



PROJECT NOTIFICATION

Ref. No.: 21-CP-40-SP-DMP-C-PN2200006-002

Date of Issue	24 January 2022
Project Code	21-CP-40-SP-DMP-C
Title	Demonstration Farm on Innovative Agriculture
Timing and Duration	January 2022–August 2024 (32 months)
Hosting Country(ies)	Not Applicable
Modality	Virtual and/or face-to-face
Implementing Organization(s)	National Productivity Organizations and APO Secretariat
Participating Country(ies)	Cambodia, Indonesia, Lao PDR, Malaysia, Philippines, Thailand, and Vietnam
Overseas Participants	Not Applicable
Local Participants	Not Applicable
Closing Date for Applications	1 March 2022

1. Objectives

- a. Establish a demonstration farm on innovative agriculture by using smart technology applications in a selected member country to promote agricultural productivity and competitiveness.
- b. Showcase gains and successes resulting from the establishment of the demonstration farm to other member countries.
- c. Promote agricultural transformation in member countries through the adoption of smart technology applications.

2. Background

Agriculture plays an important role in food supply and regional economies in member countries, and its development is crucial for food security and sustainable development. Presently, however, the agriculture sector worldwide is facing tough challenges that include intensifying climate change and global warming that are affecting crop growth cycles as well as diminishing workforces due to migration of rural working populations into urban areas. The COVID-19 pandemic exacerbates the pressure on the agriculture sector, especially the requirements to restrict movements and human contact.

In response to this, smart technologies such as the Internet of Things, artificial intelligence (AI), and big data analysis are being increasingly deployed in the agriculture sector. Sensors collect environmental information on crop growth, and the information is stored in cloud systems. Farmers then automatically or remotely check the information in real time via smartphones and can remotely control the crop environment. In addition, information accumulated in cloud systems can be used for AI analysis of current crop and livestock growth conditions. Smart technologies can therefore contribute to both adjustment of the crop growth environment and reducing farm labor.

The APO has been disseminating knowledge and introducing best practices of innovative smart agriculture through multicountry and in-country projects. However, the transition to smart agriculture through the adoption of smart technologies is often difficult since it requires substantial capital investment.

Under a special cash grant from the Ministry of Agriculture, Forestry and Fisheries of Japan (MAFF), the APO is launching this special demonstration farm project that aims at establishing a smart technology-driven farm that will serve as a practical laboratory for APO member countries to study the deployment of such technologies onsite, examine the results, and draw practical lessons for adaptation and replication. Through this process, it is hoped that this demonstration farm project will contribute to more intensive adaptation and adoption of smart agriculture technologies throughout APO member countries. The scope of and target countries where the demonstration farms will be established will be aligned with MAFF policy guidelines.

3. Modality of Implementation

Demonstration farm project activities will be conducted through the virtual and/or face-to-face modality, depending on the situation of the pandemic and travel restrictions that may be applicable at the time of implementation.

Virtual

Demonstration farm project activities will be delivered virtually as long as the COVID-19 pandemic continues to prevail.

Face-to-face

Demonstration farm project activities will be carried out in the face-to-face modality if the COVID-19 situation permits.

4. Scope and Methodology

Scope

Establishment of demonstration farms for applications of innovative agricultural technologies such as using drones for crop growth analysis and control, monitoring and control of crop growth environments,

monitoring of livestock health, using farm management systems, and using power-assist suits and weeding robots to reduce farm labor.

Methodology

This project will involve a tripartite arrangement comprising a demonstration organization or group of demonstration organizations, the NPO, and APO Secretariat.

An overseas resource person(s) will be dispatched from Japan one to two times per year to the demonstration farm with the equipment/systems to transfer the necessary technologies. The resource person(s) designated by the APO Secretariat will be assigned according to the work plans to assist in project implementation. The equipment/systems will be donated or lent.

Staff of the demonstration farm will visit Japan in the first and second years of the project to learn about the best practices, knowledge, and technologies of innovative agriculture.

Participants from other member countries will be invited to the demonstration farm to observe the technologies in the third year of the project.

5. Implementation of Demonstration Farm Projects

The implementation of the demonstration farm project comprises four stages:

Stage 1: Application and selection (first project year)

- a. The NPO nominates a farm (e.g., research farm of a public institute) and submits an application in the form of a draft demonstration farm plan (DFP) following the guidelines provided in the Attachment. The demonstration farm must be in a strong position to act as a model that exhibits leadership and influence on other organizations in similar fields with a high level of commitment from the management.
- b. The feasibility of the draft DFP from the financial as well as resource aspects must be considered carefully at the application stage. NPOs are reminded that cancellation of a demonstration farm project in the middle of the implementation phase must be avoided.
- c. Based on assessment of technical feasibility including availability of necessary equipment/systems, the APO Secretariat selects and approves the draft DFP. If necessary, the APO Secretariat may assign a resource person as a consultant for the assessment.

Stage 2: Planning (first project year: 1 month)

- a. After the selection is finalized and the draft DFP is approved, the APO Secretariat designates an overseas resource person(s) in consultation with the NPO concerned. The resource person(s) will conduct an onsite survey and assist in finalizing the DFP through discussions with counterpart staff.
- b. At the time of the onsite survey, the resource person(s) will conduct a preproject evaluation of counterpart staff to assess their level of understanding of the topic of innovative agriculture.
- c. The APO Secretariat issues a Project Implementation Plan (PIP) to the NPO, which includes a mutually agreed plan, financial arrangements, responsibilities of partners involved, and other details.

Stage 3: Implementation (first to third project year: 28 months)

- a. The agreed-upon DFP is implemented, which may include training, capacity building, modification of existing practices, development of new processes, and applications of new technologies, management tools, and productivity-improving methods.
- b. The resource person(s), NPO, and APO Secretariat communicate at various stages of implementation to review the diagnosis and progress and recommend ways to resolve problems or administrative bottlenecks faced during the project.

- c. For the first and second project years, counterpart staff from the NPO and demonstration farm visit Japan to study technologies for innovative agriculture and observe best practices through an observational study mission arranged by the APO Secretariat.
- d. For each project year, the resource person(s) visits the demonstration farm and conducts onsite training in the use of the donated/lent equipment/systems. For the first and second project years, the resource person(s) then discusses the DFP for the next project year including plans for equipment/systems with counterpart staff.

Stage 4: Evaluation and dissemination (third project year: 1 month)

- a. The resource person(s), NPO, and APO Secretariat review and evaluate the results of the demonstration project to determine whether the objectives have been achieved.
- b. The NPO takes the lead in planning, preparing, and conducting dissemination activities, ensuring multiplier effects of the project in the country. The results and process of the demonstration farm are disseminated through locally organized activities and materials derived from the project, such as the final report, training manual, promotional materials, and a demonstration video in a local language (if possible with an English version or English translation).
- c. The APO Secretariat and NPO arrange a dissemination workshop for participants from other member countries to demonstrate the use of innovative agricultural technologies adopted through this project.
- d. The NPO in consultation with the demonstration farm is expected to submit the project outputs and results for dissemination activities to the APO Secretariat before the completion of this stage.

6. Roles and Responsibilities

APO Secretariat

- a. Assign an overseas resource person(s) as a consultant for the assessment of draft DFPs, if necessary.
- b. Assign an overseas resource person(s) during specified periods of the demonstration project.
- c. Arrange the observational study mission for counterpart staff.
- d. Arrange the dissemination workshop for participants from other member countries.
- e. Procure necessary equipment/systems for the demonstration project.
- f. Monitor the progress of project implementation in consultation with the NPO and resource person(s).

NPO

- a. Assign a team in the NPO to be fully involved in the project and later to be trained as local experts.
- b. Guide and assist the demonstration farm in planning, coordinating, implementing, monitoring, and documenting project activities in consultation with the resource person(s) and APO Secretariat.
- c. Conduct dissemination activities and prepare a prior action plan for dissemination and its implementation nationwide. The tentative dissemination plan should be submitted along with the application.
- d. Invite relevant agricultural/industrial associations to observe the project to ensure multiplier effects and dissemination.

Demonstration Farm

- a. Assign a team to work on the project in consultation with the NPO, resource person(s), and APO Secretariat.
- b. Provide all necessary land, facilities, and equipment (other than that provided by the APO Secretariat), tools, inputs, and information required for the project and extend all necessary local support to the resource person(s), NPO, and APO Secretariat.
- c. Implement all suggestions and recommendations of the resource person(s) based on feasibility and document the results and outcomes of the DFP.
- d. Present the activities and results during dissemination activities for the benefit of other farms.

Resource Person(s)

- a. Perform consultancy and training in the areas specified in the DFP.
- b. Monitor and evaluate the performance and progress of the productivity enhancement activities of the farm.
- c. Assist the NPO in developing a training manual and multimedia dissemination materials on the demonstration project.

7. Financial Arrangements

To be met by the APO

- a. All assignment costs of the overseas resource person(s).
- b. Costs for the observational study mission and dissemination workshop for other member countries.
- c. Equipment/systems (up to JPY3,000,000 or about USD28,500) per year including tax and transportation fees.
- d. Partial expenses for dissemination-related activities (documentation, video production, dissemination workshop, dissemination material, etc.). The budget details will be in the PIP.

To be met by the NPO

- a. Expenses for coordinating and implementing the demonstration project.
- b. Partial expenses for dissemination activities (documentation, production of training manual and dissemination materials, dissemination activities, final report, etc.). The budget details will be in the PIP.

To be met by the Demonstration Farm

- a. Purchase of equipment and physical alterations, if necessary.
- b. Expenses for logistic arrangements related to project implementation, including the local travel costs of the APO resource person(s) and expenses for interpretation.



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