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TECHNOLOGY NEEDS ASSESSMENT (TNA) REPORT

COMPANY:	LGU-MAGDIWANG
ADDRESS:	POBLACION, MAGDIWANG, ROMBLON

SCOPE OF ASSESSMENT

A. Strategic Directions
   a. Vision and Mission
   b. Goals and Objectives
   c. Strategic Alliances
B. Management Aspects
C. Technical Aspects
D. Marketing Aspects
E. Financial Aspects

SUMMARY OF ASSESSMENT

BACKGROUND:

In rice production, drying is the most critical operation after harvesting a crop. Up to 25% of moisture may be present in the rice grain when it is harvested. High moisture levels during storage can cause grain discoloration, promote the growth of molds, and raise the risk of pest attack. The rate at which rice seeds germinate may also be affected that's why it is important to dry rice paddy as soon as possible into a moisture content of 14% or less to prevent quality deterioration *(Rice Knowledge Bank, IRRI)*. Sun drying is a traditional drying method for reducing the moisture content of paddy by spreading the grains under the sun. It is the most common drying method because it is low cost compared to mechanical drying. In Romblon, it is also the common method of drying paddy. The grains were laid on pavements or along the shoulder of the road which is both hazardous to both rice dryers and motorists. Problems of contamination and intermittent drying are generally encountered with sun drying especially during rainy season. It was also estimated that there is a total of 10% loss during pavement or sun drying. To solve the common problem incurred with pavement or sun drying, Portasol technology is proposed to be deployed to rice farmers associations of the municipality of Magdiwang in Sibuyan Island. Portasol is a portable and lightweight solar dryer composed of aluminum thermal trays that can be laid down on an open field or assembled into racks with a plastic sheet cover as protection from pests and fungus. Developed by Mr. Francisco Pagayon, the technology aims to eradicate this perennial problem of harvest losses and will provide fast, safe, and clean solar dryers on any ground, away from roads and highways. The technology can hold up to 150 kg of produce and its drying rate as per a study conducted on a different set of grains provide that it is 2-3 time faster than the usual method. Magdiwang, Romblon, on the other hand, is a 5th class municipality with 3,186.60 hectares, or 37.49 percent of the total land area, set aside for agricultural use.

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Following the area for coconut, the municipality's rice land is 561 hectares in total. There are nine (9) registered rice farmer's associations (RFAs) in the municipality with a total land area of 243.39 hectares and an annual yield of 939.26 metric tons of rice paddy. This technology intervention for farmers in Magdiwang would increase their rice percentage recovery and head rice yield compared to traditional drying method. During rainy season, the Portasol could utilize induced heat from charcoal or rice hull cinders. It also has a canopy to cover to avoid dampness of grains thus, prevents harvest losses, promotes higher grain quality and food hygiene.

METHODOLOGY

Upon the approval of the project and funds were alloted, the DOST-MIMAROPA with the help of PSTC-Romblon would facilitate the procurement of the PORTASOL technology. The unit will be housed to the designated facility of Magdiwang RFAs. They will also be responsible for the implementation of the project and the maintenance of the PORTASOL units. Other stakeholders like the Department of Agriculture will be invited to participate in the project through providing the rice farmers with agricultural production materials and/or additional operating capital for the associations. The LGU-Magdwang MAO will also be responsible in monitoring the utilization and productivity of rice farmers after the deployment of the technology. Benchmarking from other regions will also be explored to maximize the use of the technology and learn the most effective and efficient system for operating the technology. A memorandum of agreement between the proponent-LGU and the beneficiary-associations will also be forged to formalize the accountability of the farmer associations. A minimal maintenance fee will also be explored by each association to save money for replacement of the units when they reach their service life. The PSTO, on the other hand, will manage the project and ensure that the objectives are met. The impact of the project will also be assessed based on its objectives and will be reported after the first year of implementation.

SUMMARY OF FINDINGS

1. Strategic Direction

a. Vision and mission

Rice security is one of the major goals of the LGU. It aims for available, affordable, and accessible high-quality and notorious rice at all times.

b. Plans and Objectives

The local government is determined to increase the rice productivity of rice farmers in which its constituents will benefit from efficient and sustainable farm operations. Also, the major envisions the rice industry to be competitive to importation of rice, profitable for farmers, resilient to disasters and climate risks, and able to cater to the consumer demands for safe and healthy rice

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c. Strategic alliances and current agreements

The local government is currently allied with all the national government agencies and non-government agencies for planning and implementing its programs, projects, and activities

2. Management Aspect

a. Human resources

The RFA will be responsible for the utilization of the technological assistance. The RFA beneficiaries will be given trainings on the operation and maintenance of the equipment, occupational safety and health, cGMP, and other technology trainings.

b. Purchasing

Raw rice paddy will be harvested by rice farmers and distributed to RFAs PORTASOL unit for drying which is a cleaner and safer way of drying rice paddy. The PORTASOL unit will be housed by the RFAs in a designated facility to ensure its optimum utilization as well as facilitate its repair and maintenance.

c. Work environment

The target work environment will be prepared ahead of time by the RFA beneficiaries. Health and safety kits in case of emergency will be also prepared.

d. Business ethics and social responsibility

The LGU is committed to organizing and facilitating several civic activities to develop and improve the welfare of its people.

e. Occupational health and safety management

The LGU observes occupational health and safety during its operation and processes. It has safety kits, and first-aid kits on standby, as well as emergency gear to minimize risks during untoward incidents.

3. Technical Aspect

a. Operational and outsourcing practices

Production system

The project will focus on the use of PORTASOL technology of rice farmers. Production of rice is expected to improve with the use of this technology as

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rice farmers still use the traditional and labor-intensive sun drying method. Project monitoring would also be done by the DOST with the assistance of the LGU-Magdiwang through data gathering. Monthly monitoring of output will be accomplished to ensure optimum utilization of the technology assistance.

Production planning and control
N/A

Production layout
N/A

Work Study/Improvement
N/A

Equipment management and maintenance
The equipment will be housed to the designed facility of Magdiwang RFAs. They will be responsible for the implementation of the project and the maintenance of the PORTASOL units. Training and capability enhancement will be provided to the RFA beneficiaries to ensure systematic and regular operation of the equipment.

Quality assurance system
N/A

Outsourcing practices
N/A

b. Product and process performance and improvement

Re-engineering and research development
Though informal in nature, the LGU will try to engage in research and development to improve farming operations and other farming techniques. This also will be done in partnership with the DOST-MIMAROPA, and the academe.

Performance measures and results – Process
N/A

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Performance measures and results – Product
N/A

Procedures for continuous improvement
N/A

Product quality standards
N/A

c. Environmental management system

Waste management
N/A

4. Marketing Aspect

a. Marketing plan
N/A

b. Market outlets
N/A

c. Promotional activities
N/A

d. Market competitors
N/A

5. Finance

a. Cash flow and other related documents
N/A

b. Source of capital/credit
N/A

c. Accounting system
N/A

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CONCLUSIONS:

Based on the interview and ocular inspection, the TNA team concludes the following:

1. The proponent has an organized management that is willing to implement activities under DOST-MIMAROPA'S project on Adoption on Portable Solar Dryer (PORTASOL) for Rice Farmer Associations in Magdiwang, Romblon. The proposed LGU and associations could carry additional facility, workforce movement, and new processes.

2. Magdiwang farmers have good farm and crop management skills. However, its traditional methods on rice drying need further improvement. Training activities, post-harvest technologies like PORTASOL, and other interventions are needed.

3. The needed intervention applied under GIA would be to adopt the Portable Solar Dryer (PORTASOL) technology for Rice Farmer Associations in Magdiwang, Romblon.

RECOMMENDATIONS:

The following are recommended by the TNA team:

1. DOST MIMAROPA should extend relevant interventions such as the Adoption of Portable Solar Dryers (PORATASOL) for Rice Farmer Associations in Magdiwang, Romblon.

2. If needed the DOST MIMAROPA should assist the LGU and the associations in training and other necessary interventions.

3. The proponent should submit additional requirements to go with the proposal.

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