Workshop Report

For

Agricultural Development in the American Pacific
Regional Food Security and Sufficiency Project

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WORKSHOP FOR THE AGRICULTURAL DEVELOPMENT IN THE AMERICAN PACIFIC REGIONAL FOOD SECURITY AND SUFFICIENCY PROJECT

1.1. Introduction

1.1.1. A four-day training workshop for Agricultural Development in the American Pacific Regional Food Security and Sufficiency Project was organized at the College of the Marshall Islands, Arrak Campus and Farmers' Field, Laura from April 6th to 9th, 2009. Dr. Virendra Mohan Verma, Principal Investigator of the project coordinated the training workshop. The workshop was funded by the grant from the Agricultural Development in the American Pacific (ADAP).

1.1.2. Twenty-three local growers, farmers and extension staff including youth, and women attended the workshop, which was conducted in both Marshallese and English languages. Dr. Virendra Mohan Verma gave all the presentations in English while Mr. Jabukja Aikne, Ministry of Resources and Development and Mr. Jina David, College of the Marshall Islands, translated in Marshallese.

1.2. Purpose

1.2.1. The ultimate aim of the project is to increase production of sweet potato, taro and other staple foot crops in the Federated States of Micronesia (FSM) and Republic of the Marshall Islands (RMI) to achieve food security and sufficiency.

1.3. Objectives

1.3.1. Organize first workshop and extensive hands-on trainings to educate and train local extension staff and farmers at Majuro, Republic of the Marshall Islands in appropriate agricultural practices that will contribute for the Agricultural Development;

1.3.2. Distribute acclimatized plantlets of sweet potato and soft taro multiplied through tissue culture at the Kosrae Agricultural Experiment Station;

1.3.3. Train-the-trainer and provide recommendations for cultivation of sweet potato and soft taro in atoll conditions.

1.3.4. Create awareness, develop skill, and train participants in taro and sweet potato cultivation and composting techniques;

1.3.5. Provide technical assistance to develop a sustainable food security system in the FSM and RMI.

1.4. Workshop Activities

1.4.1. Ms. Diane Myazoe-deBrum, Dean, Cooperative Research and Extension, Majuro welcomed the participants. The participants introduced themselves. Dr. Virendra Mohan Verma gave a brief workshop introduction.

1.4.2. PowerPoint Presentations were given on land preparation, planting material preparation, planting material storage, methods of planting, time and distance of
planting, replanting, fertilizer and compost application, watering and maintenance, weeding and harvesting for sweet potato and soft taro, and compost preparation.

1.4.3. Extensive hands-on trainings were organized on composting techniques (collection of green and brown material for composting, shredding of green and brown material for composting, compost preparation), cultivation techniques (land preparation: clearing, plowing and flattening, layout designing for sweet potato and taro cultivation, and application of compost as top dressing, bed preparation for sweet potato and taro cultivation; planting: planting material preparation, planting material storage, methods of planting, time and distance of planting, replanting, fertilizer and compost application, watering and maintenance, weeding and harvesting).

1.4.4. The participants were encouraged to ask question any time during the workshop. Specifically, in the afternoon sessions of first and last day of workshop, more than 3-hours were utilized for group discussion and to answer project related questions of the participants. Two participants voluntarily provided their services to translate participants' questions in English from Marshallese and vice-versa. This problem solving session was great and participants felt satisfied to get answers of their every question and concern. There were more than 50 questions related with tissue culture, acclimatization process, maintenance of plantlets, cultivation, supplied varieties, quality production, composting, fertilizer application, planting techniques, nutrient deficiency symptoms and their control etc.

1.4.5. A visit to farmers' field at Laura village was organized for on-site demonstration of solutions of problems.

1.4.6. All the outreach materials were provided to each participant.

1.4.7. Participants were evaluated two times, once prior to and once after the training sessions of the workshop. Evaluation data were analyzed and graphical summary is presented in the next section of this report.

1.4.8. On the last day of the workshop, Dean, Cooperative Research and Extension, Majuro gave closing remarks and presented the certificates of appreciation to the participants. Dr. Virendra Mohan Verma gave thanks to the participants for their hard work.

1.5. Outreach Material

1.5.1. Two multicolored, Farming and Production Guides for Growers on taro and sweet potato were developed in Marshallese. These guides have all useful facts for cultivation of taro and sweet potato (like land preparation, planting material preparation, planting material storage, methods of planting, time and distance of planting, replanting, fertilizer or compost application, cultivation, weeding, control of diseases and pests, and harvesting etc.)

1.5.2. A two-page fact sheet was developed on ‘Sweet Potato Cultivation: Management Techniques’.

1.5.3. Two easy-to-understand, before-and-after questionnaires with clear directions and specific questions to evaluate the response and outcomes of the training workshops, hands-on trainings and demonstrations were developed.
1.6. Outcomes

1.6.1. Encouraging outcomes of this training workshop are that all the participants showed positive attitudes and zeal for learning techniques and farming aspects that would help to increase production of sweet potato, taro and other staple foot crops.

1.6.2. The participants admitted and evaluation proved that this training workshop has increased their knowledge and awareness. It has developed their agricultural abilities and skills and they are very enthusiastic and eager to use gained knowledge in their fields to serve their communities.

1.6.3. Moreover, as a training byproduct we have developed one sweet potato and taro farm, which would serve the needs of the particular family and would also stand as an agricultural model for other people in the community and would encourage them to establish their own gardens.

1.6.4. Two easy-to-understand, before-and-after questionnaires with clear directions and specific questions to evaluate the response and outcomes of the training workshops, hands-on trainings and demonstrations were developed and successfully used.

1.7. Evaluation

1.7.1. What effect do you believe this workshop would have on your performance regarding sweet potato and soft taro cultivation, and composting?

![Graph showing participants' responses to the evaluation question.]

Participants response %

- Very positive
- Somewhat positive
- Neither positive nor negative
- Somewhat negative
- Very negative
1.7.2. How much of the knowledge and skills obtained from this workshop would you use in your state?

1.7.3. How relevant the information and training provided in the workshop, is to your community in terms of insure food security?

1.7.4. What are the three main crops, which could contribute for food security in your state?
1.7.5. What skills learned during this training workshop have you found to be most valuable for you?

<table>
<thead>
<tr>
<th>Skill</th>
<th>Participants response %</th>
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<tr>
<td>Composting</td>
<td>100</td>
</tr>
<tr>
<td>Land preparation</td>
<td>90</td>
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<tr>
<td>Cultivation techniques</td>
<td>80</td>
</tr>
<tr>
<td>Planting techniques</td>
<td>70</td>
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<tr>
<td>Fertilizer application</td>
<td>60</td>
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1.8. Photographs of the Activities

PowerPoint Presentations: Composting and Cultivation Techniques

Participants Studying the Training Material; and Hands-On Training
Hands-On Training: Mixing Soil, Potting Mix, And Chicken Manure to Fill Cups to Transfer Acclimatized Taro and Sweet Potato Plants

Hands-On Training: Filling the Cups with Soil Mixture to Transfer Acclimatized Taro and Sweet Potato Plants

Hands-On Training: Transfer of Acclimatized Taro and Sweet Potato Plants into the Soil Mixture Filled Cups
Hands-On Training: Transfer of Acclimatized Taro and Sweet Potato Plants into the Soil Mixture Filled Cups

Hands-On Training: Transfer of Acclimatized Taro and Sweet Potato Plants into the Soil Mixture Filled Cups

Hands-On Training: Transfer of Acclimatized Taro and Sweet Potato Plants into the Soil Mixture Filled Cups
Hands-On Training: Fertilizer (Starter Solution) Application

Hands-On Training: Fertilizer (Starter Solution) Application; and Shredding Green Material for Composting
Hands-On Training: Shredding Green Material for Composting; and Shredded Green Material

Hands-On Training: Shredding Brown Material for Composting

Hands-On Training: Shredded Brown Material, and Filling Coconut Husk at Bottom of Compost Pile for Better Aeration
Hands-On Training: Layering Brown Material for Composting; and Copra Cake as Activator (Top View of Composting Bin)

Hands-On Training: Top Soil as Activator; and Layering Green Material for Composting (Top View of Composting Bin)

Hands-On Training: Copra Cake as Activator; and Layering Brown and Green Material for Composting (Side View of Composting Bin)
Hands-On Training: Layering Brown and Green Material for Composting (Side View of Composting Bin)

Hands-On Training: Layering Brown and Green Material for Composting (Side View of Composting Bin)

Hands-On Training: Participants along with Finished Compost Pile; and PowerPoint Presentations: Sweet Potato Cultivation and Management Techniques
Hands-On Training: Layout designing and Bed Preparation for Sweet Potato and Taro Cultivation
Hands-On Training: Bed Preparation for Sweet Potato and Taro Cultivation

Hands-On Training: Bed Preparation; and Sweet Potato Planting

Hands-On Training: Sweet Potato Planting
Hands-On Training: Sweet Potato Planting

Hands-On Training: Sweet Potato Planting

Hands-On Training: Taro and Sweet Potato Planting
Hands-On Training: Fertilizer (Starter Solution) Application

Hands-On Training: Participants Visit to Farmers’ Field for Problem-Solving Session

Closing Events: Distribution of the Certificate of Appreciation to the Participants