

**FAO SUB-REGIONAL OFFICE FOR THE PACIFIC ISLANDS**

**CONSULTATION ON SEED AVAILABILITY  
SEED ACCESSIBILITY AND SUITABILITY**

**For:**

**For Kiribati, Kingdom of Tonga  
And Vanuatu**

**By**

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## **LISTOF ACRONYMS**

ALD	- Agriculture & Livestock Division
AMMS	- Atoll Motor Marine Services
APSA	- Asian Pacific Seed Association
AVRDC	- Asian Vegetable Research and Development Centre
CePaCT	- Centre for Pacific Crops and Trees
CEAA	- Centre of Excellence for Atoll Agriculture
CEO	- Chief Executive Officer
DSAP	- Development of Sustainable Agriculture Program
FAO	- Food and Agriculture Organization of the United Nations
FSP	- Foundation for the People of the South Pacific
KOFA	- Kiribati Organic Farming Association
LRD	- Land Resource Division
MAFFF	- Ministry of Agriculture, Forestry, Fisheries and Food
MELAD	- Ministry of Environment, Land and Agriculture Development
NGO	- Non- Government Organization
PRAP	- Pacific Regional Agricultural Program
SAP	- FAO Sub-Regional Office for the Pacific Islands
SPC	- Secretariat of the Pacific Community
TOR	- Terms of Reference
TTM	- Taiwan Technical Mission
VAS	- Vanuatu Agriculture Supplies
VRS	- Vaini Research Station

## **SUMMARY:**

A study of vegetable seed availability, accessibility and suitability was conducted in three representative countries of the region in August 2009, to address long-standing issues and problems, and to suggest improvements for the seed situations. It was discovered that this problem of seed supply in the region was common and very similar throughout, although each country had its own specific situations and must be treated accordingly. They all had similar problems with seed availability, seed accessibility and suitability, but at different levels and severity. In the Pacific Islands, if one is to grade the importance of these problems, then seed availability will be graded most important, followed by accessibility and then followed by suitability.

In Kiribati, the seed supply situation is very critical and **must** be addressed immediately.

In Vanuatu, there is only one seed supplier and his seed source is from **only one** seed-company, resulting in him monopolizing the seed supply, with limited seed quality and very expensive seed prices.

In Tonga, despite the various seed suppliers operating in the country, **seed availability and accessibility is very poor, and prices are also high.**

It was very obvious in this consultation that in most countries in the region, there is very minimal involvement by governments in the seed supply transactions. It is therefore suggested that there should be greater involvement by governments, especially MAFFs and better coordination between all seed stakeholders in the seed supply activities, to ensure seed availability, accessibility and suitability.

## **BACKGROUND:**

Under SPC PRAP Project 3 titled “Seeds and Planting Materials”, a series of workshops and meetings were conducted, titled “Improved Seed Supply Strategies for Pacific Island Countries”, beginning in Nadi, Fiji in November 1996, continuing to Tonga and Vanuatu. Despite those workshops, which produced very good recommendations, and fine reports written by expert seed consultants, it is realised today that after more than ten years have passed very little improvements have been seen on the seed issues throughout the region. Today most countries in the region are still having problems with availability, and in countries where seeds are available, they are not accessible to many farmers, and if they are available and accessible, they may not be suitable for their needs and conditions.

It was discovered in the consultation that some countries just did not have seeds available when farmers needed them. In some cases, seeds were available, but farmers did not have access to them, either due to their geographic locations or the price was not affordable by them, and when they had access to the seeds, farmers found that the seeds were of the wrong varieties.

## 1. INTRODUCTION

Under the supervision of the FAO Sub-regional Representative office for the Pacific Islands (SAP), in close collaboration with SPC's Land Resource Division (LRD) in Suva office, the consultant was given the following Terms of Reference (TOR):

### 1.1 Terms of Reference:

- .Conduct market survey of seeds; quantity demanded, quantity supply, source of supply, volume of local production. Also, mention quality and varieties.
- Evaluate the farmer's ability to access seeds in a timely manner
- Survey of the current seed suppliers, and compare to the country reports for each country on PRAP Report No.8
- Evaluate the current and potential seed production capacity in each country, and mention cases where local seed production has been successful
- Evaluate the potential role of any regional or sub-regional Centre as seed suppliers in the region e.g. CePaCT and Centre of Excellence for Atolls
- Identify major constraints and opportunities to seed availability and accessibility
- Review the seed policy in selected countries with stakeholders (variety testing, regional collaboration, seed quarantine and APSA membership)
- Identify key national collaborators for possible future interventions. Determine the benefits of resuming linkages with APSA, AVRDC etc.
- Draft proposals for a set of cost effective strategic interventions, according to the constraints and opportunities identified during the survey and stakeholder discussions.
- Draft a report to reflect the above task and submit for review to FAO and SPC
- Based on FAO/SPC comments, prepare a final report

## 2.0 MATERIALS AND METHODS:

This consultation was carried out in three selected countries in the region, talking to different stakeholders, who are involved in the seed industry, including seed suppliers, farmers of all levels, community groups, MAFFF staff etc. They were asked the question of seed availability, seed accessibility and seed suitability. Responses and comments from different stakeholders were put together and recommendations for seed improvement in the region were made. The consultation was based on the TOR listed above, talking to stakeholders either individually or in groups.

### 2.1 Itinerary:

	<b>Time</b>	<b>Flight No.</b>
<b>Monday 3<sup>rd</sup> Aug. 2009.</b>		
Depart - Nuku'alofa	12.55	FJ270
Arrive - Suva	13.40	
<b>Thursday 6<sup>th</sup> Aug. 2009.</b>		
Depart - Suva	06.05	FJ004
Arrive - Nadi	06.35	
Depart - Nadi	07.30	FJ271
Arrive - Tarawa	10.30	
<b>Tuesday 11<sup>th</sup> Aug. 2009.</b>		
Depart - Tarawa	07.30	FJ270

Arrive -	Nadi	10.30	
Depart -	Nadi	11.40	FJ261
Arrive -	Port Vila	12.20	

### **Saturday 15<sup>th</sup> Aug. 2009.**

Depart -	Port Vila	09.30	FJ260
Arrive -	Nadi	11.55	
Depart -	Nadi	14.00	FJ211
Arrive -	Nuku'alofa	16.25	

## **2.2 Countries Visited:**

Three countries were selected for the study, representative of the region in island size, island groups and race, range of farming activities etc. The countries visited were:

1. Kiribati – to represent the small atoll islands, of the Micronesian race, with majority of farmers being small subsistence/semi-subsistence farmers
  1. Vanuatu – to represent Melanesia, large island groups and vast farming range
  2. Tonga – to represent Polynesia, medium sized island groups and vast range of farming activities and farm sizes.

## **3.0 RESULTS:**

### **3.1 Situation in Kiribati:**

#### **3.1.1 Market Seed Survey:**

In Kiribati, the seed supply situation is straight forward, meaning that there is a very serious problem, and the reasons are known. There is only one seed supplier, Foundation for the People of the South Pacific (FSP) an NGO, which is in the final stage of dying. They only sell remaining seeds now from last year (2008). They use to buy their seeds from Terranova Seed Co. in New Zealand in cans then repack them for sale in smaller packs. These seeds are expensive and the quality is unreliable due to long storage and repackaging.

Because of the above, a number of farmers are able to bring in their own seeds by different means, most probably by illegal means, from relatives overseas. Varieties and qualities of such seeds will be variable, unreliable and may be risky to the country in introducing new pests etc.

**The real seed demand of the country at present is “hidden”** by the operation of the Taiwanese Technical Mission (TTM), which produces thousands of different vegetable seedlings, and distributes them to farmers **free of charge**. They bring in their own seeds from Taiwan carry out some research on new varieties, before multiplication for distribution. They produce and distribute 400,000 seedlings per year, consisting mainly of the following vegetables: Chinese cabbage, cucumber, cherry tomatoes, capsicum, watermelon, eggplant, pumpkins. They distribute these seedlings every two/three weeks Friday. The demand of vegetable seedlings is so high that there is no need for feed back, as every seedling produced

are taken, maybe because they are free of charge, but it also indicates the real high demand for vegetable seeds in the country.

The other seed operating mechanism in the country consists of existing programs by the Agriculture Division, and projects like Centre of Excellence for Atoll Agriculture (CEAA) the idea of producing your own seeds. The Agriculture Division, Extension Section buy seeds from the local seed importer and distributes to farmers in the outer islands. The CEAA runs programs of testing crop varieties suitable for the Atolls and multiplies them for distribution. They also conduct trainings on how to produce own seeds using open pollinated seeds.

### **3.1.2 Farmers Ability to Access Seeds:**

The situation now is bad and is going to get worse. The reliance of farmers from the outer islands on free seeds from FSP via Extension may not be there any more. The easy and free access of most farmers to seedlings from the Taiwanese project will one day come to an end. **What will happen next?** Farmers who miss out from the free seedlings are concerned about the seed supply situation, especially if the Taiwanese Project ends. This is an urgent situation and something should be done now, so seed supply can be maintained.

### **3.1.3 Seed Suppliers Today:**

Kiribati country report in PRAP Report No.8, (1996) reported that the main seed suppliers then were Atoll Motors Marine Services (AMMS), and FSP. Some farmers were able to obtain their own seeds then. Predominant vegetable seeds at the time then were cucumber and Chinese cabbage.

Seed supplier today is almost solely FSP, who is in the final stages of dying. Few farmers are still able to get their own seeds. Obviously, the Taiwanese Project is just filling up this role temporarily but something must be done immediately to improve this situation. The operation of existing organisations dealing with seed supplies, like the Centre of Excellence with their own seed production programs should be strengthened and supported.

### **3.1.4 Current and Potential Seed Production Capacity:**

There is very little current and potential capacity for any seed production in the country. The only existing local seed production is located with the Centre of Excellence for Atoll Agriculture, which is quite successful. This program encourages different farming communities to have access to open pollinated seeds and enable them to produce their own seeds. But such programs will initially rely on some seed sources to begin with. This is where a regional centre as seed supplier will be needed.

### **3.1.5 Potential Role of a Regional or Sub-regional Centre as Seed Supplier:**

This is something that is very important and urgently needed in Kiribati. The uncertainty of their only seed supplier, and the increasing seed demands in the country will require something immediately to cater for their future seed needs. Also it is important to mention at this stage that the effects of climate change and world food crisis will require strengthening self reliance in such areas of seeds and planting materials.

It has been agreed by the people of the Agriculture division that a regional centre preferably at SPC, to play the role of importing seeds from Seed Companies, stored and distributed to the

islands. The involvement of SPC in this centre will also enable them to help with any quarantine issues in the seed imports.

It was discussed also that in order for this mechanism of seed supply to work well, the Agriculture division should act as the national centre to send the country's seed requirements to the regional centre, and receive the seeds for distribution or sale. This set up is very important for Kiribati, and it may be the most suitable for them now.

The operation of the CEAA in Kiribati should be made use of, and supported to continue with their existing program of training in seed multiplication and distribution.

The national seed centre should make use of the CEAA set up and experience to play this role of seed multiplication, production and distribution.

### **3.1.6 Major Constraints and Opportunities to Seed Availability and Accessibility:**

#### **Constraints:**

- Geographic location and the scattered, small isolated islands, make it difficult to supply from a central point. The further away the consumer (farmer) from the original seed source, the more the problems are likely.
- Many of the farmers are small subsistence/semi-subsistence farmers, with very small and limited seed requirements.
- The smallness of islands and farmers make it difficult for any seed supplier to operate profitably.
- The absence of any large farmers who may be able to import their own seeds from large overseas seed companies.
- The seeds available are mostly hybrid seeds, which are expensive and require use of other inputs and high management practices.

#### **Opportunities:**

- The presence of the Centre of Excellence for Atoll Agriculture, to support the communities and to provide training in seed production.
- The operation of the Taiwanese Technical Mission, which provide free vegetable seedlings in thousands, for people who would normally use seeds. However, this is only a temporary opportunity, and as such, local communities should make use of it.
- The availability and willingness of a regional centre at SPC who can assist with small countries like Kiribati with any problems in Agriculture including seeds.
- The operation of farmers groups like Kiribati Organic Farming Association (KOFA), whose main interest is vegetable growing, and who are very desperate for good quality, cheap seeds. They are most willing to support any project on seed improvement. They are even interested in playing the role of seed supply, given assistance and support. This association has about 400 members throughout the country, and their main interest is promoting organic farming amongst its members, who produce mainly vegetables both for the markets and home consumption.

### **3.1.7 Review of the Seed Policy:**

There is no seed policy known in the country. There is no variety testing, and varieties imported are ones that have been recommended some time ago. New varieties imported now are based on their performance. There is also no real seed quarantine policy, which may make importing seeds from new seed companies difficult. However, discussions were held with Agriculture and Quarantine that they should work closely together to improve on the seed supply situation in the country. This might mean re-looking at the Plant Quarantine Acts so as to allow import of seeds from other cheap seed sources.

It was felt and stated at the discussion that perhaps Seed Policy is not too critical at this stage, but work should start immediately on developing a seed supply mechanism, which is simple and accessible to every one.

### **3.1.8 Key National Collaborators for Possible Future Interventions:**

It was clearly agreed that a number of key national groups who are involved and interested in use of seeds, must work together and be fully committed in helping with the seed development program. The situation with Kiribati is very urgent, and serious interventions by specific bodies must be done immediately to improve the situation.

It is important that Agriculture must take a leading role here in trying to set the seed industry on its feet. They are prepared to coordinate the country's seed needs and bring to a central point and ready for importing and/or distribution. It is important that all national groups who are using seeds give their seed needs to this national centre. The national seed centre will then seek help from SPC – CePaCT to obtain these seeds from overseas seed companies including AVRDC, and stored there ready to send to Kiribati. AVRDC is a well known vegetable seed research centre who can produce a lot of open pollinated vegetable seeds.

At this early stage, all seed requirements must come through this channel, the Agriculture people knowing best the varieties to import and most suitable. Other groups and organisations using seeds should also be using this system. This will be advantageous also because SPC who is the regional centre will be in a better position to look at the seed quarantine issues if needed be, before sending the seeds.

It is envisaged that once the seed transaction is running smoothly, then Agriculture will be in the best position to give the important role of supplying seeds for the country, to a group who can take over successfully.

Kiribati Organic Farming Association (KOFA). is one group whose members are widely distributed, and their main interest is vegetable production, both for cash and home consumption. Talking with the members of this group indicate their keenness to take over this role of handling the country's seed supply in future. This association with its 400 members promotes the use of organic farming mainly of vegetables.

However it would be better for Agriculture Division to work together with CEAA and make use of the existing role of CEAA to continue with their role of bulking of seeds, multiplication, training and distribution. KOFA groups could assist with seed distribution in the outer islands, where they have members distributed.

### **3.2 Situation in Vanuatu:**

#### **3.2.1 Market Seed Survey:**

The seed supply situation in Vanuatu is different from that in Kiribati, although the problem of availability, accessibility and suitability is quite similar throughout the Pacific islands. Vanuatu Agricultural Supplies (VAS), which is a private company, is the only seed supplier in the country, although some vegetable farmers do import their own seeds. VAS is operating well by selling a wide range of products other than agricultural supplies and this ensures the viability of their seed business. Some seed retailers throughout the country, buy their seeds from this seed supplier.

Unfortunately, this seed supplier imports seeds from only one seed company namely Terranova, in New Zealand. This limits the quality and choice of seeds available and also explains why farmers complain about the seeds being too expensive. In most cases, seed availability is well covered by this private supplier however, seed is not always accessible to many farmers, especially small scale farmers because the seeds may be too expensive or difficult to access by those farmers located far from Vila, especially in the outer islands. In some cases seeds are both available and accessible to farmers, but may not be suitable for their situations, needs and conditions.

#### **3.2.2 Farmers Ability to Access Seeds:**

As there is only one seed supplier in the country, there is no competition and because there is only one Seed Company supplying this supplier, the seed supplier is in the position to decide what the farmers will plant, and to basically monopolise the seed industry. Although the seed supplier claims that he is providing a good coverage of seed, there are counter-claims from farmers, especially small isolated farmers that they are not able to access seeds, and in some cases when the seed get there, the seed quality is not reliable and prices are too high.

A number of large scale farmers, who are not satisfied with the present seed availability and accessibility, are willing to import their own seeds individually from overseas seed companies.

#### **3.2.3 Seed Suppliers Today:**

As reported in PRAP Report No. 6 (1996), the only seed supplier then was Vanuatu Agricultural Supplies, who imports the seeds and different local retailers buys from them and resell to farmers in different areas. This is still the practice today, with VAS growing much bigger and selling greater varieties of different products, other than agricultural supplies. It can be seen that as there is only one seed importer, the reselling of these seeds by other local suppliers results in high seed prices.

#### **3.2.4 Current and Potential Seed Production Capacity:**

Currently there is no seed production capacity in the country and the potential for having one in the future is very slim. However the Department of Agriculture extension is starting to show some farmers how to start collecting their own seeds from open pollinated varieties. This practice was also encouraged by the SPC/DSAP Project which also developed the practice of "Own seed Production".

### **3.2.5 Potential Role of a Regional or Sub- regional Centre as a Seed Supplier:**

Most stakeholders consulted, with the exception of some seed suppliers, agreed on the need for a regional or sub-regional supplier and felt it was necessary and would help to solve and supply issues. A regional centre, like at SPC will be most convenient to help with the seed supply problems in accessing seeds from the many different seed companies in different parts of the world, including Asian countries. This regional centre should also be able to address the Quarantine issues regionally, and to fulfil each country's quarantine requirements accordingly, before seeds are sent to each country.

### **3.2.6 Major Constraints and Opportunities to Seed Availability & Accessibility:**

#### **Constraints:-**

- As with other countries in the region, there is the common problem of small islands scattered in the vast ocean limiting the accessibility of seeds, and resulting in unreliable quality and a high price.
- The absence of a national centre or body to look after the seed supply situation in the country. This includes research facilities, a seed legislation or seed policy etc.
- The operation of **only one** seed supplier who imports from **only one** seed company, does limit the seed quality, and resulting in the high seed prices often quoted.
- Lack of any coordination and collaboration between the stakeholders. They seem to rely on what is available only and do not know what to do with their problems.
- The vast variation in farming activities, farm sizes and differing farming communities and their differing seed requirements. This means that any solutions designed to address one group's problems may not be suitable for others.

#### **Opportunities:**

- There are large vegetable farmers in the country who are able to import their seeds from other seed sources overseas at a cheaper price.
- There is an increasing demand for vegetables in the country, mainly due to the increase in the tourist industry, and also the many community programs promoting the increased use of vegetables in the diet for better nutrition and health.
- There are opportunities of regional and sub-regional organizations that are quite capable and willing to support and assist islands in the Pacific with their long standing problems on seeds. These include CePaCT/ SPC, Asian Pacific Seed Association (APSA) etc. APSA has been quite helpful to most Pacific countries through SPC during the last decade.
- There are many well known seed companies in Asia, who are quite capable of producing seeds most suitable to our conditions, at a much cheaper price. These countries include: Japan, Thailand, Taiwan, China, India, etc.
- The involvement of SPC in any seed importation, will support a country in meeting quarantine needs.

### **3.2.7 Review of Seed Policy:**

Like most other Pacific Island countries, there is no known seed policy in Vanuatu, other than the Quarantine procedures for any imported plant materials, including seeds. There is no set policy on varieties and variety testing etc, as well as regional collaboration. The Director of Quarantine is quite keen to look into the quarantine aspects of seed import, so as to facilitate import of seeds from seed companies in Asian countries which have not yet been accessed to.

### **3.2.8 Key National Collaborators for Possible Future Interventions:**

The seed situation in Vanuatu is more complicated than seen in Kiribati. The seed supplier operating in the country is running very well and is making a good profit. However this importer is monopolizing the seed industry and importing seeds from only one seed company. This results in poor seed accessibility by farmers at all levels especially the small- scale, isolated farmers who have logistical problems in accessing seeds or afford the price. Some of the known vegetable farmers are even importing their own seeds for the reasons mentioned. After talking and discussions with different stakeholders, it was generally agreed that some interventions should be made to try to alleviate this problem. The Director and some senior staff of the Agriculture Department decided that they should be taking a leading role, for example, the establishment of a national seed centre to handle all the seed issues in the country. This seed centre would coordinate all seed requirements and any problems related to seed supply.

This seed centre will then collaborate with SPC, a regional body to assist with accessing their seed needs from different seed companies, including Asian seed companies. This national seed centre will run continuous trainings to train and teach its stakeholders how to produce their own seeds. The centre will be equipped with facilities to produce seeds in the proper manner. This will start from planting, harvesting, seed collection, seed extraction, drying and packaging.

### **3.3 Situation in Tonga:**

#### **3.3.1 Market Seed Supply:**

The market seed supply situation in Tonga is very similar to other Pacific island countries. Seeds are imported by local seed suppliers from different seed companies in overseas countries. These suppliers then sell seeds to the farming communities, from small scale, semi-subsistence farmers to big, fully commercial farmers. Most seed suppliers do sell seeds as well as other agricultural supplies to help make it a viable business. Some farmers are also able to import their own seeds from different seed sources overseas.

The main complaints about seed supplies in Tonga include:

- Availability of seeds is often unsatisfactory, meaning that when seed demand is high, seed supply is not often there. Farmers are desperate for seeds then.
- The quality of seeds is very variable and generally unreliable. Seeds are often kept on the suppliers' shelves for too long, affecting the quality unknown to the farmer.
- Some seed suppliers import seeds from only one seed- company, which limits the quality and choice of seeds they supply.
- The seeds imported from these companies are mostly hybrids which are too expensive for farmers, especially small scale farmers, hence the complaints about high seed prices.

There are five seed suppliers in the country, and one of them just closed down a few weeks ago, and one other is just managing to survive. Two other suppliers, also deal with other agricultural supplies, and are owned by big farmers, who are also exporters.

#### **3.3.2 Farmer's Ability to Access Seeds:**

Although there are five seed suppliers operating in the country, many farmers are complaining that 2009 is a bad year as far as seed availability and accessibility are concerned. Their seed

demands have not been met satisfactorily. When seeds are available and accessible, they are not usually the varieties required, and/or the seeds are too expensive. Some farmers found that they had to access seeds from elsewhere in order to satisfy their seed demands. The total quantity of seeds recorded by the Quarantine and some Seed Suppliers as imported in 2008 was a very small quantity indicating that seed availability during 2008 was very poor (Annex 1). As previously stated the comments from some of the farmers interviewed in this consultation stated that this year (2009), is even worse than 2008.

### **3.3.3 Seed Suppliers:**

The PRAP Report No.8 (1996), country report for Tonga stated that only one seed supplier was operating in the country. In 2009 there are five seed suppliers operating, but just before the consultation, one supplier had closed down, and one other supplier was in the final stages of closing down. Two remaining suppliers are owned by two commercial farmers who also sell other agricultural supplies as well as seeds. The other supplier sells seeds in a motor parts shop. One of the two main seed suppliers imports seeds from one seed company, namely Terranova, New Zealand. The other supplier is importing seeds only from South Pacific Seeds, New Zealand, and another seed supplier is importing seeds only from Venture Seed Company in New Zealand. Thus, seed source is quite limited although there are a few seed importers.

### **3.3.4 Current and Potential Seed Production Capacity in the Country:**

Currently there is no seed production unit or centre in the country to look after the seed requirements. There are only a few fruits and vegetable species from which farmers can collect and produce their own seeds from. These include crops like papaya, and some open pollinated vegetable like watermelons, OP Tomatoes, cucumber, capsicum etc.

However there is potential for a seed production centre to be established, with some facilities already existing in Vaini Research Station (VRS).

Recently, a SPC-DSAP Project was launched in the country, to promote and start a program of seed production process of one of the popular legume cover crops- Mucuna bean, which is used worldwide. This could lead the way to a seed production unit which will expand to the vegetable seeds.

There is also a section in the Women Development Division of MAFFF, which is starting already a program of "Own Seed Production" for the women groups.

### **3.3.5 Potential Role of a Regional or Sub-regional Centre as Seed Supplier**

It is suggested that this could be used as a model for the Pacific Island countries, who all supported the following set ups:

The idea of a regional centre with this role was very much welcomed by many stakeholders, especially the government (MAFFF), some seed suppliers, farmers etc. The stakeholders felt that such a centre could be located at SPC with its facilities and expertise they should be able to assist the countries in the region.

The national seed centre would be responsible to present their country's seed requirements for a certain period, possibly six months or so, and the regional centre would then search all seed companies for the seeds required at the lowest possible price, and bring to the centre, stored there ready to be delivered to countries involved when they are ready to receive those seeds. This will prevent long storages at the small island countries under Tropical conditions, resulting in rapid decline in seed viability.

This is a very important regional centre to which countries in the region will look upon for solving their seed problems and requirements. However, the success of such a centre will depend very much on how well national centres will operate and collaborate.

### 3.3.6 Constraints and Opportunities to Seed Availability and Accessibility

#### Constraints:

The constraints to seed availability and accessibility are very similar throughout the region although the severity varies from one country to another. The following were found to be constraints to the seed supply situation in Tonga:

- The difficult nature of any seed suppliers to operate profitably with small seed requirements being provided by big overseas seed companies.
- Lack of or very minimum involvement of the government, particularly MAFFF in the seed transactions, beginning from the seed company to the farmer's gate. This results in the farmer buying a certain seed variety with no guarantee as to seed quality, until after he has made the purchase.
- The vast differences between the farming communities which include large scale commercial farmers, medium size semi-subsistence farmers, small scale semi-subsistence farmers, community group farmers (women, youth etc.). Despite this vast difference, the seed supply provided is very limited and is beneficial only to some of the farming groups e.g. Concentration of seed imported on hybrid seeds is suitable mainly to large commercial farmers, while small scale farmers seed needs are not provided.
- The operation of five seed suppliers in a small country like Tonga, and to supply very small seed quantities of seed requirements is in itself a major constraint. How can they operate normally in a very small market? **Thus we find that instead of competing for a lower seed price, the competition is to survive by increasing the prices, thus the continuing complaints regarding high seed prices.**
- One major constraint of the seed industry in all countries visited in the consultation is the reliance of the local seed suppliers on only one or two seed companies e.g. many seed suppliers are buying their seeds only from Terranova in New Zealand. Some farmers have commented that they can get the same seeds cheaper from other sources.

#### Opportunities:

Up until now, there have been very limited opportunities to seed availability and accessibility to farmers. However, these are some of the opportunities:

- Presence and operation of various farming groups and community groups, who have started the process of own seed production. These need encouragement and support e.g. SPC-DSAP seed production project, women development vegetable growing groups etc.
- The current agricultural development Project with Stabex funding aimed at boosting agricultural export, stresses the importance of securing a good and reliable seed source and supply to cater for the increasing acreage of crops, especially vegetables, to be planted for export.
- There are available, unused human resources and facilities which provide a good starting point of establishing a seed centre in country. These would need some support to start a seed production unit for ensuring improvements in seed supply.
- Availability and access to various regional projects which are dealing with areas related to seeds e.g. Food Security Projects funded by FAO, The CePaCT, which is a centre at SPC working with different aspects of crops and trees.

### **3.3.7 Review of Seed Policy:**

As with other countries visited, there is no seed policy in place indicating that anybody can do anything with seeds, without very much opponents. The only policy related issue to seeds is the Quarantine requirements for importation of plants and plant materials. Seed importers and suppliers can import any varieties without knowing how well they will perform in the country.

### **3.3.8 National Collaborators for Future Seed Improvements:**

Consultation and discussions with stakeholders revealed the fact that because of the limited sources of seed companies providing seeds, it was felt that other seed companies should be investigated, especially Asian countries seed companies. It was said that their seeds supplied will be more suitable to our conditions, and much cheaper.

It was stated by some stakeholders, especially farmers, that the problem with seed supply in Tonga is the very minimum involvement of government in the seed industry, especially MAFFF. This means that majority of farmers have access to seeds made available by seed suppliers, but have no idea of how these seeds will perform in season and off-season. This kind of information could be provided by MAFFF staff.

It is considered also that with the involvement of MAFFF in the seed industry, they are in a better position to link up with overseas seed agents e.g. APSA, AVRDC, etc. The advantages of linking with these seed companies, seed associations and other seed agents will be to have access to a wider variety of seed sources. This thought should also be considered as suitable for use in other island countries and not restricted to Tonga.

An attempt was made during the consultation to separate those problems and issues most common to all countries and those specific to each country.

#### **Problems/Issues Common to All:**

- All shared the problem of unavailability of seeds at the right time. This means right varieties are not available at the right season.
- Seed prices are high in all countries visited, and this seems to be common in all countries in the region.
- Small scattered islands, thus seed requirements are in small quantities and are difficult and expensive to supply.
- Very minimum or no involvement by governments in the seed supply system
- Limited seed imports to “Traditional Seed Companies” like Yates (NZ), Petoseed Co.(USA), Takii Seed Co. (Japan), also limits seed quality, and seed choices.
- For the problems mentioned, there is a need for key national collaborators for possible future interventions to solve their seed problems. Every country should form a national seed body to take care of their seed problems. This national seed body to consist of representatives of all stakeholders, both from government and private sector. This national seed body should take care of all issues regarding seeds in the country. They should also be able to collaborate well with other overseas seed agents and seed companies. They must realize the benefits of resuming linkages with such seed agents like APSA, AVRDC etc. as this will open up opportunities for seed companies from Asian countries.

### **Problems Specific To Countries:**

- In Kiribati, the problem of no local seed importer now is critical and need be addressed as soon as possible. Fortunately CEAA should be made use of with the help of Agriculture Division to work closely with the regional seed centre at CePaCT, SPC to look after the country's seed requirements.
- In Tonga, the operation of five seed importers in such a small market is a problem. Instead of a competition for a lower price, the competition is for survival, resulting in higher prices.
- In Vanuatu, the operation of a sole seed importer seems to cause a problem of monopoly, where customers have no second choice or alternative.

### **Situation in Fiji:**

From the brief visit in Fiji, this much can be said about the seed supply in Fiji. Some seeds are produced in Fiji by the Research Division of the Department of Agriculture. About 40-50 kg. seeds are produced by the Research Division per year, consisting of two varieties of egg plant, two varieties of Tomatoes and chilli, papaya, and pulse seeds like beans, cowpea, pigeon pea and mung beans.

Other vegetable seeds are imported by the 2 major seed importers, namely Hop Tiy &Co. Ltd. and Morris Hedstrom. The manager of Hop Tiy Seed Co. stated his desire to open up seed import from Asian seed companies. The location of Fiji makes it easier for some seed importers in other island countries to import their seeds from this Seed Importer, who is offering a competitive price to the prices of their local seed suppliers.

It is interesting to note that this brings in the idea of establishing a regional seed centre in Fiji to distribute seed requirements from different countries in the region.

#### **4 CONCLUSIONS:**

At the end of the consultation, all the selected countries visited generally agreed that the seed industry is difficult to operate in the region because it deals with small, scattered and irregular seed requirements. This results in the seed suppliers buying small seed quantities from seed companies, which means high prices are passed to the farmers..

It was also pointed out that one of the problems with seed supply in the region is the lack of or minimum involvement of the government, especially MAFFF, in the seed industry. This means that much of the seed varieties imported are based on the seed company's conditions should be carried out by MAFFF Research. The Ministry should then be responsible for making the final recommendations for seed varieties to be imported.

It was also observed that another problem with seeds in the region is the limitation of seed imports by seed suppliers to "traditional seed companies" e.g. Yates/Terranova. This limits the quality of seeds imported and also resulting in much higher prices. There is the opportunity of looking at Asian seed companies which will be cheaper and also more suitable to our local conditions. This should also allow more open pollinated seed varieties, which is more appropriate to majority of farmers.

It was also generally agreed by the countries consulted that there must be an integrated approach and collaboration by both national and regional bodies to assist in developing a more sustainable and reliable seed supply to ensure good seed availability, accessibility and suitability.

One clear observation made in the countries visited was: when the seed business was controlled solely by the private sector, then seed accessibility and suitability was problematic. The majority of the farmers who are basically small to medium sized farmers either suffer from high seed prices, or unsuitable varieties of seeds i.e. seeds may be available, but are either not accessible or not suitable.(do not perform well under their conditions).

In the case of Kiribati, and it may be the same in some countries not visited, there is an urgency for the country to immediately address the seed issue and develop a simple and workable seed system to take care of the seed supply. This seed supply system should attempt to address the seed problems of the majority of farmers in the country. This might mean an initial intervention by government to set up, and then gradually allow farming groups to takeover.

#### **5 PROPOSALS:**

- That the Ministry, Department or Division of Agriculture in each country forms a national seed body or seed centre to handle the seed supply situation. This body should be within Agriculture, consisting mainly of Extension, Research, Quarantine and any community groups, or existing projects using seeds as a major project component e.g. community groups vegetable gardens, seed saver or own seed production projects etc.
- In smaller countries especially, as in Kiribati, this seed body should be able to estimate and identify the country's seed requirements for a certain period e.g. for the next six months or next year. This is where Extension workers and community groups will be

useful. This information will then be passed on to a similar regional body or centre for further actions.

- A regional seed centre should be set up preferably at CePaCT-SPC to link up with the national seed centres. Provisions should be made to support and extend the existing facilities at CePaCT to cater for the regional role of assisting national seed centres in the region and their seed requirements. As for Atolls, CePaCT will link to CEAA in Kiribati, who could evaluate new lines and bulk for use by Atoll countries including Kiribati.
- A Seed Project officer to be employed at CePaCT to handle all seed requirements from national seed centres, and to carry out trainings in seed production in countries. To seek seed companies overseas especially in Asian countries, details of these companies and the seed work they do, and make this information available to countries in the region. The national seed centres will then present their seed requirements to the regional seed centre to order in bulk from the seed companies. This will be stored in the regional centre under good storage conditions, ready for delivery to each country when they are ready for it.
- In countries like Kiribati, this may be the only seed supply system used, i.e. through the national seed centre. However, in other countries like Tonga, Vanuatu and many others, private seed suppliers can buy seeds direct from their own seed companies, without using the national seed centre. However, they can if they like, make use of the regional centre if they prefer cheaper seed prices.
- The national seed centre will have a set up for Research Division of Agriculture, to conduct research on any new seed varieties, to select before recommending new varieties as suitable for use in country. This information will then go to the local seed suppliers and the national seed centre for the purpose of ordering either through the regional seed centre, or directly from seed companies.
- That once the national seed centre is well established, a national seed policy should be developed, in addition to the current Quarantine requirements for importation of plant parts. One of the first clauses of a national seed policy is that all new seed varieties to be imported must be tested first by the national seed centre and approved before it can be sold or distributed for planting.
- National seed centres can further develop an extra role of seed collection and seed production in the centre. This will be made possible with Open Pollinated seeds, still available from seed companies. Staff from this centre can further train farmers who wish to produce their own seeds locally. This will greatly reduce seed costs, and farmers' seed expenses.

## **6 RECOMMENDATIONS:**

That the list of proposals presented be accepted for implementation by countries in the region with the assistance of SPC, in order to improve the Seed availability, Seed accessibility and seed suitability in each country.

Each national seed body to design a simple structured, but workable seed centre to address the seed issues of all farmers' levels. This national seed centre is available for use by all stakeholders, including farmers of all levels, community groups, seed suppliers etc. The success of such a national centre will depend on the commitments made by all the stakeholders. They should make good use of the regional set up at SPC, who will do their best to improve seed availability, seed accessibility and seed suitability in the small Pacific islands.

Each country could start with a seed Body to look at the issues and see how best to address them at the national level. What are their seed requirements; what are the training needs, etc. As mentioned earlier some issues are common to all countries, as well as some are country specific, and should be treated accordingly. Obviously Atolls are more likely to be affected by climate change, and this has to be considered too.

In the first instance, the regional centre could provide information as to seed availability, and then work with the countries to facilitate access whether directly or through either CePaCT or CEAA. The regional/sub-regional centre could support training in seed production also and ensure expertise is kept up-to-date and new material, especially in the light of climate change and changing needs is made available and is evaluated.

## **7 ACKNOWLEDGEMENTS:**

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- The Director of LRD, CePaCT advisor and staff at SPC for their time and contributions during discussions.
- Director, Deputy Director and staff of ALD, Quarantine Officer, FSP Officer, President and members of KOFA, Leader of Taiwanese Technical Mission in Tarawa, Kiribati for their time and contributions during the consultation.
- Mr. Ruben Markard, Director and senior staff of the Agriculture Department in Vanuatu, the Director of Quarantine, Manager of Vanuatu Agricultural Supplies, Vincent Lebou, and vegetable farmers visited in Vanuatu.
- The Director of MAFFF in Tonga, Mr. Penisimani Vea, Director of Research, MAFFF, Dr. Viliami Manu and staff of MAFFF.
- S. Tsutomu Nakao 11, CEO, Growers Federation of Tonga, ex-manager Farm Agro Supply, and Commercial Farmer/Exporter for the very strong views.
- Mr. Minoru Nishi (Senior & Junior), for their constructive comments and support
- Mr. Mana Latu, Tevita Tapaevalu and other vegetable farmers for their useful comments
- Funding of the whole consultation and travel arrangements was by FAO SAP. They are acknowledged with great appreciation.

## **8 PEOPLE MET IN THE CONSULTATION:**

### **8.1 Meetings in Suva Fiji:**

#### **8.1.1 Meeting with the Director of Koronivia Research Station- Moti Lal Autar**

The Research station is producing 40-50 kg. of seeds per year, consisting mainly of 2 varieties of eggplants, Tomato varieties Alton and Alafua Large, and Chilli. These are made available in 10-20 gm. packages, easy and accessible to farmers.

-Other seed requirements of the country are imported by the major seed importer: Hop Tiy & Co. Ltd, and Morris Hedstrom Ltd which is the other seed importer. Much of these imported seeds are hybrids. They are expensive and require heavy use of inputs: fertilizers, chemicals etc.

-Some farmers extract and produce their own seeds, esp. with cucumber and papaya

-25 to 40 kilos papaya seeds of the Hawaiian Solo variety is imported per annum. Then the Research Station produces 50,000 seedlings per year and sold to farmers at 50 cents each. As mentioned, a few farmers produce their own papaya seeds.

-Rice seeds are also produced on station for farmers, a total of 15 tons seeds

-Pulse seeds also produced include beans, cowpea, pigeon pea mung beans etc.

#### **8.1.2 Meeting with Steven Yam – The Owner and Manager of Hop Tiy Co. Ltd.**

- This is the main seed importer in Fiji, who is also supplying seeds to some other Pacific island countries. He has been in this seed business for a long time and he had a few interesting comments on the seed issue.
- Seed business in the Pacific region is very difficult because you are dealing with vast tiny islands with their small seed requirements, to be provided from very large seed companies, very far from the Pacific. These big seed companies are mostly interested in handling huge seed orders, always profit driven.
- This means that with small island countries in the region, it is very difficult to secure seeds from very big seed companies, because they will provide seeds only to make a profit
- Seeds from these traditional seed companies are becoming more expensive, and less suitable to the islands different environmental conditions.
- It may be high time to look elsewhere for seed sources, which may be cheaper, more adaptable to our conditions and serve our purpose better. South East Asian countries have many known seed companies who can provide for our needs.
- In considering the above option, the countries will have to look at their Quarantine requirements for plant import and see how this can be done, and clear seeds from these Asian seed companies.

#### **8.1.3 Meeting With ‘Aleki Sisifa and Siua Halavatau: Land Resource Division/SPC**

There was an in- depth discussion on the issue of the seed problem in the region, trying to pinpoint the real cause. We also agreed that any seed business in the region is very difficult for the reasons mentioned. Our discussion came up with the following:

- The seed requirements of large commercial farmers cannot be tackled together with those of small subsistence/semi-subsistence farmers, especially in very small islands. They must be treated separate.

- It was agreed that S.E Asian seed sources should be investigated and looked at, and this should provide for the farmers in category 2 above.
- Some countries to make use of any existing seed supply system to improve on and develop further e.g. Kastoms Gardens in the Solomon Is., DSAP project in Kiribati (Centre of Excellence for Atoll Agriculture).
- To open up other seed sources e.g. S.E.Asian countries: Thailand, Taiwan, India, Phillipines etc. Traditional seed companies from New Zealand, USA etc. carry out their seed research under controlled conditions, which differ sometimes from natural environmental conditions in the region, including different day length.
- The main problem with getting seeds from these countries will be Quarantine requirements, which may require Pest Risk Assessments, before seeds are allowed
- .Discussions with **Mary Taylor, CePaCT- SPC Advisor**, was centred in the same areas discussed with 'Aleki and Siua. The problem with seeds in the Pacific is a serious one, and is very complex. There are so many linkages and lose ends which need to be tied together before any seed supply set up will be of any success.
- The best approach is for each country to see where they are, and work from there. Support and facilitate what is already in place, and gradually improve from there. Develop a seed supply mechanism, which is simple and most appropriate for the majority of farmers in the country.

## **8.2 Meetings in Kiribati: 6<sup>th</sup> -10<sup>th</sup> Aug.**

### **People Met at Kiribati.**

Arrived at Kiribati on Thursday 6<sup>th</sup> August and left on Tuesday 11<sup>th</sup> August. There was only time for appointments for one and a half days, as there was a long weekend, Monday 10<sup>th</sup> being a public holiday. The following people were met during the visit:

- Deputy Permanent Secretary of the Ministry of Environment, Land and Agriculture Development (MELAD). Agriculture is under this Ministry.
- OIC, Centre for Excellence project for the Atolls – Tokintekai (DSAP).
- Director of Agriculture & Livestock Division (ALD) of MELAD – Kinaea
- Deputy Director ALD – Tianeti, and staff of ALD
- Kiribati Organic Farming Association (KOFA); members of this association

## **8.3 Meetings in Vanuatu: 12<sup>th</sup> – 14<sup>th</sup> August 2009.**

### **People Met at Vanuatu:**

Arrived at Vanuatu on August 11<sup>th</sup>, and appointments were organized to start on 12<sup>th</sup> August, 2009. The following people were met during the visit to Vanuatu:

Ruben Markard	-	Director of Agriculture
James Wasi	-	D/Director of Agriculture
Francois Wabak	-	Horticulturist/ Dept. of Agriculture
Benuel Tarilongi	-	Director Quarantine
Alan Sand	-	Manager Vanuatu Agricultural Supplies
Vincent Lebou	-	Root Crops/ TANSO Project
Dick Eade	-	Vegetable Farmer.
??	-	One large scale vegetable farmer

#### **8.4 Meetings in Tonga:**

##### **People Met in Tonga:**

- Mr. Mana Latu            A large scale, full time vegetable farmer
- Mr. Tevita Tapaevalu - A large scale, part time vegetable farmer
- Dr. Viliami Manu       - Director of Research, MAFFF
- Mr. Penisimani Vea    - Director of Agriculture, Forest Fisheries and Food (MAFFF)
- Mr. Toutai Vaea        - A nursery man producing vegetable seedlings for sale
- Mr.Sione Foliaki       - Director of Quarantine
- Mr. Minoru Nishi JR   - A seed importer/ Large scale Farmer and Exporter
- Mr. Minoru Nishi SR   - A retired farmer- exporter.
- Mr.Tsutomu Nakao 11 - CEO- Growers Federation of Tonga; former manager of Farm-  
Agro- Supplies and a large commercial farmer/exporter
- Mr. Kamilo ‘Ali        - SPC- DSAP Project Officer/ MAFFF staff.

## 9. ANNEXES:

### 9.1. SEED IMPORTS TO TONGA FOR YEARS 2007 & 2008:

#### 9.1.1 Seed Import Recorded by Quarantine:

<u>Vegetable Seed</u>	<u>2007</u>	<u>2008</u>
<u>Spp.</u>	<u>Kg.</u>	<u>Kg.</u>
Beans	80	7
Head Cabbage	4	5
Carrots	6	14
Capsicum	2	2
Cucumber	2	12
Eggplant	1	4
Lettuce	1	5
Onions	86	6
Snow pea	100	-
Spring Onions	-	6
Sweet corn		
Tomato	2	6
Watermelon	5	155
Zucchini	1	-
<b>Mixed Vegetables</b>	-	200
Squash ( for Export)	745	614

#### 9.1.2 Seeds Imported by Nishi Trading Co. Ltd. (Seed source: South Pacific Seeds, N.Z.)

<u>Vegetable species</u>	<u>Variety</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
		<u>Qty</u>	<u>Qty</u>	<u>Qty</u>
C/Cabbage	Pak choi sumo	10,000sds	120,000sds	100,000sds
“	Joi Choi	-	-	100,000sds
H/Cabbage	Summer cross	100,000sds	256g.	-
“	Atlas	-	34g.	-
Beet root	Red Ace	1.5kg.	4.5kg.	-
Egg plant	Black knight	4000sds	12,000sds	-
Basil	Stella	300g	-	-
Chive	Buster	300g	-	-
Cariander	Marino	300g	-	-
Parsley	Award	300g	-	-
“	Italian Pl Leaf	300g	-	-
Lettuce	Target	30,000sds	-	50,000sds
“	Bijou	20,000sds	-	-
“	Bohemia	25,000sds	-	-

Cucumber	Gremlin	10,000sds	-	1,000sds
“	-	-	90g	-
Capsicum	Bell boy	100g.	-	-
“	-	-	170g.	-
“	Satino	-	-	2kg.
Broccoli	Marathon	-	8,000sds	-
Beans	Fardenlosa	-	10kg.	10kg.
Carrots	-	-	-	1kg.
Honey dew	Casper	4,000sds	-	-
Rock melon	Pulsar	2.5kg.	-	-
Radish	Radar	575g.	-	-
Sweet corn	Honey & Pearl	10kg.	-	-
Tomato	Kingleo	100g.	400g.	-
“	Petopride	50g.	-	-
“	Guardian	-	-	2,000sds
“	Rebel	-	-	7,000sds
Zucchini	Congo	4,000sds	6,000sds	-
Watermelon	Mickeylee	-	-	10,000sds
“	Wildcat	-	-	1,000sds

### 9.1.3 Seeds Imported by Farm Agro Supplies for 2008

(Seed source, Terranova, N.Z.)

<u>Seed Spp.</u>	<u>Variety</u>	<u>Qty Imported</u>
Beans	Labrador	71kg.
H/Cabbage	K-K cross	3kg.
C/Cabbage	Saladeer	2kg.
“	Pak choi	90,000seeds
Capsicum	California, Yolo wonder	1.4kg.
Carrots	New kuroda, Top weight	35kg.
Cauliflower	Nova	2,500seeds
Cucumber	Money maker, Genuine	4kg.
Egg plant	Black beauty	1kg.
Lettuce	Fortune	1kg.
Spring Onion	Kiyotaki	1.2kg.
Parsley	Triple curled	300g.
Pepper (Hot)	Long Red Cayenne	225g.
	Pacific Bell	15,000seeds
Radish	Everest	325g.
Tomato	Tropic boy, Zola	480g.
Water melon	Candy red, Charleston hyb. Charleston Grey, Mickeylee Sugar baby, Glory jumbo, Manna.	28kg.

### 9.1.4 Seeds Imported by FIMCO for 2008 (Seed Source: Venture Co. NZ)

Species	Variety	Qty Imported
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Cabbage/H	K-K cross	350g.
“ /C	Pak choi – white stow	5,000sds
Capsicum	California wonder	875g
	Yolo wonder	875g
Carrots	Top weight	2,000g
Cucumber	Money maker	500g
Tomato	Beef steak, Tropic boy	400g
Water melon	Charleston hyb, Candy red, Mickey lee, sugar baby	6,500g