



GTFS/RAS/198/ITA
Support to the Regional Programme for Food Security in the Pacific Island Countries

FAO/ITA/VAN/02
AGRO-FORESTRY PROJECT

TERMINAL REPORT

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Executive Summary

The Agro-forestry nursery project involves assisting in the continuation of the activities of the five nurseries established in the previous or actual Agro-forestry nursery project. The continued activities involved basically stocking of 200,000 planter bags to be supplied to the five nurseries, supply of 100 meters of shade cloth for nursery shading and a total of 1,000 kilos of seeds purchased and supplied to the five nurseries for their seedling stock.

Most materials collected from the supplier were shipped to the islands or land where the nursery sites were location. The islands where nurseries were on were; Santo, Pentecost, Efate, Malekula and Tanna. Except for the island of Efate which all materials were purchased were only transported by land.

From the original logical framework prepared for the Extension of the Agro-forestry project a total budget of 6,303,000 vatu was approved for spending. During the implementation only 2,038,713 vatu was spent due to circumstance resulting in delays to implement the activities in the timeframe.

A total of 20,000 planter bags were potted and stacked ready for transplant of germinant of different species of which seeds were collected.

In assisting the community for their participation towards the project training was conducted at the five locations. At each site 20 participants were invited for the training and were trained on the aspects of nursery management, tree planting techniques and planted woodlot or small scale forestry plantation management. There were a total of 100 farmers trained in total.

Most seedlings will be ready for planting in the next four to five months time and during the planting the Department of forests and Department of Agriculture will be directly involved in assisting farmers to do their plantings at their sites.

1. Introduction

Most indigenous people living on the islands of Vanuatu whom used to depend largely on hunting and gathering now find their way of live changed dramatically within their generation. There scarcity of natural resources had put much pressure on the resources and more farmers or community members or families are beginning to see the need to must manage their resources wisely. The Department of forests plays an important role in this regard for the forest resources to assist farmers realize their dependence on the forest resources and the need to must do replanting of mostly high value indigenous tree species to address the needs. In order to successfully achieve these, the department had spent much effort in the research of the indigenous tree species with high economic value or benefits to the people and needed extend the findings to the farmers in the village. The latter could only be so through establishment of forestry nurseries and providing the selected plant materials for the farmers to access and plant in their farms. This is in the hope that in the next one to two decade the farmers will benefit from their tree crops in the areas of biodiversity rehabilitation and conservation, economic benefits and social benefits.

The actual Agro-forestry Nursery project was completed at the end of 2007 with a report submitted. This project is an Extension of the Agro-forestry Nursery project decided on in April of 2008 during the Food Security in the Pacific Tri-Partite Review in Apia Samoa (21st – 22nd April 2008).

Goal

Main goal of the Extension of the Agro-forestry Nursery project is to increase food security and incomes for the rural farming households.

Purpose

The project purpose is to increase food and wood production for subsistence use and for income generation purposes.

In preparation for the project all projects were to be presented in the newly developed Logical framework developed. The whole month of May and June was spent on the preparation of the logical framework. A draft was prepared and presented to the FAO office in Apia Samoa for consideration. While the budget was accepted and project activities there however was the need for assistance in putting the proposal in a proper logical framework. The latter was possible with the assistance of Mr. Lauro Hernandez whom reviewed and presented a revised Logical framework in July with the timeframe for the activities and budget to be spent between July and December of 2008.

The Logical framework was accepted and in the month of August and September through to October the effort was on the collection of the standard three quotas of for the nursery materials and including that for seeds; shipment of materials to the islands by shipping agents and training materials and preparation of training budget and program.

Most of the tools and materials were purchased on the first week of November while seeds were purchased in September. This had made it rather difficult as there were the seeds ready to be planted but the planter bags are yet to be issued and once they were issued it took half of the last quarter for the funds to be made available to transport the materials to the islands. This had taken quite a while through over to the Christmas holidays in December. While funds were transferred it was not possible for the materials to be moved as it was over the holiday leave for the Project Manager.

The nursery operators however were able to go ahead and prepare their soil and got their planter bags finally and did their potting and stacking and the seedlings were now growing ready to be planted out in the field.

Training was another important activity that was budget and a timeframe put together and must be reviewed the second time to be implemented. Most of the nursery operators were went through with basically with the training in two parts; the theory or going through handout presentations and then actually doing the activities in the nursery such as propagation techniques and field planting includes; site species matching, site preparation and basic silviculture practices.

Attached in Appendix one is the original and revised logical framework.

2. Project Organization and Budget Arrangements

The Extension of the Agro-forestry Nursery project has the following as organization. In the initiation of the extension of the Agro-forestry project the National Project Coordinator; Late Mr. Frazer Bule Lehi was instrumental assisted in the negotiation for the FAO office in Apia Samoa to accept and formulation of the logical framework. The project steering committee is effectively coordinated or seen to by project managers and the NPC. The Extension of the Agro-forestry project is managed under the Department of forests by Project Manager; Ioan VIJI. During the

implementation Forest officers in the field were informed to assist in the supervision of the activities including justifying the completion of contracts.

Logical framework includes the main activities to be carried out and the budget required. During the project implementation most of the questions are raised to the NPC. Or often the NPC sees and approves request for funding for activities to be implemented in the project. There was a National project Implementation Assistance but since he was recently recruited most of the quotas were followed by the Project Manager and reported directly to the NPC for submission. It was rather difficult after the NPC was not feeling well and eventually passed.

For the materials and tools for the nurseries three quotas were prepared from three different suppliers and the supplier approved to supply the planter bags was Vanuatu Agriculture Supplies. For the purchase of seeds again three individuals produced quotas and Mr. Jack Vuti was accepted as supplier for the seeds. The shipment of materials and tools to the islands was rather a difficult one as different ships service different ports in the northern and southern parts of Vanuatu and this was explained to Mr. Bismarck Crawley (during his visit in 5th November 2008) whom requested for a justification for this purpose (attached in the quarterly report for this information). One of the activities that were decided on was the reduction of the payments of the contracts this was agreed upon and unfortunately even with the reduction (80,000vt) the farmers were not being paid the actual amount because the PM was not able to supply the photos to justify the contract activities (potting and stacking). Only one nursery operator was paid the amount of 80,000vt (Mr. Taura Titus) for the Efate nursery.

During Mr. Bismarck Crawley's visit in November of 2008 the Logical framework was reviewed the second time and more that fifty percent (50%) the original activities excluded due to the limited time available (attached quarterly report noted in activity Mr. Bismarck Crawley's visit).

Actual budget allocated for the extension of the agro-forestry project was reduced. And actual spending as a result of the decisions to reduce number of activities due to limited time and inability to implement activities within timeframe stands at a much lower figure. Below is a summary of the total allocation to the different activities carried out in the extension of the Agro-forestry project in 2008 to early 2009.

Summary of the 2008 Budget for the Extension Agro-forestry Nursery project.	
Activities	Expenditure
Procure additional nursery materials (planter bag & shade cloth)	930,000
Distribute materials to nurseries	
Produce additional seedlings – purchase of seeds	720000
Contracts for potting and stacking of planter bags	80000
Training additional nursery supervisors and farmers	280000
Monitor and Evaluate project – GEO	28713
T O T A L :	2,038,713

Monitoring and Evaluation on the progress of the project is important and it is necessary where there was much to be explained to the forest officers and nursery operators in the field with the delays of them receiving materials and tools. The table below is a summary of the funding for the General Expenditure Operational.

Detail Expenditure on Monitor and Evaluate project

GEO

Activity	Description	Quantity	Unit Price (Vatu)	Total (Vatu)
Communication	Telephone & Fax	8 Cards	2000vt	16000
Fuel	Administration	10 Trips to Vila town	150vt/trip(x2 return)	3000
Stationary	Pens & papers	Postage of materials		9713
Total				28713

3. Project Outputs

Present the outputs as listed in the logical framework. If appropriate, support each discussion with table or figure. Make a summary discussion of the outputs and tell how such outputs can contribute to the achievement of the project purpose. Make use of the final Project Implementation Review Summary.

In the implementation of the project listed below are the project outputs. Originally the actual project had be resulted in the construction of the nurseries however to continue the activities of the nurseries this project outs basically is to address this.

3.1. Tools and Materials procured

Materials and tools were basically only two items which were budgeted for to acquire from the suppliers those were the PC Black planter bags and the Shade cloth (detail of the materials are in appendix 1). A total of 200,000 planter bags were purchased and a total of 100 meters of shade cloth.

The planter bags were distributed to the nurseries to produce seedlings and be able to plant out in agro-forestry planting designs. The shade clothe is necessary to keep the seedlings save from direct sunlight and heavy rain at juvenile states.

3.2. Tree seedlings produced

Seeds of a wide range of tree species were purchased from the farmers which were then distributed to the nursery to be germinated and to produce seedlings. A total of 1,000 kilos of seeds were purchased. The trees species were mostly indigenous tree species which had potential economic values, those included; whitewood *Endospermum medullosum*, sandalwood *Santalum austrocaledonicum*, canarium *Canarium indicum*, Pometia *Pometia pinnata*, Terminalia, *Terminalia catapa* etc. These indigenous tree species are not only timber trees but also those with edible fruits and nuts.

For most of these tree species the time taken for them to produce seeds ranges from three years old for sandalwood and up to ten years for the other tree species. This will mean that for sandalwood as becoming an important industrial tree species for Vanuatu – the young trees will be able to supply sufficient seeds for further planting program of sandalwood.

Details on the seed collection are in the table below.

Seed Collection Details for the FAO Agro-forestry Nursery project				
First Request in September 2008				
Items	Description	Quantity	Unit Price (Vatu/Kg)	Total (Vatu)
Mahogany	Seeds	30kg	5,000vt/kg	150,000
Sandalwood	Seeds	30kg	5,000vt/kg	150,000
Canarium (Nangai)	Seeds	400kg	200vt/kg	80,000
Whitewood	Seeds	40kg	1,000vt/kg	40,000
Pometia (Nantau)	Seeds	100kg	200vt/kg	20,000
Terminalia (Natapoa)	Seeds	20kg	100vt/kg	20,000
T o t a l :				460,000

Second Request in November 2008				
Items	Description	Quantity	Unit Price (Vatu/Kg)	Total (Vatu)
Whitewood	Seeds	24kg	5,000vt/kg	120,000
Sandalwood	Seeds	20kg	5,000vt/kg	100,000
Canarium (Nangai)	Seeds	100kg	200vt/kg	20,000
Terminalia (Natapoa)	Seeds	200kg	100vt/kg	20,000
T o t a l :				260,000
Grand Total		1000kg		760,000

Other species such as the Canarium nut at the age of ten years will start to give nuts and will continue to give till it is a fully grown tree for the timber to be utilized.

Most of these trees are indigenous tree species and already with markets for their produces locally and outside the farmers are really excited to be able to access the planting materials through the project.

3.3. Variety of food and wood products produced

Planting the trees in old garden sites and or new garden sites is where most farmers are growing their tree crops. Most farmers are encouraged to do mostly mix planting of the timber trees and their food crop. For farmers who are more interested in timber can see the benefit from growing other food crop as well in the planting site – in turn can harvest from their woodlots. It is also becoming very popular in Vanuatu for farmers to get seedlings of tree crops and plant with their food crop or as boundaries or line plantings to be able to utilize the timber or poles at the first

3.4. Nursery owners and farmers trained

While establishing the nurseries and growing the seedlings in the field there seems to be quite a number of areas farmers or nursery owners needed to be trained for to acquire the skills and knowledge to help them understand more.

Training for the farmers was conducted in the five different sites proposed at the nursery sites. Training on Pentecost was conducted at Labultamata. Training for Efate was conducted at Epau and that of Malekula was conducted at Lakatoro. On Santo the training was conducted at South Santo. Training on Tanna was conducted at Isangel. Below is a budget on the training for the farmers.

Detail expenditure for Training 2008 - 2009.				
Training additional nursery supervisors and farmers				
Island	S A N T O			
Items	Description	Quantity	Unit price	Total
Hire of venue	Community Hall	(flat rate for 20 participants)	5,000	5,000
Refreshment	Morning & Afternoon	(flat rate for 20 participants)	5,000	5,000
Lunch	Package lunch	(flat rate for 20 participants)	15,000	15,000
Stationary	Patcher papers	2 rolls	2,000	2,000
Marker pens	Permanent markers	3	1,000	1,000
Local transport	Hire of Vehicle	Return trip	8,000	16,000
Hire of Generator	Light in the night	4 per night (fuel included)	7,000	7,000
Accommodation	Community Hall		5,000	5,000
		TOTAL		56,000
Island	E F A T E			
Items	Description	Quantity	Unit price	Total
Hire of venue	Community Hall	(flat rate for 20 participants)	5,000	5,000
Refreshment	Morning & Afternoon	(flat rate for 20 participants)	5,000	5,000
Lunch	Package lunch	(flat rate for 20 participants)	15,000	15,000
Stationary	Patcher papers	2 rolls	2,000	2,000
Local transport	Hire of Vehicle	Return trip	8,000	16,000
Marker pens	Permanent markers	3	1,000	1,000
Hire of Generator	Light in the night	4 per night (fuel included)	7,000	7,000
Accommodation	Community Hall		5,000	5,000
		TOTAL		56,000
Island	M A L E K U L A			
Items	Description	Quantity	Unit price	Total
Hire of venue	Community	(flat rate for 20	5,000	5,000

	Hall	participants)		
Refreshment	Morning & Afternoon	(flat rate for 20 participants)	5,000	5,000
Lunch	Package lunch	(flat rate for 20 participants)	15,000	15,000
Stationary	Patcher papers	2 rolls	2,000	2,000
Local transport	Hire of Vehicle	Return trip	8,000	16,000
Marker pens	Permanent markers	3	1,000	1,000
Hire of Generator	Light in the night	4 per night (fuel included)	7,000	7,000
Accommodation	Community Hall		5,000	5,000
		TOTAL		56,000

Island	T A N N A			
Items	Description	Quantity	Unit price	Total
Hire of venue	Community Hall	(flat rate for 20 participants)	5,000	5,000
Refreshment	Morning & Afternoon	(flat rate for 20 participants)	5,000	5,000
Lunch	Package lunch	(flat rate for 20 participants)	15,000	15,000
Stationary	Patcher papers	2 rolls	2,000	2,000
Marker pens	Permanent markers	3	1,000	1,000
Local transport	Hire of Vehicle	Return trip	8,000	16,000
Hire of Generator	Light in the night	4 nights (fuel included)	7,000	7,000
Accommodation	Community Hall		5,000	5,000
		TOTAL		56,000

Island	P E N T E C O S T			
Items	Description	Quantity	Unit price	Total
Hire of venue	Community Hall	(flat rate for 20 participants)	5,000	5,000
Refreshment	Morning & Afternoon	(flat rate for 20 participants)	5,000	5,000
Lunch	Package lunch	(flat rate for 20 participants)	15,000	15,000
Stationary	Patcher papers	2 rolls	2,000	2,000
Marker pens	Permanent markers	3	1,000	1,000
Local transport	Hire of Vehicle	Return trip	8,000	16,000
Hire of Generator	Light in the night	4 nights (fuel included)	7,000	7,000
Accommodation	Community Hall		5,000	5,000
		TOTAL		56,000

Objective of the training were met with most of the 100 key farmers in the field identified in total and assisted during the training for an ongoing program nursery propagation and tree planting in agro-forestry systems. These key farmers have their own farmers and it is hoped that they will effectively influenced other farmers in their areas in a similar manner.

Training for the farmers had been difficult because of the delay in getting the funds but the farmers do understand and cooperate in the implementation. The training had been fruitful for the farmers as more farmers were made aware of the proper practices needed to be applied in managing their woodlots and or agro-forestry plantings.

4. Major Issues and Concerns in Project Implementation

Problems

Major problem faced in the implementation of this project is the delay in the issuing of funds which there is not a simple way around it.

The other difficult problem faced in the implementation of the project is that since there was some delays resulted in cut of the budget.

There is currently no NPC and NPIO for Vanuatu and it makes if very difficult when for example one PM had to take entitlement to leaves left the project implementation untended to.

5. Recommendations

Personals responsible for finance needed to sometimes just make a call to the PM to let them know what really is happening.

Review of Logical framework needed to be consistent as is with the case of this project. The PM sees the need for more time needed (with new reviews) but is unfortunate with the strict deadlines.

Urgently need for the recruitment of the NPC and NPIO for Vanuatu.

The Agro-forestry nursery project should be continued in Vanuatu for the following sites; Epi, Aniewa, Vanualava, Malo and Maewo.

5. Conclusions

While the project was not able to spend most of the budget that it budgeted for but it managed to successfully address its goal of establishing the bases for increase food and incomes for rural farming households.

Through the project it manages to purchase 1,000kg of seeds of mostly indigenous trees species that were identified through research work done in Vanuatu and distributed to the farmers in the rural areas.

For the continuation of the nursery of the established nurseries in the actually agro-forestry nursery project this project made it possible to provide more planter bags for the nurseries and this will support the nursery programs in Vanuatu for a while.

While the trainings conducted were not that completed at this stage but the forest officers do have the funds now and materials and will shortly be implementing the trainings for the 200 farmers to be important key farmers to take on some of major forestry extension activities in the field. Effectively an estimated 1000 community members are aware of the project activities and will either be directly or indirectly is influenced by the project now and in the near future.

6. Recommendations

The following are recommendations for the continuation of the project.

- Assistance for the nurseries will have to be continued and especially in the area of trainings.
- Department of forests to continue to assess the planting that is currently taking place under the project as most of the plantings could act as seed orchards for the economically potential tree crops.

7. Acknowledgements

I would like to take this opportunity to acknowledge the farmers worked with in the implementation of this successful project. Their interest had created an increase in the number of farmers wanting to access the services from the project.

It is important also to acknowledge the effort put together by the forest officers in the implementation of the project. Especially those colleagues whom had tirelessly continued to follow up on getting the materials sent to the islands. Also at this point to acknowledge the support from the late NPC Mr. Frazer Bule Lei who had ensured that there was going to be funding for this extension. Also want to thank our Director Mr. Livo Mele for sharing a keen interest in the areas of tree planting through the nursery activities which greatly gives importance to this project.

And finally but not least to want to thank colleagues from the FAO office in Apia Samoa for all your support and understanding all through the implementation of the extension of this agro-forestry nursery project. I firstly thank Dr. Vili for kindly considered that it is still that important to can continue this extension of the agro-forestry project. Special acknowledgement goes to Mr. Lauro and Mr. Bismarck and Miss. Rossy whom we own you all much to can move this far in the implementation of the project.

	<p>3. Produce additional tree seedlings</p> <p>3.1 Purchase seeds</p> <p>3.2 Draft and execute contracts for potting of planter bags</p> <p>3.3 Sow seeds</p> <p>3.4 Transplant seedlings</p> <p>3.5 Nurse seedlings</p> <p>4. Distribute additional tree seedlings</p> <p>4.1 Distribute seedlings to farmers</p> <p>4.2 Assist farmers in establishing agro-forestry plots</p> <p>5. Train additional nursery supervisors and farmers</p> <p>5.1 Identify training participants</p> <p>5.2 Request for training funds</p> <p>5.3 Run trainings</p> <p>5.4 Submit training reports</p> <p>6. Monitor and evaluate the project</p> <p>6.1 Prepare and submit progress reports</p> <p>6.2 Prepare and submit terminal report</p>	<p>30 kg of Mahogany seeds; 40 kg of whitewood seeds; 100 kg of <i>Pometia</i> seeds; 200 kg of <i>Terminalia</i> seeds</p> <p>Oil and fuel Office supplies</p>	<p>1,500,000</p> <p>1,000,000</p> <p>20,000</p> <p>Total: 6,303,000</p>	
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Details of Activities to be Carried Out

Activities	Details
1. Construct nurseries 1.1 Conduct meetings with communities 1.2 Identify nursery sites 1.3 Prepare contracts for nursery 1.4 Construct nurseries	Completed during the initial phase
2. Procure additional nursery tools and materials 2.1 Get quotations for tools and materials 2.2 Purchase tools and materials 2.3 Distribute tools and materials to nurseries	Secure 3 quotes for the required tools and materials 200,000 bags; 100 m shed cloth. VUV 1,478,000 Send to RPMU. Make follow up Transport tools and materials to the islands VUV 6,000 per cubic meter x 10 cubic meters = VUV 60,000
3. Produce additional tree seedlings 3.1 Purchase seeds 3.2 Draft and execute contracts for potting of planter bags 3.3 Sow seeds 3.4 Transplant seedlings 3.5 Nurse seedlings	Secure 3 quotes for the required seeds 30 kg of sandalwood; 400 kg of <i>Canarium</i> seeds; 30 kg of Mahogany seeds; 40 kg of whitewood seeds; 100 kg of <i>Pometia</i> seeds; 200 kg of <i>Terminalia</i> seeds Potting: VUV 20 per bag @20,000 per site = VUV 2,000,000
4. Distribute additional tree seedlings 4.1 Distribute seedlings to farmers 4.2 Assist farmers in establishing agro-forestry plots	VUV 1,000 per site @300 farmers x 5 sites = VUV 1,500,000
5. Train additional nursery supervisors and farmers 5.1 Identify training participants 5.2 Request for training funds 5.3 Run trainings 5.4 Submit training reports	Prepare and submit training proposal VUV 20,000 per site x 5 sites = VUV 1,000,000 Submit training report following prescribed format
6. Monitor and evaluate the project 6.1 Prepare and submit progress reports 6.2 Prepare and submit terminal report	Submit monthly and quarterly reports following prescribed format

FAO/ITA/VAN/02 AGRO-FORESTRY IN VANUATU

**REVISED WORK PLAN
July - December 2008**

Main Activities	Sub Activities	J	F	M	A	M	J	J	A	S	O	N	D	Remarks
1. Nursery sites identified	1.1 Conduct meetings with communities													Completed
	1.2 Visit and select sites													Completed
2. Tools and Materials procured	2.1 Get 3 quotations for tools and materials													Ongoing
	2.2 Purchase tools and materials													Ongoing
	2.3 Distribute tools and materials to nurseries													Completed
3. All nurseries constructed	3.1 Prepare contracts for nursery construction													Completed
	3.2 Construct nurseries													Ongoing
4. Tree seedlings produced	4.1 Purchase seeds													Ongoing
	4.2 Prepare contracts for potting of planter bags													Completed
	4.3 Carry out potting of planter bags													Ongoing
	4.4 Sowing of seed													Ongoing
	4.5 Transplant seedlings													Ongoing
	4.6 Nursing of seedlings													Ongoing
5. Seedlings distributed	5.1 Distribute seedlings to farmers													Ongoing
	5.2 Planting of seedlings with farmers													Ongoing
	5.3 Establish Agro-forestry plots													Ongoing
6. Nursery supervisors and farmers trained	6.1 Organize trainings													Ongoing
	6.2 Run trainings													Ongoing

Photographs of Main Activities

Transportation of Materials

Planter bags stored and sorted in vehicle and transported to the ship for shipment to the 5 nursery sites for the project.

Seed Collection

Seed collection by seed collector; species with seed collected were sandalwood, Mahogany and Whitewood.

Nursery Activities

Assist farmers in Sowing of seeds in ground beds and inspection of nursery owned by farmer in the project.

Training for farmers

Department of forest officer Agriculture officer training farmer on aspect of seed collection, design of planting and managing of agro-forestry plantings in the field.