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5. 地域合同調整委員会 (Regional Project Coordination Committee : RJCC)

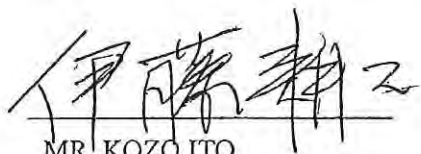
MINUTES OF MEETING  
OF  
THE PREPARATORY STUDY ON  
HORTICULTURE RESEARCH AND DEVELOPMENT PROJECT  
IN THE KINGDOM OF BHUTAN

In response to the request made by the Royal Government of Bhutan for the Horticulture Research and Development Project (hereinafter referred to as "the Project"), the Japan International Cooperation Agency (hereinafter referred to as "JICA") has sent a preparatory study team (hereinafter referred to as "the Team") headed by Mr. Kozo Ito from August 23<sup>rd</sup> to September 16<sup>th</sup>, 2009.

The purposes of the Team were to clarify the background of the request, to identify problems for the implementation of the Project and to study the feasibility of the proposed technical cooperation program.

During their stay in the Kingdom of Bhutan, the Team had a field survey, a series of meetings and exchanged views with the authorities concerned of the Government of the Kingdom of Bhutan.

As a result of these discussions, the Team and the concerned authorities of the Royal Government of Bhutan agreed upon the matters in the documents attached hereto.



MR. KOZO ITO

Team Leader

Preparatory Study Team

Japan International Cooperation Agency

Thimphu, September 9<sup>th</sup>, 2009



MR. SHERUB GYALTSHEN

Secretary

Ministry of Agriculture

Royal Government of Bhutan

## **THE ATTACHED DOCUMENT**

### **I. BACKGROUND OF THE PROPOSED PROJECT**

About 70 percent of the total population of Bhutan reside in rural areas and depend heavily on agriculture for their livelihood (Population and Housing Census, 2005). Due to mountainous geographical settings of Bhutan, however, the suitable land for cultivation is extremely small and a variety of crops planted is limited. With poor accessibility to the main roads in most of the rural areas, the majority of people are unable to sell their farm products to the markets, thus limiting the opportunity to earn cash income and improving their lives.

The Government of Japan and Japan International Cooperation Agency (JICA) implemented "Agricultural Research and Extension Support Project" in Mongar and Lhuentse from June 2004 to June 2009. The project helped agricultural extension officers and some farmers in eastern Bhutan acquire new agricultural technologies on horticulture and rice production.

Under the Tenth Five Year Plan, which aims at the reduction of poverty as a top priority, Ministry of Agriculture places an emphasis on the commercialization of crops. With the success of the above project, therefore, the Royal Government of Bhutan submitted an official request on the Japan's Technical Cooperation for Horticulture Research and Development Project in June 2008 to further expand the implementation of the project in next 5 years.

### **II. PURPOSE OF THE PREPARATORY STUDY**

The preparatory study had the following objectives:

1. To conduct meetings with the concerned authorities in order to clarify the background of the request, to identify problems for the implementation of the Project and to study the feasibility of the proposed technical cooperation program as a part of evaluation before starting the project.
2. To visit the proposed project sites in order to survey the current condition of sites and collect information for the study.
3. To agree to take measures for the smooth implementation of the Project by referring the results of a series of discussions described in the Minutes of Meeting.

### **III. TENTATIVE FRAMEWORK OF TECHNICAL COOPERATION**

Both sides drafted the Record of Discussions (hereinafter referred to as "the Draft R/D") describing the master plan, the implementation system, measures to be taken by each side as attached hereto as Appendix I. Both sides agreed on the above tentative



framework of the Project and drafted the Project Design Matrix (PDM) summarizing the contents of the Projects, and the Plan of Operation (PO), which are also attached hereto as Appendices II and III. The Result of Ex-ante Evaluation on PDM and PO are shown in Appendix IV.

#### **IV. MAJOR ISSUES DISCUSSED IN THE MEETING**

##### **1. BHUTANESE ORGANIZATIONS OF THE PROJECT**

The organization responsible for the Project is confirmed as the Department of Agriculture (DOA), Ministry of Agriculture (MOA). The organization for implementing the Project is confirmed as the Renewable Natural Resource Research and Development Center (RNRRDC)-Wengkhar.

##### **2. SITES OF THE PROJECT**

The main site is the RNRRDC-Wengkhar, located in Mongar Dzongkhag. The model sites are Lhuntse, Mongar, Trashiyangtse, Trashigang, Pemagatshel and Samdrup Jongkhar Dzongkhags.

Due to a long distance from RNRRDC-Wengkhar and safety reason, the Project limits the activities in Samdrup Jongkhar only in terms of inviting farmers and extension officers for technical training at RNRRDC-Wengkhar. Follow-up of those trained farmers and extension officers will be done by counterparts.

Bhutanese side requested to include Trongsa and Zhemgang Dzongkhags. Due to lack of available resource and information, it has been decided that the Project will not include these two Dzongkhags for the time being. However, the Project will collect information on two Dzongkhags by Mid-Term Review in order to explore a possibility of including these two Dzongkhags during the second half of the Project. The final decision, whether to include one of them or both, will be made based on information collected and the results of the Mid-Term Review.

##### **3. TERM OF THE COOPERATION**

The cooperation period of the Project is five (5) years, starting on the arrival of the Chief Adviser in January 2010.

##### **4. ADMINISTRATIVE ORGANIZATION**

Ministry of Agriculture will be responsible for the Project, and the Director of Department of Agriculture (DOA) will be appointed as the Project Director, who will bear overall responsibilities for the administration and implementation of the Project. The RNRRDC-Wengkhar will be in charge of implementing the Project. The Program



Director of RNRDC-Wengkhar will be appointed as the Project Manager, who is responsible for the managerial and technical issues of the Project. The Project Implementation Structure is attached hereto as Appendix V.

#### 5. OPERATIONAL AND TRAINING COSTS

Department of Agriculture has applied for the utilization of KR II fund to cover some of operational and training costs for the Project including ten (10) Elementary Service Personnel, seeds and seedlings.

#### 6. THE RESPONSIBILITY OF THE JAPANESE CHIEF ADVISOR

The Chief Adviser will provide necessary recommendations and advice to the Project Director and the Project Manager on any matters pertaining to the implementation of the Project.

#### 7. JOINT COORDINATING COMMITTEE (JCC)

For the effective and smooth implementation of technical cooperation for the Project, a Joint Coordinating Committee will be established at the national level whose functions and composition are described in the annex of the drafted R/D.

#### 8. REGIONAL PROJECT COORDINATION COMMITTEE

For the effective and timely implementation of activities of the Project, a Regional Project Coordination Committee will be formed in order to discuss the matters at the activity level when and if the need arises. The composition of the committee is described in Appendix VI.

#### 9. MEASURES TO BE TAKEN BY THE BOTH GOVERNMENTS

In accordance with the laws and regulations in force in Japan, JICA will take, at its own expense, necessary measures according to the normal procedures under the Colombo Plan Technical Cooperation Scheme, and the Bhutanese side will take necessary measures as the development partner as described in the drafted R/D.

#### 10. JOINT EVALUATION

The progress of the Project is periodically reported by the Project Management and monitored by the authorities concerned of the both sides during the implementation period. In order to examine the level of achievement of the Project, the Joint Evaluation Committee will be formulated and it conducts evaluation in the middle and during the last six months of the cooperation term as described in the drafted R/D.



## 11. PLAN OF OPERATION

The Project will prepare the Plan of Operation (PO) and Annual Plan of Operation (APO) according to the drafted PDM at the early stage of the Project with the consultation of Japanese long-term experts.

## 12. TRAINING PROGRAMS

Japanese side suggests that the Project include the components of farm economics, agro processing, and livelihood improvement in training programs for female extension officers.

Appendix I	Draft Record of Discussions (R/D)
Appendix II	Tentative Project Design Matrix (PDM)
Appendix III	Tentative Plan of Operation (PO)
Appendix IV	Result of Ex-ante Evaluation
Appendix V	Project Implementation Structure
Appendix VI	Regional Project Coordination Committee



(Draft)  
RECORD OF DISCUSSIONS  
BETWEEN  
JAPAN INTERNATIONAL COOPERATION AGENCY AND  
AUTHORITIES CONCERNED OF THE ROYAL GOVERNMENT OF BHUTAN  
ON JAPANESE TECHNICAL COOPERATION FOR  
THE HORTICULTURE RESEARCH AND DEVELOPMENT PROJECT  
IN THE KINGDOM OF BHUTAN

The Japan International Cooperation Agency (hereafter referred to as "JICA") through its Resident Representative of Bhutan Office, exchanged views and had a series of discussions with the Bhutanese authorities concerned with respect to desirable measures to be taken by JICA and Bhutanese Government for the successful implementation of the Horticulture Research and Development Project in the Kingdom of Bhutan.

As a result of the discussions, the JICA and the Bhutanese authorities concerned agreed on the matters referred to in the document attached hereto:

Thimphu, October, 2009

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MR. TOMOKI NITTA  
Resident Representative  
Bhutan Office  
Japan International Cooperation Agency

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MR. KARMA TSHITEEM  
Secretary  
Gross National Happiness Commission  
Royal Government of Bhutan

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MR. SHERUB GYALTSHEN  
Secretary  
Ministry of Agriculture  
Royal Government of Bhutan



## THE ATTACHHED DOCUMENT

### I. COOPERATION BETWEEN JICA AND BHUTANESE GOVERNMENT

1. The Royal Government of Bhutan will implement the Horticulture Research and Development Project in the Kingdom of Bhutan (hereinafter referred to as "the Project") in cooperation with JICA.
2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

### II. MEASURES TO BE TAKEN BY JICA

In accordance with the laws and regulations in force in Japan, JICA will take, at its own expense, the following measures according to the normal procedures under the Colombo Plan Technical Cooperation Scheme.

1. Dispatch of Japanese experts

JICA will provide the services of the Japanese experts as listed in Annex II.

2. Provision of machinery and equipment

JICA will provide machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Project within the budgetary allocation. The Equipment will become the property of the Royal Government of Bhutan upon being delivered C.I.F. (cost, insurance and freight) to the Bhutanese authorities concerned at the border of entry and/or airport of disembarkation. Bhutanese side has requested to deliver the Equipment up to the project site.

For the purchase of vehicles and other items restricted by the Royal Government of Bhutan, prior approval shall be obtained from the Ministry of Finance, Royal Government of Bhutan. Further, for the purchase of equipment or machines for the Project, the request will be submitted to JICA through the Gross National Happiness Commission.

3. Training of Bhutanese personnel in Japan and third countries

JICA will receive the Bhutan personnel connected with the Project for technical training in Japan and in the third countries.





### III: MEASURES TO BE TAKEN BY THE ROYAL GOVERNMENT OF BHUTAN

1. The Royal Government of Bhutan will take necessary measures to ensure that the self-reliant operation of the Project will be sustained during and after the period of Japanese technical cooperation, through full and active involvement in the Project by all related authorities, beneficiary groups and institutions.
2. The Royal Government of Bhutan will ensure that the technologies and knowledge acquired by the Bhutanese nationals as a result of Japanese technical cooperation will contribute to the economic and social development of the Kingdom of Bhutan.
3. The Royal Government of Bhutan will grant privileges, exemptions and benefits to the Japanese experts referred to in II-1 above and their families, which are no less favorable than those accorded to experts of third countries working in the Kingdom of Bhutan under the Colombo Plan Technical Cooperation Scheme.
4. The Royal Government of Bhutan will ensure that the Equipment referred to in II-2 above will be utilized effectively for the implementation of the Project in consultation with the Japanese experts referred to in II-1.
5. The Royal Government of Bhutan will take necessary measures to ensure that the knowledge and experience acquired by the Bhutanese personnel from technical training in Japan and in the third countries referred to in II-3 will be utilized effectively in the implementation of the Project.
6. In accordance with the laws and regulations in force in the Kingdom of Bhutan, the Royal Government of Bhutan will take necessary measures to provide the followings at its own expense:
  - (1) Services of the Bhutanese counterpart personnel and administrative personnel as listed in Annex III;
  - (2) Land, buildings and facilities as listed in Annex IV; and
  - (3) Supply or replacement of agricultural inputs, machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the Equipment provided by JICA.
7. In accordance with the laws and regulations in force in the Kingdom of Bhutan, the Royal Government of Bhutan will take necessary measures to meet the followings:
  - (1) Expenses necessary for transportation within the Kingdom of Bhutan of the Equipment referred to in II-2 above as well as for the installation, operation and maintenance thereof;
  - (2) Customs duties, internal taxes and any other charges, imposed in the Kingdom



- of Bhutan on the Equipment referred to in II-2 above; and
- (3) Running expenses necessary for the implementation of the Project.

#### IV. ADMINISTRATION OF THE PROJECT

1. The Director of Department of Agriculture, Ministry of Agriculture, as the Project Director, will bear overall responsibility for the administration and implementation of the Project.
2. The Programme Director of RNRDC- Wengkhar, Department of Agriculture, Ministry of Agriculture, as the Project Manager, will be responsible for the managerial and technical matters of the Project.
3. The Japanese Chief Advisor will provide necessary recommendations and advice to the Project Director and the Project Manager on any matters pertaining to the implementation of the Project.
4. The Japanese experts will give necessary technical guidance and advice to the Bhutanese counterpart personnel on technical matters pertaining to the implementation of the Project.
5. For the effective and successful implementation of technical cooperation for the Project, a Joint Coordinating Committee will be established whose functions and composition are described in Annex V.

#### V. JOINT EVALUATION

The first evaluation should be done before the Project starts. This evaluation should be carried out by the Preparatory Study Team. It mainly examines the validity of project implementation.

After the Project starts, evaluation will be conducted jointly by the two Governments through JICA and the Bhutanese authorities concerned. They will organize the Joint Evaluation Committee, which is composed of the Japanese Evaluation Team and the Bhutanese Evaluation Team in accordance with the Record of Discussions (R/D), the Project Design Matrix (PDM) and the Plan of Operation (PO). These activities include report analysis, field survey, and discussions with counterparts of the Project. The evaluation by the Joint Evaluation Committee should be done in the middle and during the last six months of the cooperation term in order to examine the level of achievement of the Project.

It is evaluated along the five (5) criteria such as Relevance, Effectiveness, Efficiency, Impact, and Sustainability.



1. Relevance

Relevance refers to the validity of the Project purpose and the overall goal in connection with the development policy of the Bhutanese Government as well as the needs of beneficiaries.

2. Effectiveness

Effectiveness refers to the extent to which the expected benefits of the Project have been achieved as planned, and examines if the benefit was brought about as a result of the Project (not as that of external factors).

3. Efficiency

Efficiency refers to the productivity of the implementation process, and examines if the input of the Project was efficiently converted into the output.

4. Impact

Impact refers to direct and indirect, positive and negative impact caused by implementing the Project, including the extent to which the overall goal has been attained.

5. Sustainability

Sustainability refers to the extent to which the Bhutanese Government can further develop the Project, and the benefits generated by the Project can be sustained under the policies, technologies, systems and financial state of the Bhutanese Government.

## **VI. CLAIMS AGAINST JAPANESE EXPERTS**

The Royal Government of Bhutan undertakes to bear claims, if any arises, against the Japanese experts engaged in technical cooperation for the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in the Kingdom of Bhutan except for those arising from the willful misconduct or gross negligence of the Japanese experts.

## **VII. MUTUAL CONSULTATION**

There will be mutual consultation between JICA and Bhutanese Government on any major issues arising from, or in connection with this attached document.

## **VIII. MEASURES TO PROMOTE UNDERSTANDING OF AND SUPPORT FOR THE PROJECT**

For the purpose of promoting support for the Project among the people of the Kingdom of Bhutan, the Royal Government of Bhutan will take appropriate measures to make the Project widely known to the people of the Kingdom of Bhutan.



## IX. TERM OF COOPERATION

The duration of the technical cooperation for the project under this attached document will be five (5) years from January 2010.

- |           |  |
|-----------|--|
| Annex I   | Master Plan  |
| Annex II  | List of Japanese Experts                                   |
| Annex III | List of Bhutanese Counterpart and Administrative Personnel |
| Annex IV  | List of Land, Buildings and Facilities                     |
| Annex V   | Joint Coordinating Committee                               |



## Annex I Master Plan

### 1. Overall Goal

Horticulture becomes more popular as a source of income in the target area.

### 2. Project Purpose

The trained and extended farmers practice appropriate technologies for commercialization of horticulture.

### 3. Tentative Outputs of the Project

Horticulture farming patterns in the target area are identified based on production and market potential.

Technical training system on horticulture for extension officers and farmers is strengthened in RNRDRC-Wengkhar

The structure for providing seeds and seedlings to training participants is established in RNRDRC-Wengkhar and nursery farmers.

### 4. Activities of the Project

1-1 Identify appropriate horticulture crops according to the zones (600m to 2,000m above sea level) by reviewing the results of AREP.

1-2 Conduct surveys on horticulture marketing focusing on areas and crops with potential of commercialization.

1-3 Identify trial marketing sites and crops based on the surveys.

1-4 Form farmers' associations in the sites and initiate trial marketing through the associations.

1-5 Formulate and update a horticulture development guideline/manual.

2-1 Review the previous training programs on horticulture in RNRDRC-Wengkhar.

2-2 Prepare the plans and teaching materials for new training programs on horticulture for extension officers and farmers.

2-3 Implement the trainings in RNRDRC-Wengkhar.

2-4 Facilitate farmer to farmer extension.

2-5 Follow up and monitor the trained extension officers and farmers on the sites.

3-1 Develop the production system for seeds and seedlings at RNRRC Wengkhar for training participants.

3-2 Strengthen production of seeds and seedlings at private nurseries for commercialization.

### 5. Sites of the Project

#### (1) Main Site

RNRDRC-Wengkhar (Mongar)

#### (2) Model Sites

Mongar, Lhuntse, Trashiyangtse, Trashigang, Pemagatshel, Samdrup Jongkhar



## Annex II List of Japanese Experts

### 1. Long-term experts

- (1) Chief Adviser / Horticulture
- (2) Training/ Coordination
- (3) etc.

### 2. Short-term experts

- (1) Marketing
- (2) Agro preservation/processing
- (3) etc.

#### Note:

The terms of assignment of short-term experts will be decided through mutual consultations considering the progress of the Project.



### **Annex III List of Bhutanese Counterpart and Administrative Personnel**

1. Organization responsible for the Project: Ministry of Agriculture (MOA)
  
2. Organizations for implementing the Project
  - (1) Renewable Natural Resource Research and Development Centre-Wengkhar (RNRDC-Wengkhar)
  - (2) Lhuntse Dzongkhag
  - (3) Mongar Dzongkhag
  - (4) Trashiyangtse Dzongkhag
  - (5) Trashigang Dzongkhag
  - (6) Pemagatshel Dzongkhag
  - (7) Samdrup Jongkhar Dzongkhag
  
3. Project Director:  
Director of Department of Agriculture, Ministry of Agriculture.
  
4. Project Manager:  
Program Director of RNRDC- Wengkhar, Department of Agriculture,  
Ministry of Agriculture
  
5. Counterpart Personnel:  
Research officers of RNRDC-Wengkhar, Department of Agriculture,  
Ministry of Agriculture
  
6. Other personnel mutually agreed upon as necessary



#### **Annex IV List of Land, Buildings and Facilities**

1. Land, building and facilities necessary for the implementation of the Project
2. Rooms and space necessary for installation and storage of equipment
3. Office space and necessary facilities for the Japanese experts and related staff members
4. Other facilities mutually agreed upon as necessary





## Annex V Joint Coordinating Committee

The Joint Coordinating Committee (JCC) composed of those members as listed below will meet at least once a year and whenever the necessity arises.

### 1. Function

- (1) To authorized an annual work plan of operation in accordance with this framework and the Record of Discussions (R/D) which will be concluded between the Governments of Bhutan and Japan.
- (2) To review overall progress of the technical cooperation program in accordance with this framework and the R/ D.
- (3) To review measures taken by the Government of Japan
- (4) To review measures taken by the Royal Government of Bhutan
- (5) To examine and endorse the joint Evaluation report during the project
- (6) To give recommendations to both the Royal Government of Bhutan and Government of Japan for the smooth and successful implementation of the project.

### 2. Composition

- (1) Chairperson:

Secretary, Ministry of Agriculture

- (2) Members

#### 1) Bhutanese Side:

- Director of Department of Agriculture (DOA) as a project director
- Program Director of Renewable Natural Resources Research and Development (RNRRDC)-Wengkhar, DOA as a project manager
- Chief Horticulture Officer, MOA
- Chief Planning Officer of Policy and Planning Division, MOA
- Chief Marketing Officer of Agricultural Marketing Services, MOA
- Director of Council for Renewable Natural Resources Research of Bhutan (CORRB)
- Representative from GHNC

#### 2) Japanese side:

- Chief Adviser



- Long-term Experts assigned to the Project
- Other Japanese experts and personnel concerned dispatched by JICA, as and when required
- Representatives, JICA Bhutan Office

Notes:

1. Officials of the Embassy of Japan in India may attend the JCC meetings as observers, as and when required.
2. Persons who are nominated by the chairperson may attend the JCC meetings as observers, as and when required.



Appendix II Tentative PDM

Project Design Matrix (Version 0) drafted by RNRDC- Wengkhār/MoA and the preparatory study team on September 8<sup>th</sup> 2009.

Name of the Project: Horticulture Research and Development Project in the Kingdom of Bhutan (HRDP)

Project Period: January 2010 – January 2015

Target area: Mongar, Lhuntse, Trashiyangtse, Trashigang, Pemagatshel, Samdrup Jongkhār

Target group: Concerned government staff and horticulture farmers in the target area.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>Overall Goal</b> Horticulture becomes more popular as a source of income in the target area.</p>	<p>1. The trained and extended farmers in the project increase income by XX % by 2020. 2. XXXXX of new farmers is trained by RC Wengkhār and extended by the trained farmers by 2020.</p>	<p>Dzongkhag agricultural annual reports in the target area</p>	
<p><b>Project Purpose</b> The trained and extended farmers practice appropriate technologies for commercialization of horticulture.</p>	<p>1. Horticulture is practiced in XX % of arable land in the target area. 2. XX % of the trained farmers prepares the model farms and conduct farmer to farmer extension. 3. Selected trained and extended farmers increase their income by XX %.</p>	<p>1. Project reports 2. Dzongkhag agricultural annual reports in the target area</p>	<p>1. Road construction in the target area is completed in 10 years.</p>
<p><b>Outputs</b> 1. Horticulture farming patterns in the target area are identified based on production and market potential. 2. Technical training system on horticulture for extension officers and farmers is strengthened in RNRDC-Wengkhār 3. The structure for providing seeds and seedlings to training participants is established in RNRDC-Wengkhār and nursery farmers.</p>	<p>1-1 A horticulture development guideline/manual is produced. 2-1 XX % of trained farmers applies key training contents in the fields. 2-2 XX % of trained extension officers extends key training contents. 2-3 Evaluation by the training participants improves by XX %. 3-1 100% of trained farmers is supplied with seed and seedlings as specified in training plans.</p>	<p>1. The guideline/manual 2-1 Project monitoring reports 2-2 Project training reports 2-3 Project monitoring reports 3. Project training reports</p>	<p>1. Outbreak of pests and diseases does not occur. 2. Significant changes in market do not occur. 3. Extreme natural calamities do not occur.</p>
<p><b>Activities</b> 1-1 Identify appropriate horticulture crops according to the zones (600m to 2,000m above sea level) by reviewing the results of AREP. 1-2 Conduct surveys on horticulture marketing focusing on areas and crops with potential of commercialization.</p>	<p><b>Inputs</b> <b>Japanese Side</b> 1. Dispatch of experts A. Long-term (1) Chief Adviser / Horticulture (2) Training/ Coordinator</p>		<p>1. Transfer of major counterpart does not occur.</p>

<p>1-3 Identify trial marketing sites and crops based on the surveys.</p> <p>1-4 Form farmers' groups/cooperatives in the sites and initiate trial marketing through the organizations.</p> <p>1-5 Formulate and update a horticulture development guideline/manual.</p>	<p>(3) etc.</p> <p><b>B. Short-term</b></p> <p>(1) Marketing</p> <p>(2) Agro preservation/processing</p> <p>(3) etc.</p> <p>2. Training of counterparts</p> <p>3. Provision of equipments</p> <p>4. Allocation of operational costs for the Project</p> <p><b>Bhutanese Side</b></p> <p>1. Assignment of counterpart personnel and administrative staff</p> <p>(1) Project Director</p> <p>(2) Project Manager</p> <p>(3) Counterpart personnel</p> <p>(4) Administrative staff</p> <p>(5) Secretaries, drivers for Japanese experts and other staff accordingly</p> <p>2. Provision of land, building, and other necessary facilities</p> <p>3. Allocation of operational costs for the Project, e.g. 10 ESP.</p> <p>4. Allocation of training costs e.g. seeds, seedlings, per diem, etc.</p>	<p>2-1 Review the previous training programs on horticulture in RNRDDC-Wengkhaz.</p> <p>2-2 Prepare the plans and teaching materials for new training programs on horticulture for extension officers and farmers.</p> <p>2-3 Implement the trainings in RNRDDC-Wengkhaz.</p> <p>2-4 Facilitate farmer to farmer extension.</p> <p>2-5 Follow up and monitor the trained extension officers and farmers on the sites.</p>	<p>3-1 Develop the production system for seeds and seedlings at RNRDDC-Wengkhaz for training participants.</p> <p>3-2 Strengthen production of seeds and seedlings at community nurseries for commercialization.</p>
<p><b>Preconditions</b></p> <p>1. Inclusion of the project activities into regular annual Dzongkhak / Geog plans is ensured.</p> <p>2. Human resources in RNRDDC-Wengkhaz are sufficient.</p> <p>3. The farmers in the target area do not oppose the project activities.</p> <p>4. The dormitory construction of RNRDDC-Wengkhaz should be completed for the use of the project.</p>			

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**Appendix III Tentative PO  
Plan of Operation**

**Project Title: Horticulture Research and Development Project in the Kingdom of  
Bhutan (HRDP)**

Project Period	2010												2011												2012												2013												2014												2015											
	1Q			2Q			3Q			4Q			1Q			2Q			3Q			4Q			1Q			2Q			3Q			4Q			1Q			2Q			3Q			4Q																										
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Target Area: Mongar, Lhuntse, Trashiyangtse, Trashigang, Pemagatshel, Samdrup Jongkhar	JCC																																																																							
Target Group: Concerned government staff and horticulture farmers in the target area	RPCCM																																																																							
Outputs and Activities	Joint Evaluation																																																																							
Output 0 The baseline of the objectively verifiable indicators is set.	JICA Experts in charge																																																																							
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Output 3 The structure for providing seeds and seedlings to training participants is established in RNRDC-Wengkhar and nursery farmers.																																																																								
3-1 Develop the production system for seeds and seedlings at RNRDC-Wengkhar for training participants.																																																																								
3-2 Strengthen production of seeds and seedlings at community nurseries for commercialization.																																																																								

Legend:

C/P: Counterpart Personnel

JCC: Joint Coordination Committee

RPCCM: Regional Project Coordination Committee Meeting

## Appendix IV Result of Ex-ante Evaluation

The implementation of the project is justified as a result of ex-ante evaluation from the stand points of the DAC evaluation criteria<sup>1</sup> in line with the project cycle management method.

### 1. Relevance

The priority and necessity of the project is high and it is appropriate as a means of addressing issues. Therefore, relevance of the project is regarded high.

#### 1.1 Consistency with the policy and institutions of RGOB

- The overall goal and purpose of the project are both consistent with the policy and institutions of the Royal Government of Bhutan (RGOB). The 10<sup>th</sup> Five Year Plan for national development is targeting poverty reduction, and the objectives of the 10<sup>th</sup> Five Year Plan for Ministry of Agriculture (MoA) include the enhancement of rural livelihood sustainably and food security. The project can contribute to achieve these targets through promoting production and commercialization of horticulture crops.
- The project activities well align with the institutions of RGOB. One of research and extension tools to be employed in the project is Research Outreach Program (ROP), which is officially mainstreamed as an effective extension method in MoA.

#### 1.2 Consistency with Japan' foreign aid policy for Bhutan

- The guideline for country assistance program for the kingdom of Bhutan and JICA's plan for country-specific program implementation for the kingdom of Bhutan prioritize agricultural promotion in remote areas. The project is designed following the priority.

#### 1.3 Appropriateness of target area and target group

- The all six Dzongkhags in the eastern region are chosen as the target area of the project. As five of the six Dzongkhags are listed in worst 10 poverty Dzongkhags<sup>2</sup>, the target area selection is reasonable in the country aiming at poverty reduction.
- The preferable staple food of the rural community in the target area is rice. However, not everywhere is suitable for rice cultivation, so in those areas there is high demand of producing cash crops to purchase rice. The project addresses the needs by promoting production and commercialization of horticulture crops.

<sup>1</sup> Relevance, Effectiveness, Efficiency, Impact, and Sustainability

<sup>2</sup> Ranking of poverty ratio. Poverty line is 1,114.15Nu/person/month.



## 1.4 Relevance as a means of addressing development issues

### (1) Justification of continuous cooperation

- The project is designed fully reflecting lessons learned in Agricultural Research and Extension Support Project in Lhuntse and Mongar (AREP). First, the project continues to utilize the same extension approaches which were already verified in AREP; i) training and farmer to farmer extension, ii) ROP. Second, the project incorporates new components in response to needs of farmers shown in the cooperation period of AREP; i) production of seeds and seedlings, ii) post harvest activities such as agro preservation/processing and marketing.

### (2) Relationship with other projects

- There is a possibility of collaboration and complementation with other projects such as other JICA projects; i) Strengthening of Farm Mechanization Project, ii) Local Governance and Decentralization Project) and other donor projects; Agricultural Marketing and Enterprise Promotion Program (AMEPP). Regarding similar technical cooperation projects, UNDP has implemented an integrated farming promotion project. However, duplication is regarded negligence, since its target area is limited within only two Geogs in Mongar.

## 2. Effectiveness

Effectiveness is regarded high, since necessary outputs to achieve the project purpose are appropriately planned and important assumptions to achieve the project purpose are expected to be met.

### 2.1 Achievement of the project purpose

- The all three outputs contribute to the achievement of the project purpose. First, horticulture farming patterns in the target area are identified based on production and market potential as Output 1. Based on Output 1, appropriate horticulture crops training are prepared and conducted for extension officers and selected farmers to promote farmer to farmer extension as a process of strengthening a training system in RNRRC-Wengkhar in Output 2. Seeds and seedlings to be provided to training participants are produced under Output 3. In this way, the project purpose “The trained and extended farmers practice appropriate technologies for commercialization of horticulture.” is to be accomplished based on the three outputs.
- Objectively verifiable indicators (OVI) to verify the achievement of the project purpose are all numerical targets, so these targets should be set taking further information into consideration after launching the project.



- The three important assumptions to achieve the project purpose, i) Outbreak of pests and diseases does not occur, ii) Significant changes in market do not occur, iii) Extreme natural calamities do not occur, are likely to be met.

### 3. Efficiency

Efficiency of the project is expected to be high due to reasonably planned activities and inputs and also cost efficiency.

#### 3.1 Effectiveness of inputs and activities

- The activities for the project are appropriately planned fully utilizing the experiences of ex-counterpart personnel and an ex-JICA expert in AREP. The inputs are also efficiently projected based on AREP's experiences.
- In August 2009, it was officially decided that RNRRC Wengkhar, the key counterpart organization, would be expansively reorganized as Renewable Natural Resource Research and Development Center Wengkhar (RNRDC Wengkhar). RNRDC Wengkhar will be incorporated into DOA and bear a new responsibility to promote extension in the eastern region. As a result, a structure for seamlessly implementing research and extension is to be established in RNRDC Wengkhar and its superior organization, DOA.
- Three OVIs out of four for the outputs are numerical targets, so these targets should be set taking into account further information after commencing the project.
- The only one important assumption to achieve the outputs, transfer of major counterpart does not occur, is likely to be met.

#### 3.2 Cost-efficiency

- By maximum utilization of the inputs for and outputs from AREP, high cost-efficiency is expected in the project. The major inputs consist of buildings for RNRRC Wengkhar, vehicles, office equipment and the outputs correspond such as trained counterpart personnel and farmers. All these inputs and outputs will be fully exploited in the project.

### 4. Impact

Positive impacts are expected on policy, regulation, socioeconomy, technology, and environment, although there are points of concern to the achievement of the overall goal. No negative impact is foreseen.



#### 4.1 Overall goal

- As shown in 5. Sustainability, there are some points of concern in the policy and financial aspects to attain the overall goal.
- Two OVIs for the overall goal are both numerical targets, so these targets should be set considering further information after starting the project.
- The important assumptions to achieve the overall goal, i) Roads construction in the target area is completed in 10 years, is likely to be met.

#### 4.2 Impact on policy

- If the beneficiary farmers and MoA recognize the potential of crop varieties to be developed and extended by the project, it is expected that those crops will be included in One Geog Three Products (OGTP) in corresponding Geogs in the target area.

#### 4.3 Impact on institutions

- If DOA recognizes the effectiveness of the farmer to farmer extension system to be employed in the project, mainstreaming of the system in DOA and its application to other regions is expected.

#### 4.4 Impact on socioeconomy

- As a result of horticulture promotion, improvement in nutrition is anticipated on people in the target area.

#### 4.5 Impact on knowledge and technology

- If the potential of technologies and crop varieties to be developed and extended by the project is clearly shown, it may lead dissemination of those technologies and varieties outside the target area through beneficiary farmers and DOA.

#### 4.6 Impact on environment

- Promotion of fruits cultivation may contribute to soil preservation on steep slopes.

### 5. Sustainability

It seems that no significant factor which may affect continuity of farmers' activities. However, there are points of concern in policy and financial aspects for counterpart organizations to continue the project activities and extend the project results to outside the target area.

#### 5.1 Political aspect



- Vision 2020, the long-term development policy of RGOB, pictures a part of economic future as “well-balanced and sufficiently diversified by a thriving horticulture and organic based high-valued agriculture”. Therefore, the political background to continue and extend the project activities will be maintained.
- Dzongkhag agriculture officers and agriculture extension officers in the target area will decide whether continue and extend the project activities or not based on the result of the project. Therefore, it is important to clearly show the high potentiality of varieties and technologies introduced in the project before its termination.

#### **5.2 Financial aspect**

- The capital budget of RGOB is mostly tapped from overseas funds including grants and soft loans. The financing has been successful recently, and therefore significant deficit of the capital budget is not expected.
- The farmers in Bhutan generally use minimal pesticide and chemical fertilizer. Since they practice financially low input agriculture, sustainability of the financial aspect in farmers is high.
- RGOB has a principle to reduce training costs in its capital budget. This principle may be a constraint on implementing training for extension officers and farmers after the cooperation period.

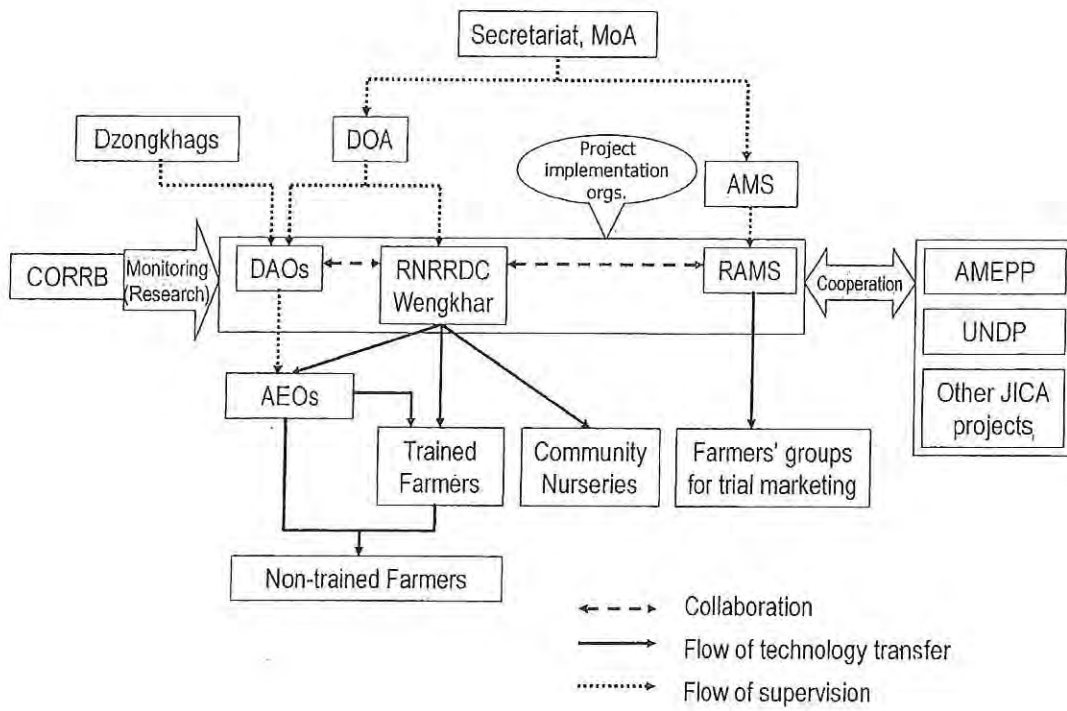
#### **5.4 Technical aspect**

- Technologies and knowledge transferred in AREP have been utilized by many extension officers and farmers, so acceptability of these technologies and knowledge is regarded high. However, in case their level of proficiency is low, the technologies and knowledge have been lost. It is important to ensure the mastery of technologies to be transferred in the training programs by following up training participants continuously.

(end)



## Appendix V Project Implementation Structure



## Appendix VI Regional Project Coordination Committee

(1) Chairperson:

Dzongdags

(each Dzongda will assume responsibility on a rotation basis)

(2) Secretary:

Project Manager

(3) Members:

1) Bhutanese Side:

- Program Director of Renewable Natural Resources Research and Development (RNRRDC)-Wengkhar, DOA
- RNRRDC-Wengkhar relevant C/P representatives
- Representatives from CMU
- Agriculture Officer of Lhuntse, Mongar, Trashiyangtse, Trashigang, Pernagatshel and Samdrup Jongkhar Dzongkghags
- Regional Marketing Councilor of Agriculture Marketing Services, MOA

2) Japanese side:

- JICA Experts

(4) Observers:

- Program Director of Agriculture Marketing Enterprise Promotion Program (AMEPP), IFAD
- UNDP
- SNV
- Druk Seed
- JICA Bhutan Office



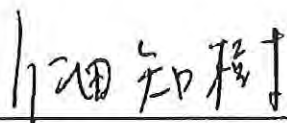
RECORD OF DISCUSSIONS  
BETWEEN  
JAPAN INTERNATIONAL COOPERATION AGENCY AND  
AUTHORITIES CONCERNED OF THE ROYAL GOVERNMENT OF BHUTAN  
ON JAPANESE TECHNICAL COOPERATION FOR  
THE HORTICULTURE RESEARCH AND DEVELOPMENT PROJECT  
IN THE KINGDOM OF BHUTAN

The Japanese Preparatory Survey Team (hereinafter referred to as "the Team") organized by Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Kozo Ito, visited the Kingdom of Bhutan (hereinafter referred to as "Bhutan") from August 23<sup>rd</sup> 2009 to September 16<sup>th</sup> 2009 for the purpose of working out the details of the technical cooperation project concerning the Horticulture Research and Development Project in Bhutan.

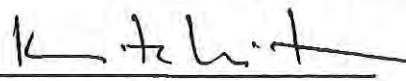
During its stay in Bhutan, the Team exchanged views and had a series of discussions with the Bhutanese authorities concerned with respect to desirable measures to be taken by JICA and The Royal Government of Bhutan for the successful implementation of the Horticulture Research and Development Project in the Kingdom of Bhutan.

As a result of the discussions, JICA and the Bhutanese authorities concerned agreed on the matters referred to in the document attached hereto.

Thimphu, March 16th, 2010



TOMOKI NITTA  
Resident Representative  
Bhutan Office  
Japan International Cooperation Agency



KARMA TSHITEEM  
Secretary  
Gross National Happiness Commission  
Royal Government of Bhutan



CHENCHO NORBU  
Director  
Department of Agriculture  
Ministry of Agriculture and Forests  
Royal Government of Bhutan

## THE ATTACHHED DOCUMENT

### I. COOPERATION BETWEEN JICA AND THE ROYAL GOVERNMENT OF BHUTAN

1. The Royal Government of Bhutan will implement the Horticulture Research and Development Project in the Kingdom of Bhutan (hereinafter referred to as "the Project") in cooperation with JICA.
2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

### II. MEASURES TO BE TAKEN BY JICA

In accordance with the laws and regulations in force in Japan, JICA will take, at its own expense, the following measures according to the normal procedures under the Colombo Plan Technical Cooperation Scheme.

1. Dispatch of Japanese experts  
JICA will provide the services of the Japanese experts as listed in Annex II.
2. Provision of machinery and equipment  
JICA will provide machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Project within the budgetary allocation. The Equipment will become the property of the Royal Government of Bhutan upon being delivered C.I.P. (carriage and insurance paid To) to the Bhutanese authorities concerned.

For the purchase of vehicles and other items restricted by the Royal Government of Bhutan, prior approval shall be obtained from the Ministry of Finance, Royal Government of Bhutan. Further, for the purchase of equipment or machinery for the Project, the request will be submitted to JICA through the Gross National Happiness Commission (hereinafter referred to as "GNHC").

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3. Training of Bhutanese personnel in Japan and third countries  
JICA will receive the Bhutan personnel connected with the Project for technical training in Japan and in the third countries.

### III. MEASURES TO BE TAKEN BY THE ROYAL GOVERNMENT OF BHUTAN

1. The Royal Government of Bhutan will take necessary measures to ensure that the self-reliant operation of the Project will be sustained during and after the period of Japanese technical cooperation, through full and active involvement in the Project by all related authorities, beneficiary groups and institutions.
2. The Royal Government of Bhutan will ensure that the technologies and knowledge acquired by the Bhutanese nationals as a result of Japanese technical cooperation will contribute to the economic and social development of the Kingdom of Bhutan.
3. The Royal Government of Bhutan will grant privileges, exemptions and benefits to the Japanese experts referred to in II-1 above and their families, which are no less favorable than those accorded to experts of third countries working in the Kingdom of Bhutan under the Colombo Plan Technical Cooperation Scheme.
4. The Royal Government of Bhutan will ensure that the Equipment referred to in II-2 above will be utilized effectively for the implementation of the Project in consultation with the Japanese experts referred to in II-1 above.
5. The Royal Government of Bhutan will take necessary measures to ensure that the knowledge and experience acquired by the Bhutanese personnel from technical training in Japan and in the third countries referred to in II-3 above will be utilized effectively in the implementation of the Project.
6. In accordance with the laws and regulations in force in the Kingdom of Bhutan, the Royal Government of Bhutan will take necessary measures to provide the followings at its own expense:
  - (1) Services of the Bhutanese counterpart personnel and administrative personnel as listed in Annex III;
  - (2) Land, buildings and facilities as listed in Annex IV; and

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- (3) Supply or replacement of agricultural inputs, machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the Equipment provided by JICA.
7. In accordance with the laws and regulations in force in the Kingdom of Bhutan, the Royal Government of Bhutan will take necessary measures to meet the followings:
    - (1) Expenses necessary for transportation within the Kingdom of Bhutan of the Equipment referred to in II-2 above as well as for the installation, operation and maintenance thereof;
    - (2) Customs duties, internal taxes and any other charges, imposed in the Kingdom of Bhutan on the Equipment referred to in II-2 above; and
    - (3) Running expenses necessary for the implementation of the Project.

#### IV. ADMINISTRATION OF THE PROJECT

1. The Director of Department of Agriculture, Ministry of Agriculture and Forests, as the Project Director, will bear overall responsibility for the administration and implementation of the Project.
2. The Program Director of Renewable Natural Resource Research and Development Center (hereinafter referred to as "RNRRDC- Wengkhar"), Department of Agriculture, Ministry of Agriculture and Forests, as the Project Manager, will be responsible for the managerial and technical matters of the Project.
3. The Japanese Chief Advisor will provide necessary recommendations and advice to the Project Director and the Project Manager on any matters pertaining to the implementation of the Project.
4. The Japanese experts will give necessary technical guidance and advice to the Bhutanese counterpart personnel on technical matters pertaining to the implementation of the Project.
5. For the effective and successful implementation of technical cooperation for the Project, a Joint Coordinating Committee will be established whose functions and composition are described in Annex V.

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## **V. JOINT EVALUATION**

Evaluation will be conducted jointly by JICA and the Bhutanese authorities concerned. They will organize the Joint Evaluation Committee, which is composed of the Japanese Evaluation Team and the Bhutanese Evaluation Team. The evaluation includes report analysis, field survey, and discussions with counterparts of the Project. The evaluation by the Joint Evaluation Committee should be done in the middle and during the last six months of the cooperation term in order to examine the level of achievement of the Project.

## **VI. CLAIMS AGAINST JAPANESE EXPERTS**

The Royal Government of Bhutan undertakes to bear claims, if any arises, against the Japanese experts engaged in technical cooperation for the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in the Kingdom of Bhutan except for those arising from the willful misconduct or gross negligence of the Japanese experts.

## **VII. MUTUAL CONSULTATION**

There will be mutual consultation between JICA and The Royal Government of Bhutan on any major issues arising from, or in connection with this attached document.

## **VIII. MEASURES TO PROMOTE UNDERSTANDING OF AND SUPPORT FOR THE PROJECT**

For the purpose of promoting support for the Project among the people of the Kingdom of Bhutan, the Royal Government of Bhutan will take appropriate measures to make the Project widely known to the people of the Kingdom of Bhutan.



## **IX. TERM OF COOPERATION**

The duration of the technical cooperation for the project under this attached document will be five (5) years from the next day of the arrival of first Japanese expert in Bhutan .

- Annex I     Master Plan
- Annex II     List of Japanese Experts
- Annex III    List of Bhutanese Counterpart and Administrative Personnel
- Annex IV     List of Land, Buildings and Facilities
- Annex V     Joint Coordinating Committee

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## **Annex I Master Plan**

### **1. Overall Goal**

Horticulture becomes more popular as a source of income in the target area.

### **2. Project Purpose**


Both directly and indirectly trained farmers practice appropriate technologies for commercialization of horticulture.

### **3. Outputs of the Project**

- (1) Horticulture farming patterns in the target area are identified based on production and market potential.
- (2) The quality of technical training system on horticulture for extension officers and farmers is upgraded in Renewable Natural Resource Research and Development Center (hereinafter referred to as "RNRDC- Wengkhar").
- (3) The structure for providing seeds and seedlings to training participants is established in RNRDC-Wengkhar and nursery farms.

### **4. Activities of the Project**

- (1-1) Conduct baseline surveys on the rural society and the market.
- (1-2) Identify the trial marketing sites considering the direction forwards based on the identified appropriate horticulture crops according to the zones (600m to 2,000m above sea level) by reviewing the results of Agricultural Research and Extension Support Project (hereinafter referred to as "AREP") and the surveys on horticulture marketing focusing on areas and crops with potential of commercialization.
- (1-4) Strengthen farmers' associations in the sites and initiate trial marketing through the associations.
- (1-5) Formulate and update a horticulture development guideline/manual.
- (2-1) Review the previous training programs on horticulture in RNRDC-Wengkhar.
- (2-2) Prepare the plans and teaching materials for new training programs on horticulture for extension officers and selected farmers.
- (2-3) Implement the trainings in RNRDC-Wengkhar.
- (2-4) Facilitate farmer to farmer extension.



- (2-5) Follow up and monitor the trained extension officers and farmers on the sites.
- (3-1) Develop the production system for seeds and seedlings at RNRRDC-Wengkhar for training participants.
- (3-2) Select nursery farmers and strengthen production of seeds and seedlings in their nurseries for commercialization.

5. Sites of the Project

(1) Main Site

RNRRDC-Wengkhar (Mongar)

(2) Target Area

Mongar, Lhuntse, Trashiyangtse, Trashigang, Pemagatshel, Samdrup Jongkhar

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## **Annex II List of Japanese Experts**

### **1. Long-term experts**

- (1) Chief Adviser / Horticulture**
- (2) Coordination / Farmers Organization**
- (3) Training / Extension**

### **2. Short-term experts**

- (1) Marketing**
- (2) Agro preservation/processing**
- (3) Other relevant fields**

#### **Note:**

- 1. The terms of assignment of short-term experts will be decided through mutual consultations considering the progress of the Project.**
- 2. Other short-term experts may be dispatched according to the necessity of the Project by mutual consultation.**

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### **Annex III List of Bhutanese Counterpart and Administrative Personnel**

1. Organization responsible for the Project: Ministry of Agriculture and Forests (MOAF)
2. Organizations for implementing the Project
  - (1) Renewable Natural Resource Research and Development Centre-Wengkhar (RNRDC-Wengkhar)
  - (2) Lhuntse Dzongkhag
  - (3) Mongar Dzongkhag
  - (4) Trashiyangtse Dzongkhag
  - (5) Trashigang Dzongkhag
  - (6) Pemagatshel Dzongkhag
  - (7) Samdrup Jongkhar Dzongkhag
3. Project Director:  
Director of Department of Agriculture, Ministry of Agriculture and Forests
4. Project Manager:  
Program Director of RNRDC- Wengkhar, Department of Agriculture, Ministry of Agriculture and Forests
5. Counterpart Personnel:  
Research officers of RNRDC-Wengkhar, Department of Agriculture, Ministry of Agriculture and Forests
6. Other personnel mutually agreed upon as necessary

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**Annex IV List of Land, Buildings and Facilities**

1. Land, building and facilities necessary for the implementation of the Project
2. Rooms and space necessary for installation and storage of equipment
3. Office space and necessary facilities for the Japanese experts and related staff members
4. Other facilities mutually agreed upon as necessary

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## **Annex V Joint Coordinating Committee**

The Joint Coordinating Committee (JCC) composed of those members as listed below will meet at least once a year and whenever the necessity arises.

### **1. Function**

- (1) To authorized an annual work plan of operation in accordance with the framework of the Record of Discussions (R/D).
- (2) To review overall progress of the technical cooperation program in accordance with the framework of the R/D.
- (3) To review measures taken by the Government of Japan
- (4) To review measures taken by the Royal Government of Bhutan
- (5) To examine and endorse the joint Evaluation report during the project
- (6) To give recommendations to both the Royal Government of Bhutan and JICA for the smooth and successful implementation of the project.

### **2. Composition**

- (1) Chairperson:

Secretary of Ministry of Agriculture and Forests (MOAF)

- (2) Members

#### **1) Bhutanese Side:**

- Director of Department of Agriculture (DOA) as the Project Director
- Program Director of Renewable Natural Resources Research and Development (RNRRDC)-Wengkhar, DOA as the Project Manager
- Chief Horticulture Officer, MOAF
- Chief Planning Officer of Policy and Planning Division, MOAF
- Chief Marketing Officer of Agricultural Marketing Services, MOAF
- Director of Council for Renewable Natural Resources Research of Bhutan (CoRRB)
- Representative from Gross National Happiness Commission (GNHC)

#### **2) Japanese side:**

- Chief Adviser of the Project
- Long-term Experts assigned to the Project

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**-Other Japanese experts and personnel dispatched by JICA, when required**

Notes:

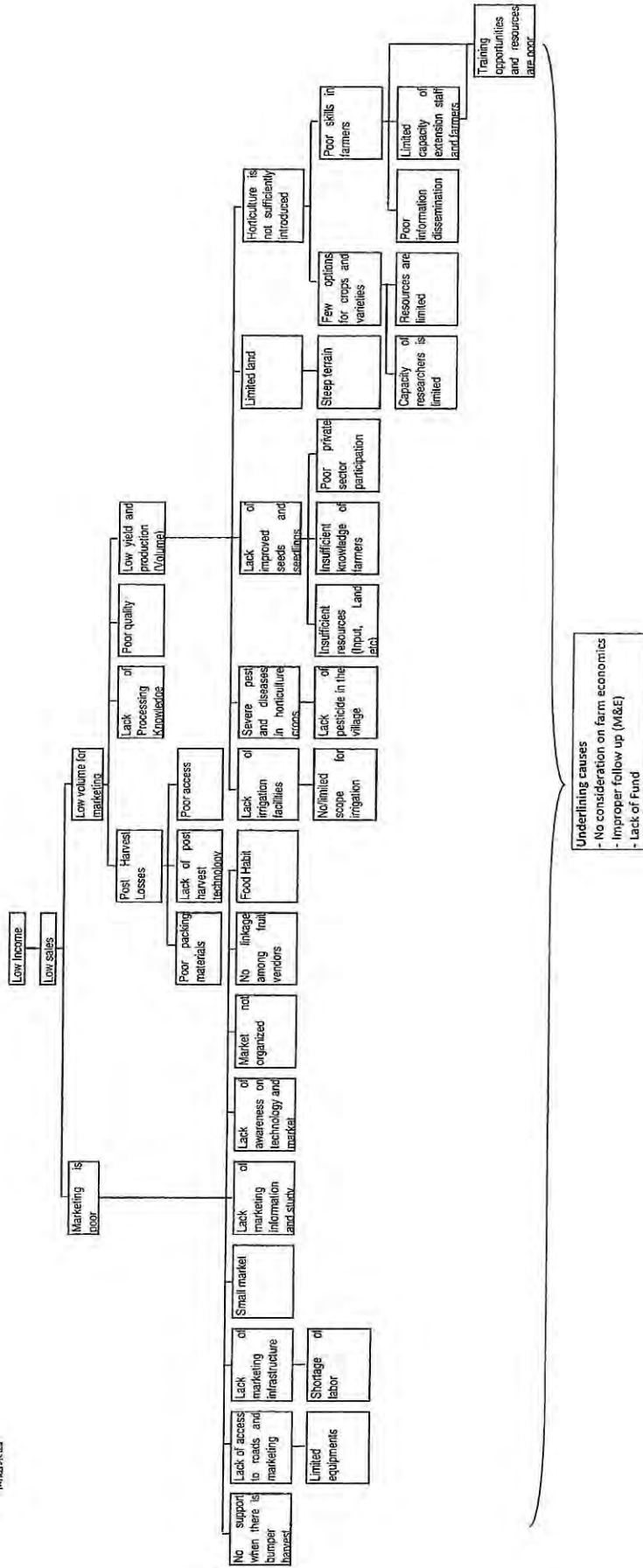
1. Officials of the Embassy of Japan may attend the JCC meetings as observers, as and when required.
2. Persons who are nominated by the chairperson may attend the JCC meetings as observers, as and when required.

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## 2. 問題系図

問題系図



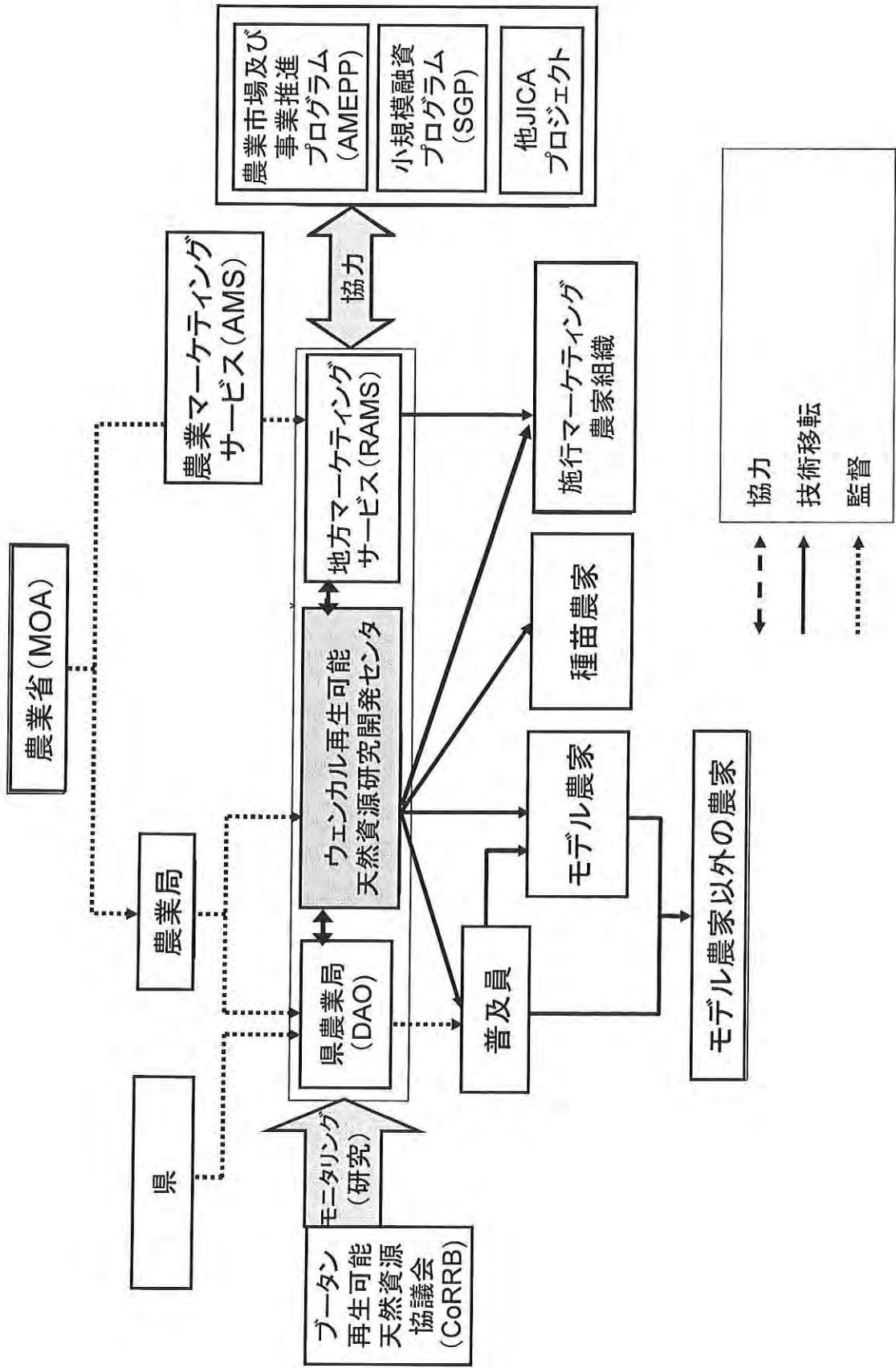
暫定 PDM  
 プロジェクト・デザイン・マトリクス (Version 0) 2009年9月8日 RNRRC- ウエンカル/農業省および詳細計画策定調査団により作成  
 プロジェクト名: プータン圃芸作物研究開発・普及支援  
 対象地域: モンガル、ルンツェ、タシアンツェ、タシガン、ペマッツェル、サムドゥップジョンカの各県  
 対象者 : 対象地域の農業省職員および圃芸農家

プロジェクトの要約	指標	指標の入手手段	外部要因
<p><b>上位目標</b>                      対象地域における収入源として圃芸農業の普及が進む。</p>	<p><b>指標</b>                      プロジェクトで研修を受けた農民と普及活動をとおした受益農民が 2020 年までに収入を XX%増やす。                      2. RNRRC ウエンカルで研修を受けた農民とその農民による農民間普及の受益者が 2020 年までに XXXXX に達する。</p>	<p><b>指標の入手手段</b>                      対象地域における年次県農業報告書</p>	
<p><b>プロジェクト目標</b>                      プロジェクトで研修を受けた農民と普及活動をととした受益農民が、圃芸農業の商業化に向けた適正技術を実践する。</p>	<p><b>指標</b>                      1. 圃芸農業が対象地域の耕作地の XX%において実施される。                      2. 研修を受けた農民の XX% がデモ・ファームを整備し、農民間普及を実施する。                      3. 研修を受けた農民と普及活動をとおした受益農民の一部が収入を XX%増やす。</p>	<p><b>指標の入手手段</b>                      1. プロジェクト報告書                      2. 対象地域における年次県農業報告書</p>	<p>1. 対象地域における道路整備が 10 年後に終了する。</p>
<p><b>成果</b>                      1. 生産と販売の可能性を踏まえ圃芸農業が対象地域において特定される。                      2. 普及員と農民を対象とした圃芸農業に関する技術研修の実施体制が RNRRC ウエンカルにおいて強化される。                      3. 種苗を研修参加者に提供する体制が RNRRC ウエンカルと種苗農家において確立する。</p>	<p><b>指標</b>                      1-1 圃芸農業開発ガイドライン/マニュアルが作成される。                      2-1 研修を受けた農民の XX% が主な研修内容を実践する。                      2-2 研修を受けた普及員の XX%が主な研修内容を普及する。                      2-3 参加者による研修評価結果が XX% 向上する。                      3-1 研修を受けた農民の全員に対し、計画どおりに種苗が提供される。</p>	<p><b>指標の入手手段</b>                      1. ガイドライン/マニュアル                      2-1 プロジェクトモニタリング報告書                      2-2 プロジェクト研修報告書                      2-3 プロジェクトモニタリング報告書                      3. プロジェクト研修報告書</p>	<p>1. 病害虫が大発生しない。                      2. 市場に大きな変化が発生しない。                      3. 深刻な自然災害が発生しない。</p>
<p><b>活動</b>                      1-1 AREP の結果を踏まえ、標高 (海拔 600~2,000m) に応じた適地圃芸作物が特定される。                      1-2 商業化の可能性のある作物と地域を対象にした圃芸農業マーケティング調査を実施する。</p>	<p><b>投入</b>                      日本側                      1. 専門家派遣                      A. 長期専門家                      (1) チーフアドバイザー / 圃芸農業</p>		<p>1. 主要なカウンターパートが異動しない。</p>

<p>1-3 調査結果を踏まえ、マーケティング活動を試行するサイトを特定する。</p> <p>1-4 試行サイトにおいて農民グループ/組合を形成し、その組織をととした農産物マーケティングを試行する。</p> <p>1-5 園芸農業開発ガイドライン/マニュアルを作成・改訂する。</p>	<p>(2) 業務調整 / 研修</p> <p>(3) その他</p> <p>B. 短期専門家</p> <p>(1) マーケティング</p> <p>(2) 食品保存/加工</p> <p>(3) その他</p> <p>2. カウンターパート研修</p> <p>3. 機材供与</p> <p>4. ローカルコスト負担</p>	<p>前提条件</p> <p>1. プロジェクト活動が県と郡の活動計画に含まれる。</p> <p>2. RNRRC ウエンカルに十分な職員が配置されている。</p> <p>3. 対象地域の農民がプロジェクト活動に反対しない。</p> <p>4. 建設中の研修員用宿泊施設が完成する。</p>
<p>2-1 これまで RNRRC ウエンカルで実施された園芸農業研修をレビューする。</p> <p>2-2 普及員と農民を対象とした新たな園芸農業研修の計画と教材を準備する。</p> <p>2-3 RNRRC ウエンカルで研修を実施する。</p> <p>2-4 農民間普及を促進する。</p> <p>2-5 研修を受けた普及員と農民に対するフォローアップとモニタリングを現地で実施する。</p>	<p>ブータン側</p> <p>1. カウンターパートと管理職員の配置</p> <p>(1) プロジェクト・ダイレクター</p> <p>(2) プロジェクト・マネージャー</p> <p>(3) カウンターパート</p> <p>(4) 管理職員</p> <p>(5) 日本人専門家のための秘書、ドライバー、他に必要な職員</p> <p>2. 土地、建物、他に必要な資機材の提供</p> <p>3. プロジェクト運営費の配賦（作業員 10 人分の傭人費など）</p> <p>4. 種子、苗木、日当など研修経費の配賦</p>	
<p>3-1 研修参加者に提供する種苗の生産システムを RNRRC ウエンカルにおいて構築する。</p> <p>3-2 商業化に向けて、農民の圃場における種苗生産を強化する。</p>		

4. プロジェクト実施体制図

プロジェクト実施体制図



地域合同調整委員会 (Regional Project Coordination Committee; RJCC)

議長:

県知事  
(東部6県の県知事が交代)

秘書:

プロジェクトマネージャー  
(ウエンカル再生可能天然資源研究開発センター)

メンバー:

- 農業局ウエンカル農業試験場所長
- 農業局ウエンカル農業試験場カウンターパート代表
- CMU (Central Machinery Unit) の代表
- 東部各6県の農業オフィサー
- 農業市場サービスの評議員

オブザーバー:

- AMEPP プログラムダイレクター
- SGP 代表
- オランダ開発組織 代表
- ドュルクシード会社 代表
- JICAブータン事務所 代表