food Regulatory Authority (BAFRA) for certification if required.