

# Final Report



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*Project*      **Farm Support Association Farmer - Market Linkage Activity for the Vanuatu Vegetable Sector**

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*Date*          June 2010

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All  Agricultural Commodities Programme



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## 1 Summary

This project was technically supported by the Food and Agriculture Organization of the United Nation's (FAO) Rural Infrastructure and Agro-industries Division (AGS) and funded by the EU-All African, Caribbean Pacific Agricultural Commodities Programme (project code: GCP/INT/045/EC).

After many long years of commitment to serving its members with technical support for spices and poultry FSA has taken the first step towards serving the needs of vegetable producers and buyers in the Efate area. Through the short term support provided by the EC funded ACP all commodities programme FSA has been able to increase its technical skills and capacity to serve its vegetable farmer members. FSA has also facilitated the entrance of 10 smallholder ni-Vanuatu farmers into the formal fresh produce marketing chain with the establishment of producer-buyer 'contracts' with two leading fresh producer traders. FSA together with DARD have established a series of research/demonstration plots that they will continue to draw practical lessons from and use as training sites for farmer members. A summary timetable of the activities completed under this action plan is provided below:

### Timetable of activities

Date	Activity
November 2009	FSA begins vegetable supply chain study
December 2009 - January 2010	Producer survey (Port Vila market)
Late January –Early February 2010	Follow-up producer farm visits
December 2009 – February 2010	Buyer consultations
January-February 2010	Group formation
February 2010	Design of a package of practices for selected vegetable crops
February 2010	Training for FSA and DARD staff on proposed package of practices
February 2010	Design of nursery and on-farm demonstration plots
February 2010	Establishment of nursery and on-farm demonstration plots
March 2010	Farmer training on package of practices
March – June 2010	Management of nursery and on-farm demonstration plots and data collection
March –June 2010	Distribution of seed and seedlings to 'contracted' growers
March 2010	Establishment of contracted plantings
March 2010 to date	Monitoring and technical assistance to farmers undergoing contracted plantings

The FSA management and members are excited about the vegetable initiative but realise the large amount of time and resources required to establish this initiative as a regular FSA programme. Upon completion of the FAO funded Farmer-Market Linkage activity FSA has had an opportunity to explore the future prospects for the extension of this initiative into a

regular FSA programme. It is proposed that these follow-up activities be put forward to FAO or other development agencies for funding.

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## 2 Background

### EC funded ACP Commodities Programme

The objective of the EC funded African Caribbean Pacific commodities programme (AAACP) (EC-ACP GCP/INT/045/EC) is to improve the livelihoods of producers in commodity dependent ACP countries. A consultative workshop for the Pacific region held in Apia, Samoa in February 2008, identified the fruits and vegetable sector in the Region as a promising sector for strategic development. In Vanuatu promising fruits and vegetables to identified included temperate vegetables such as cucumbers, tomatoes, capsicum, Irish potatoes, beans and cabbages and tropical fruits, such as papaya and citrus. The selection of the fruit and vegetable sector was based on a number of factors that include: the current and future demand prospects in the country, the potential for import substitution, market growth opportunities for value added products for the markets, nutritional benefits for the population, and national and regional public support for the sector.

Under the EC funded ACP commodities programme, AGS Agribusiness and Enterprise Development officer, Mr. Heiko Bammann fielded a mission to Vanuatu to consult with the Farm Support Association (FSA), Department of Agriculture and Rural Development (DARD), agro-processors, and local NGOs. The mission revealed that market trends have indicated that regional and international demand for fruits and vegetables is increasing. However, to take advantage of these opportunities, there is a need to increase farmer organizations capacity and coordination and to improve crop yield. The Farm Support Association, a non-profit farmer organization, coordinates the market linkages of about 200 members/project participants in all of the major islands of Vanuatu. Its main area of work was and still is the spice sector and the support to the Vanuatu spice network. However, through its outreach to farmers, its good working relationship to the Department of Agriculture and acceptance amongst the private sector agribusinesses, it has all the potential to support the development of the sector. Based on its shown success and reliability in the collaboration as a development partner in the past, FSA has identified an upgrading strategy that strengthens the business and supply linkages between small farmers and the buyers and distributors of fruits and vegetables in Vanuatu.

Activities to strengthen farmer organisations' capacities in the region started in October 2008 with a regional workshop for farmer organisations. The Farm Support Association (FSA) from Vanuatu was one of the nine country based organisations participating at that workshop. At this workshop it was concluded that opportunities for export of fruit and vegetables from Vanuatu will only emerge when farmers will have shown that they are able to produce required qualities, quantities at competitive prices in a consistent way for the domestic market. Based on these outcomes a small activity was designed to help support fruit and vegetable producers in Vanuatu. It is envisioned that the activities will improve and lead to:

- better business linkages through better coordination and reliability of supply to buyers;
- improved production and productivity through on-farm field demonstration and dissemination of modern technologies.

### Farm Support Association (FSA)

Farm Support Association (FSA) is a Vanuatu based non-for-profit, non-governmental farmer based rural development organisation established in 1983. It is managed by ni-Vanuatu farmers to assist farmers with the management of plantations that were

suddenly regained at the time of independence. FSA has its headquarters in Port Vila and an office in Luganville on the island of Espiritu Santo. It has over 200 ni-Vanuatu small holder farmer members and a managing committee made up of six members from different islands of Vanuatu. There are presently paying members of FSA on every island of Vanuatu. The association employs two permanent field officers as well as secretarial support staff in the Port Vila and Luganville offices.

FSA has a number of on-going activities such as organic certification of pepper and vanilla, support and advice to the Vanuatu spice network, on-farm research for improved root crop production, provision of practical training to farmers in vanilla production, egg production and pig farming. FSA is also involved in the development of hands on training courses and instruction material with the Rural Training Centres established to train youth as well as with existing women groups. FSA has been instrumental in establishing and maintaining the Vanuatu spice network and in its work closely collaborates with the private sector (i.e. Venui Vanilla). Over the past years FSA has proven to be a reliable partner to a number of international and regional development organisations, including SPC, AusAID, NZAID, US Peace Corps, as well as FAO.

While FSA has worked on vegetable production as part of traditional food gardens for many years, the current FAO supported initiative is the first time that FSA has worked with production of high value vegetable for the formal markets. Including these new vegetable crops in the training programmes of FSA has meant that staff have to be trained on the technical aspects of production, post-harvest handling and marketing.

FSA has been successfully involved in linking its farmers to buyers under the spice network and some of this expertise is able to be transferred into the current vegetable activity, however there are several significant differences between the spice network and the current vegetable initiative including;

*Market opportunities for producers* - There are very few buyers of the products produced under the spice network almost all production is for the export market. This means that the marketing opportunities for farmers are very limited. In contrast producers of vegetables around Efate have many marketing opportunities and they decide, at their discretion, the most appropriate place for them to sell their produce.

*Market opportunities for buyers* - Under the spice network the buyers/traders have relatively stable markets over the course of the year and price fluctuations are generally only minor. This factor allows the buyers/traders to engage in very firm terms of trade with the producers in terms of volume, quality and pricing. In contrast the market opportunities for buyers/traders of vegetable products are much more erratic and subject to significant price fluctuations throughout the year resulting from: fluctuating demand from hotels/restaurants, seasonality, availability of local supply, availability of imported supply.

### **Moving beyond the spice network to include vegetables**

With 25 years experience in extension services FSA understands the importance of continuous support and follow-up with its ni-Vanuatu farmer members. This follow-up and mentoring is particularly critical when farmers are working with new crops that require a new perspective on farming. FSA estimates that for a vegetable farmer extension service to be successful, staff should visit every farmer every week.

For FSA to implement follow-up activities in supporting vegetable producers and buyers it will require financial assistance to hire one more full time technical officer for a period of two years as well as a vehicle for transportation. It is envisioned that after the two year period FSA will be equipped to continue this vegetable extension service as part of its regular extension program with funding from its membership base.

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## 3 Overview of the Vanuatu Vegetable Supply Chain

In preparation for the FSA Farmer Market Linkage activity for vegetable growers on Efate a baseline mapping of the supply chain was carried out to identify all the actors involved in the chain and the various issues affecting them.

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### 3.1 Input suppliers

There are a number of stores supplying agriculture products around Port Vila. The main supplier is the Vanuatu Agricultural Supply Store that carries a range of seeds and other agricultural inputs including fertilisers and pesticides.

Vegetable seed supplies are rather limited with the Yates brand being the predominantly available label. These general purpose seeds are mainly selections for temperate climates and are not ideal for tropical vegetable production.

Vanuatu Direct, a leading producer/importer/wholesaler of vegetables in Port Vila has been able to source a wide range of seed material from South East Asia that is very well suited to the local conditions. Only recently Vanuatu Direct has begun selling these seeds to interested farmers.

There are no commercial nurseries supplying vegetable seedlings.



Vegetable seed and seedlings trays on sale at Vanuatu Agricultural Supply Store, Port Vila.

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### 3.2 Producers

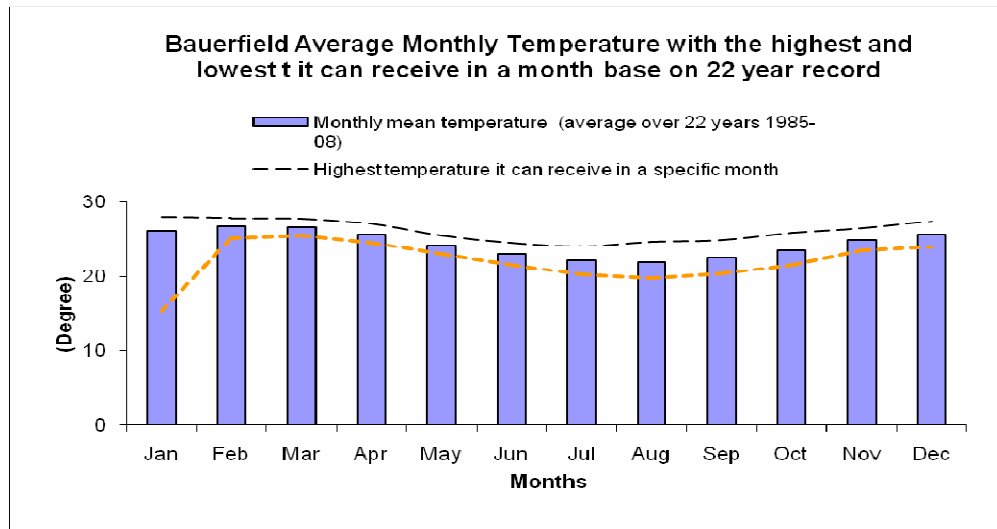
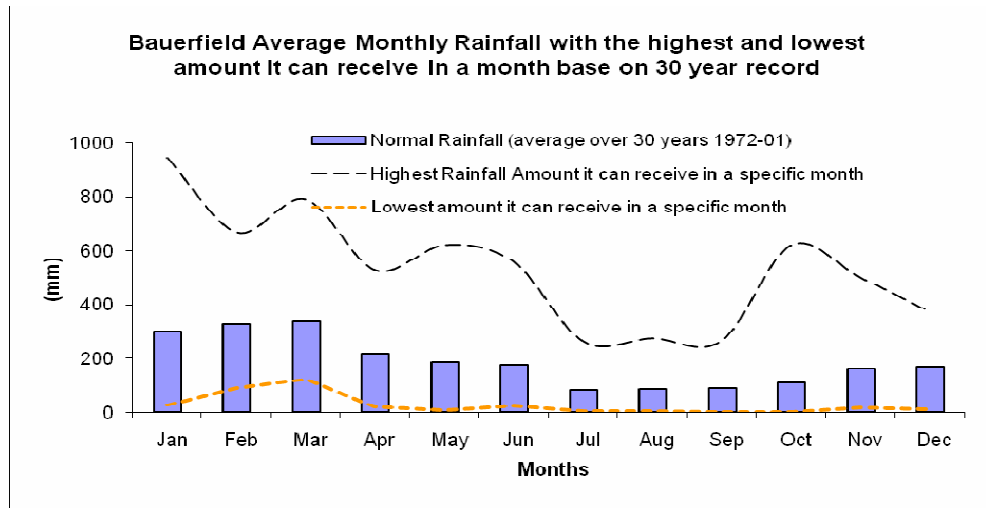
The vegetable producers on Efate are made up of approximately 30-40 smallholders and 4-5 semi-commercial producers. These producers are mainly located around the Port Vila area; spreading from Teuma in the South of Port Vila through to Mele just north of Port Vila.

These producers supply primarily the informal markets; Port Vila Municipal market, smaller neighbourhood markets and road markets (described below). Due to the informal nature of these producers and their marketing structure there is almost no data available about types of products produced, volumes and prices. Not only is there

a lack of information regarding these producers but many of these producers operate completely independently of the FSA and DARD extension activities.

Due this lack of information and established relationships with many of these informal small-holder vegetable producers, FSA made it a priority to find out more about these producers and the issues they are facing.

The temperature and rainfall patterns in these areas indicate a humid tropical environment which is generally regarded as not ideal for temperate vegetable production. The main vegetable growing season is between May – October when rainfall decreases along with temperature (see graphs below).



### 3.3 Extension partners

#### 3.3.1 Department of Agriculture and Rural Development (DARD)

The DARD extension division has historically been the main support network for vegetable farmers in Efate and around Vanuatu. The Tagabe Research station has carried out a range of vegetable trials and demonstration plots over the years in development of the fresh produce industry. At various times DARD has had technical assistance with vegetables from International agencies and the Chinese Government.

While the support from DARD to vegetable producers has been strong there are significant limitations faced by the DARD extension service including a limited



operating budget, availability of transport to visit farms and specific technical expertise on vegetable production.

### 3.3.2 Farm Support Association (FSA)

FSA has a very strong extension service for farmers around Port Vila and in the outer islands through their spice and poultry networks. While FSA has worked on vegetable production as part of traditional food gardens for many years, the current FAO supported initiative is the first time that FSA has worked with production of high value vegetable for the formal markets. Incorporating these new vegetable crops in the training programmes of FSA has meant that staff have had to be trained on the technical aspects of production, post-harvest handling and marketing.

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## 3.4 Transportation and handling

Transportation and handling is a major factor affecting the quality of fresh produce grown around Efate. While the main roads of Efate are mostly in good repair many of the farm feeder roads are in terrible condition and in some cases do not exist, forcing farmers to carry highly perishable fresh produce in wheel barrows or woven baskets up to 2 km on rough foot trails.

Most fresh produce is transported from the farm to the markets in hired 4x4 trucks, the cost of which is usually shared between several farmers living in the same area. Much of the fresh produce that goes to the market is transported in traditional baskets woven from coconut leaves with taro or banana leaves used as further padding. Sometimes fabric material or sacks are also used. In some cases produce is transported in wooden crates. In any of these forms produce has only minimal protection from damage during transportation.



Truck arriving at Port Vila Municipal Market with produce from the Teuma Valley.



Chinese cabbage transported in traditional woven baskets.

### 3.5 Market outlets

The vast majority of vegetables produced by ni-Vanuatu farmers enter into the informal marketing chain. This main outlet in this informal chain is the Port Vila Municipal Market which offers the widest selection of fresh produce to the people of Port Vila. There also exists smaller neighbourhood markets and roadside market stalls selling fruits, vegetables and root crops. Other factors leading to the spread of these neighbourhood markets is the increasing cost of market fees which means that people have to spend more money on table fees, food, water and toilet costs that they must meet to use the services.

Thus, the neighbourhood and roadside market stalls are becoming ever more popular and provide a good outlet for small vegetable producers.

In the 'formal' marketing of fresh produce in Port Vila it is almost entirely handled by four main traders. These traders include:

- Teuma Gardens;
- Vanuatu Direct;
- Eco Fresh; and,
- Nougro.

These traders supply the formal market that includes: hotels, restaurants, supermarkets and the cruise boats. Many of these traders rely on both local and imported produce to meet the needs of their customers.



Fresh produce on sale at the Port Vila Municipal Market



Fresh produce on sale at a neighbourhood market in the peri-urban area of Fresh wata 1, Port Vila

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## 4 Stakeholder consultations

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### 4.1 Producer survey

From the supply chain analysis carried out it was apparent that there is very little information or networks in place for the fragmented vegetable producers around Efate. Because FSA has not done much work with vegetable production in the past, their current producer networks do not include many of the farmers that are involved in vegetable production.

On this basis it was decided that a producer survey should be carried out to try and collect as much data as possible on the growers of vegetables in the Port Vila area.

#### 4.1.1 Methodology

With very limited resources and a short time frame a rapid survey methodology was developed to help identify the farmers involved in vegetable production and those farmers that may be suitable to include in the FSA farmer market linkage activity.

The survey began at the Port Vila Municipal market house in December 2009. During this period FSA staff went out to the market twice a week for one month to observe what vegetables are available and who is producing these vegetables. It should be noted that this survey was conducted in what is considered the off-season for vegetable production in Vanuatu. Therefore the sample of producers was not inclusive of all vegetable farmers serving the Port Vila Municipal market house, however the farmers that did have vegetables in the market at that time can be considered as the most committed and capable of vegetable farmers to be able to supply in the off-season.

The survey at the market place was focused on those vendors who were observed to be seen selling larger quantities of vegetables. These vendors were interviewed to determine whether they were the producers themselves or whether they were traders/middlemen. If the vendor was also the producer than the interview continued to try and gather as much information as possible about the farming enterprise. Contact details for all producers/vendors interviewed were collected.

Upon completion of the producer survey in the market place field visits were arranged to a number of farms identified as having potential to be serious vegetable producers. The farms visited by FSA staff included farmers that were identified during the market interviews as well as farmers who had been identified through existing FSA/DARD networks. The objective of the farm visits/interviews was for the FSA staff to see firsthand what the farming operations looked like and determine the ability/willingness of the farmer to expand production levels for vegetables.

#### 4.1.2 Number of farmers interviewed

More than 30 farmers were interviewed in the municipal market survey. Of those farmers interviewed 17 farmers were selected for further interviewing and farm visits. The main areas of interest for the interviews included:

- Type of vegetables grown and quantity
- Cultivation techniques
- Information on land (soil type, area, ownership)
- Availability of water
- Difficulties faced in vegetable production (including pest and diseases)
- Market and marketing difficulties

### 4.1.3 Key findings

#### Availability and pricing of vegetables

There is a wide range of vegetables available at the Port Vila Municipal market during the survey period. The survey was most interested in the availability of 'high value' vegetables including:

- Lettuce
- Cabbage (leafy and head)
- Carrots
- Radishes
- Tomatoes
- Capsicum

The market survey revealed that all of the above mentioned vegetables are not sold by weight but rather by the heap, bunch or bundle. The pricing for these heaps, bunches or bundles generally does not fluctuate largely however the size of the heap, bunch or bundle will either increase or decrease depending on the availability of that product in the market at a given time. Generally the cost of the heaps, bunches and bundles will be set at a round number e.g. 100vt for a bunch of Chinese cabbage or 250vt for a heap of lettuce. Capsicum fetches a very high price in the municipal market where it is either sold per fruit or per plastic bag of fruit. It is not uncommon to pay 150-200vt for one capsicum.

Therefore the pricing structure is not determined by calculating the producers' expenses and then adding a reasonable profit but rather by whatever the market will bear on any given day.

#### Vegetable farming areas

The survey revealed that most of the vegetables available in the Port Vila municipal markets during the survey period were grown within the area ranging from Teuma to the south of Port Vila to Mele in the North of Port Vila. A majority of the farmers interviewed can be grouped into four main farming areas, these are:

1. Teuma Bush
2. Teuma Valley
3. Salili
4. Mele

All the vegetable farmers surveyed were ni-Vanuatu that originally came from the outer islands. Most of these farmers don't have legal rights to use the land they are farming however they have verbal agreements made with the land owners.

#### Labour and gender

The surveyed revealed that a majority of the market vendors were women, most of whom are the wives of the farmers. There are also some male market vendors and in some cases the farmer himself will be selling his own produce at the market stall for some part of the day.

From the producers surveyed all reported using family labour on the farm with only a few rare occasions having to pay outside labour for land preparation. The producers reported that the farm work is carried out by the whole family; husband, wife, children and extended family who may be living at the farm.

With regard to alternate forms of income the survey revealed that all but two of the producers surveyed earn all of their cash income entirely from farming.

### Production

The vegetable producers interviewed identified a number of major production problems. It is important to note that these problems were primarily linked to the cultivation of the high value vegetable crops that are also identified as 'temperate crops' e.g. tomatoes, cauliflower, capsicum, English cabbage, carrots etc. Among the production problems recorded the main ones were:

- Difficulty in growing selected vegetables out of season;
- Fungal diseases, particularly on capsicum and tomatoes;
- Availability of water for supplemental irrigation; and,
- Availability of high quality seed

The survey also revealed that only one of the 17 farmers interviewed used chemical fertilisers or pesticides as part of their vegetable production systems. During farm visits it was observed that many crops were lacking in nutrition evidenced by vigour, leaf colour and size of harvestable crop.

The farmers interviewed showed a strong attitude towards growing their products organically. It appears that they have a good understanding of what this means however in the absence of many suitable organic fertilizers it appears that they are not feeding their plants adequately; this was very evident in several plots observed. Farmers seemed aware of crop rotations and fallow periods however there might be other factors that are preventing them from fully utilising these 'organic' tools and therefore plant nutrition is suffering. A closer investigation of the production practices at the farm level followed up by on-farm production training could help the farmers to improve plant nutrition.

### Marketing

The main market for the farmers interviewed is Port Vila Municipal market. A few of the farmers reported selling some vegetables in the neighbourhood markets closer to their homes.

It is very interesting to note that of the farmers interviewed regarding their vegetable crops there was no major concerns raised regarding the market for their produce. The concerns from farmers focused much more on production as they reported that supply was the major issue and not the availability of the market.

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## **4.2 Buyer consultations**

### **4.2.1 Methodology**

Five main buyers/traders were identified as the major marketers of locally produced vegetables. All of the buyers/traders identified are also producers of fruit and vegetables. Initially a meeting was arranged to bring together all of these buyers for a group discussion on incorporating outgrowers into the formal fresh produce marketing chain. This initial group meeting was attended by 3 of the main fresh produce buyers/traders as well as FSA and DARD staff. After this meeting it was concluded by the FSA staff that this type of environment was not conducive to good discussion and it was therefore decided that future buyer interviews would be done individually.

Due to the busy schedule of the buyers/traders it was decided that FSA would travel to their place of business to carry out all interviews.

## 4.2.2 Key findings

### Production

Of the buyers surveyed all produce the majority of their supply on their own farms. The scale of production and production practices used on these farms is on a completely different level than the ni-Vanuatu producers surveyed. Key factors that set these commercial farmers apart from the ni-Vanuatu small holder farmers surveyed are:

- Use of tractors for land preparation and mechanical weed control;
- Use of irrigation systems during the dry season;
- Understanding of plant nutrition and pest and disease control and willingness to purchase the inputs necessary to meet the needs of the crop; and,
- Ability and resources to access key production inputs i.e. high quality seed, fertilisers, field crates etc.

Despite the factors mentioned above the commercial farmers/buyers surveyed still have a number of production problems that mainly relate to the management of pests and diseases in the off-season. It was reported by these buyers that these problems are just the nature of trying to produce temperate crops under tropical conditions.

### Marketing

The survey of buyers revealed that the major markets for many vegetable crops – hotels, restaurants, supermarkets and cruise liners are greatly undersupplied. This fact is evidenced in the large volumes of imports of these same vegetable crops. The main marketing constraint to utilising local produce was identified as consistency of supply. The buyers interviewed all indicated that the reason they have been able to survive in supplying their clients is because they deliver what they say they will deliver.

It was reported during the consultations that there were some products that had certain limitations in terms of the size of the market however by looking at the levels of imports it is apparent that there is a long way to go before the market will be flooded for many of the vegetable products being discussed. It was also noted from the buyer consultations that the size of the market for many of these 'high value' vegetables has been severely limited because of the high cost of many of these products to the consumer. It can be assumed that if these products were locally produced and available to the consumer on a consistent basis at a lower price, that the market will be significantly larger than at present.

The buyers wanted to get the point across that they will not spend time trying to meet market demands with local supply unless they are sure they will have the necessary supply.

### Outgrowers

Consultations with buyers revealed that there was genuinely an interest in working with outgrowers for the supply of selected vegetables. This interest on the part of the buyers was mainly driven by two factors:

1. The need for more supply of selected crops to supplement their own production and meet the needs of their clients; and,
2. The desire to help smallholder ni-Vanuatu farmers.

The buyers reported that their experience with outgrowers in the past has not been successful due mainly to the fact that smallholder farmers cannot maintain a consistency of supply and the buyers can't afford time to assist small holder farmers in the field on regular basis. It was also expressed that many of the vegetable crops

discussed require a certain level of technical expertise and inputs that have to be purchased and many smallholder farmers have not had experience with this type of crop production.

Most of the buyers interviewed reported that for this type of outgrower arrangement to be successful there is good deal of management required to follow up with the outgrowers and make sure they are following the package of practices. The time required for this type of management and oversight is beyond what is available from the buyers and thus, if FSA can play this role, the arrangement seems viable.

The #1 requirement for outgrowers identified by all buyers interviewed is consistency of supply.

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### **4.3 Conclusions from Producer/Buyer consultations**

From the producer survey that began in the Port Vila municipal market it is apparent that there are farmers who are already producing a number of the ‘high value’ vegetables being considered for contracted supply to buyers. Thus, there are farmers who have the ability to grow these vegetables.

The local ‘non-tourist’ market does exist for these vegetable crops and the price received at the Port Vila municipal market is high. While the majority of ni-Vanuatu people do not regularly purchase these types of vegetables there exists a big enough market from the middle class ni-Vanuatu and expatriates that the demand at the municipal markets exceeds the supply for many of the vegetables discussed over most of the year.

The main vegetable farming areas supplying the Port Vila municipal markets during the survey period ranged from Teuma to the south of Port Vila to Mele in the North of Port Vila. It is estimated that approximately 60-70% of all fruit and vegetables supplied to the Port Vila municipal market are produced in the Teuma Valley area.

All the vegetable farmers surveyed are ni-Vanuatu who originally come from the outer islands. Most of these farmers don’t have legal rights to use the land they are farming however they have verbal agreements made with the land owners.

From the producers surveyed all reported using family labour and only on rare occasions having to pay outside labour for land preparation. With regard to alternate forms of income the survey revealed that all but two of the producers surveyed earn all of their cash income entirely from farming.

From the vegetable producers surveyed it can be concluded that production issues and not availability of markets, are the major constraint with regards to supply vegetables.

Buyer consultations revealed that most of the buyers are also producers and the majority of their supply comes from their own farms. The scale of production and production practices used on these farms is on a completely different level than the ni-Vanuatu producers surveyed.

The survey of buyers revealed that the major market for many vegetable crops – hotels, restaurants, supermarkets and cruise liners is greatly undersupplied. The main marketing constraint to utilising local produce was identified as consistency of supply.

Consultations with buyers revealed that there was genuinely an interest in working without growers for the supply of selected vegetables. The #1 requirement for outgrowers identified by all buyers interviewed is consistency of supply.

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## 5 Action plan for FSA/DARD

Following the completion of producer and buyer consultations, FSA and the Department of Agriculture and Rural Development (DARD) decided on a work plan to address the opportunities and constraints identified for vegetable producers on Efate.

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### 5.1 Focus area

It was decided that the focus area of initial work on linking vegetable producers to buyers would take place in the farming areas surrounding Port Vila. The four main areas selected were Teuma Bush, Teuma Valley, Salili and Mele. The Teuma Valley and Teuma Bush areas represent the majority of vegetable producers supplying the Port Vila markets; these areas are also in proximity to one of the major marketers which is Teuma Gardens. The area comprising of Mele and Salili are in close enough proximity to supply Vanuatu Direct.

Other considerations that went into deciding on the focus area was the manpower and resources available within FSA to visit all of the collaborators on a regular basis.

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### 5.2 Collaborators

#### 5.2.1 Collaborating producers

It was decided by FSA and DARD that the first phase of the vegetable initiative would assist a total of 17 vegetable farmers. It was determined that not all of these farmers were well suited to the proposed outgrower model due to a number of factors including:

- Availability of water
- Technical capability
- Perceived interest in being able to meet buyer requirements.
- Accessible during wet season.

On this basis it was decided that farmers would be divided into two main groups:

***Group 1: Growers with the interest, resources and capability to link up with buyers in a formal arrangement for the supply of 'high value' vegetables.***

In total there are 10 growers in Group 1. These growers were then further divided into two groups; those that will be involved in supplying Teuma Gardens and those who will supply Vanuatu Direct.

***Group 2: Growers that have an interest in vegetable production but are not ready for a formal arrangement with a buyer.***

The remaining 7-10 growers in Group 2 will be assisted with the supply of seeds and technical support on how to grow vegetables bound for the Port Vila municipal market. As some of the Group 2 members become more confident in vegetable production they can move into Group 1 and enter into formal arrangements with buyers. It is envisioned that the number of farmers in Group 2 will also increase significantly as FSA becomes more established in the initiative. It is feasible for FSA/DARD to work with more Group 2 farmers provided they are within proximity to the other farmers and are willing to group together.



## 5.2.2 Collaborating buyers

It was decided that there will be only two collaborating buyers to start off with, these are: Teuma Gardens and Vanuatu Direct. Both of these buyers have expressed an interest in the initiative and can clearly define what they need in terms of supply.

It was decided that Nougro is not yet in a position to clearly identify what his market wants and therefore it would not be appropriate to link up farmers with no set parameters. FSA has now established a good relationship with Nougro and it is anticipated that this relationship will continue to grow as FSA's work on vegetables continues.

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## 5.3 Key activities

### 5.3.1 Group 1

Under the FSA/DARD action plan for Group 1 the following key activities were developed for implementation:

1. Group formation
2. Design of a package of practices for selected vegetable crops
3. Training for FSA and DARD staff on proposed package of practices
4. Design of nursery and on-farm demonstration plots
5. Establishment of nursery and on-farm demonstration plots
6. Farmer training on package of practices
7. Distribution of seed and seedlings to 'contracted' growers
8. Establishment of contracted plantings
9. Management of nursery and on-farm demonstration plots and data collection
10. Monitoring and technical assistance to farmers undergoing contracted plantings

### 5.3.2 Group 2

Under the FSA/DARD action plan for Group 2 the following key activities were developed for implementation:

1. Group formation
2. Farmer training on package of practices
3. Distribution of seed and seedling materials
4. Monitoring and technical assistance to farmers

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## 6 Implementation of action plan

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### 6.1 Activity 1: Group formation

17 collaborating producers were divided into two main groups:

**Group 1:** Growers with the interest, resources and capability to link up with buyers in a formal arrangement for the supply of 'high value' vegetables.

In total there are 10 growers in Group 1. These growers were then further divided into two groups; those that will be involved in supplying Teuma Gardens and those who will supply Vanuatu Direct.

**Group 2:** Growers that have an interest in vegetable production but are not ready for a formal arrangement with a buyer.

In total there are 10 growers in Group 2, these growers will be assisted with the supply of seeds and technical support for vegetables link to the Port Vila municipal market.

FSA and DARD staff organised meetings with all of the groups and informed them of the proposed action plan, sites were selected to host farmer group meetings.

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### 6.2 Activity 2: Design of a package of practices for selected vegetable crops

FSA together with DARD, collaborating producers and collaborating buyers worked together to develop a preliminary package of production practices for the selected crops. This package of practices drew heavily on the experiences of the commercial farmers who provided information based on lessons they have learned from years of trial and error. This package of practices includes seeds and seedling production, land preparation, planting, maintenance, fertilisation and harvesting maturity.

In developing the package of practices consideration had to be given to the fact that some farmers want to use only organic inputs while others prefer to use conventional inputs.

The package of practices designed by FSA will be implemented as part of the nursery and on-farm demonstration sites and it is envisioned that after the first round of trials the package of practices will be modified to incorporate the new findings.

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### 6.3 Activity 4: Design of nursery and on-farm demonstration plots

It is the policy of FSA that before they promote a particular package of practices to farmers, staff must have firsthand farm experience with this package of practices. FSA staff have earned an incredible amount of respect from farmers because the FSA staff are all farmers themselves.

On this basis it was decided that a set of nursery and on-farm demonstration plots would be established for FSA to gain this firsthand experience. Two sites were selected; one at the DARD research station at Tagabe and one at FSA's demonstration farm at La source.

The plots were designed to trial out the package of practices that had been developed and demonstrate different nursery and production techniques.

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## 6.4 Activity 3: Training for FSA and DARD staff on proposed package of practices

Prior to the establishment of the nursery and on-farm demonstration sites, FSA implemented a training workshop for FSA and DARD staff on the proposed package of practices for the various crops as well as the design of nursery and on-farm demonstration sites.

The objective of the training workshop was to bring all of the staff up to speed on the requirements of the selected vegetable crops and the expected outcomes of the demonstration sites. The training workshop also aimed to get feedback from the technical staff of FSA and DARD to be incorporated into the package of practices and demonstration sites.



Charles Rogers of FSA demonstrates nursery practices to FSA and DARD staff

The training workshop was attended by 4 FSA staff and 7 DARD staff as well as commercial farmers Charles Rogers and Dick Eade.

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## 6.5 Activity 5: Establishment of nursery and on-farm demonstration plots

### 6.5.1 Tagabe Research Station

Using the nursery at Tagabe research station, seedlings of English cabbage and tomatoes were raised in seed beds and transplanted to the fields after 4 weeks. The plants were planted in two systems; one was open air and the other used a plastic tunnelling system. The objective of the trial/demonstration site was to investigate the benefits of plastic covering on 'high value' vegetable crops.



Vegetable trial/demonstration plots at Tagabe research station March 2010.



Vegetable trial/demonstration plots at Tagabe research station - June 2010.

### 6.5.2 La source

A small nursery was constructed at FSA's demonstration farm at La source where tomatoes and capsicum seedlings were raised before being transplanted into the field nearby. The nursery techniques demonstrated a commercial system that used purchased seedling trays and then compared this to a more traditional village type setting where wooden seed box was used and then seedlings were transplanted into empty rice bags and plastic butter containers. Very interesting observations were made about both nursery systems and farmers and DARD staff were able to share in the learning experience.

From the nursery, plants were planted out in demonstration sites to be managed according to the package of practices that had been developed for the different vegetable crops.



FSA demonstration seedling nursery – La source



FSA demonstration plantings – La source

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### 6.6 Activity 7: Farmer training on package of practices

Two farmer trainings were held to present the package of practices for production of selected vegetable crops. The two farmer trainings were held at La source and Teouma Farms. Altogether 20 people participated in the two trainings. For many of the farmers the commercial practices of using seedlings and chemical fertilisation were completely new to them and much discussion was held as to how these vegetable crops differ from traditional crops.



Farmer production training – La source



Farm production training with – Teuma Gardens

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## 6.7 Activity 8: Distribution of seed and seedlings to ‘contracted’ growers

The first round of distribution of seedlings to farmers took place in June 2010. This involved four farmers in the Teuma area receiving 48 capsicum plants each from Dick Eade of Teuma Gardens. The seedlings were provided along with a first supply of fertiliser. This distribution also marked the formal ‘contract’ arrangement between the four growers and Dick Eade of Teuma Gardens. Staff members from FSA and DARD were also on hand to witness the signing up of the farmers and distribution of seedlings. It was decided at this meeting that Teuma Gardens will provide a further 48 seedlings to each of the four farmers in six weeks to try and establish a continual planting programme that will lead to a consistency of supply.

Seed material to be supplied by Vanuatu Direct has been ordered however there has been several quarantine delays that have prevented this material from entering Vanuatu. Vanuatu Direct has assured FSA that the planting material will be available for distribution to farmers by mid July. Currently seven farmers in the Mele and Salili areas have begun land preparation and will be receiving planting material from Vanuatu Direct under the specified ‘contract’ arrangements.



Dick Eade of Teuma Gardens presents a tray of capsicum seedlings to his new outgrower from the Teuma Valley area.

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## 6.8 Activity 9: Establishment of contracted plantings

To date only the four capsicum farmers contracted to Teuma Gardens have established their contracted plantings. The second round of capsicum planting is scheduled for late July – six weeks from the first planting.

Contracted plantings for Vanuatu Direct are scheduled for late July 2010 once the planting material is available to growers.

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## 6.9 Activity 10: Management of nursery and on-farm demonstration plots and data collection

Nursery and demonstration plots at both Tagabe and La source are underway and preliminary data is being collected and recorded. It is anticipated that trials will continue for another 6-8 months to include both on-season and off-season production.

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## 6.10 Activity 11: Monitoring and technical assistance to farmers involved in contracted plantings

FSA and DARD staff have been assigned to farmers and farmer groups with monthly visits scheduled for every farmer to ensure that the package of practices is being followed.

## 7 The Way Forward for FSA's vegetable initiative

After many long years of commitment to serving its members with technical support for spices and poultry FSA has taken the first step towards serving the needs of vegetable producers and buyers in the Efate area. Through the short term support provided by the EC funded ACP all commodities programme FSA has been able to increase its technical skills, networks and capacity to serve its vegetable farmer members. FSA has also facilitated the entrance of 10 smallholder ni-Vanuatu farmers into the formal fresh produce marketing chain with the establishment of producer-buyer 'contracts' with two leading fresh producer traders. FSA together with DARD have established a series of research/demonstration plots that they will continue to draw practical lessons from and use as training sites for farmer members.

The FSA management and members are excited about the vegetable initiative but realise the large of time and resources required to establish this initiative as a regular FSA programme. Upon completion of the FAO funded Farmer-Market Linkage activity FSA has had an opportunity to explore the future prospects for the extension of this initiative into a regular FSA programme; on this basis the following activities have been identified as the most appropriate follow-up initiative.

### Follow-up activity 1: Expansion of nursery and on-farm demonstration plots

It is the policy of FSA that before they promote a particular package of practices to farmers, staff must have had firsthand farm experience with this package of practices. FSA staff have earned an incredible amount of respect from farmers because the FSA staff are all farmers themselves.

On this basis it is proposed that FSA expand upon the current nursery and on-farm demonstration plots. At present nursery and on-farm demonstration plots have been established at the DARD research station at Tagabe and at FSA's demonstration farm at Lasource. It is proposed to invest further into these demonstration sites as well as establish two new demonstration sites in conjunction with collaborating farmers.

FSA aims to investigate and demonstrate two different models for vegetable production in Vanuatu:

1. The semi-commercial farm that aims for a larger scale of production in individual crops and frequent plantings to ensure continuous supply. The semi-commercial farmer may use mechanisation for land prep, irrigation, conventional fertilisers and conventional pest control methods as required. The semi-commercial model aims to provide the formal markets with large volumes of high quality produce on a consistent basis.
2. The backyard farm that includes vegetable production as part of a diverse polyculture that may include: animals, root crops and tree crops. The backyard farmer will likely use hand tools, hand watering, organic fertilisers in the form of composts and animal manures and a range of natural remedies made on farm for the control of pests and diseases. The backyard farm model aims to supply the informal (municipal, neighbourhood and roadside) markets with vegetable supplies that provide the farmer with additional cash flow from a very limited capital investment.

It is envisioned that the culmination of the nursery and on-farm demonstration plots will be the production of farmer and nurserymen production training materials and farm budgets.

For FSA to implement the follow-up activity 1 it will require financial assistance over approximately two growing seasons for the supply of labour, nursery materials, land preparation, maintenance, design and printing of training materials.

### **Follow-up activity 2: Technical assistance in vegetable seedling production and establishment of nurseries**

It is proposed that technical assistance be brought in to help FSA, DARD and farmer members increase their technical skill base in vegetable seedling production and assist in the establishment of model nurseries. It is envisioned that the establishment of model vegetable seedling nurseries will result in the supply of high quality seedlings to farmers, placing them in a better position to increase vegetable production as well as extend the growing season for selected crops.

It is envisioned that the technical expertise will provide information for the establishment of two nursery models:

1. The semi-commercial nursery that aims to produce large volumes of seedlings and regular basis. This nursery will require start up capital and a constant supply of inputs that must be purchased. The semi-commercial nursery can supply a semi-commercial farm with its own seedlings as well as supply other farmers as an income generating activity. The semi-commercial nursery model requires a relatively high level of management and business skills.
2. The backyard nursery is aimed to provide the farmer with his own seedlings. The nursery will utilise primarily inputs from around the farm and will require very little start up capital and operating costs.

It is proposed that the technical expertise for the follow-up activity 2 will be supplied from Fiji. The Fiji Small and Micro Nursery Enterprise Development for Sustainable Seedling Supply is currently underway and led by Sant Kumar. It is envisioned that Vanuatu will be able to capitalise on the outputs of this project in terms of technical information and training materials.

For FSA to implement the follow-up activity 2 it will require financial assistance to bring in a consultant from Fiji over 2-3 trips to establish and monitor the nurseries.

### **Follow-up activity 3: Establishment of extension service for new and existing vegetable farmers**

With 25 years experience in extension services FSA understands the importance of continuous support and follow-up with its ni-Vanuatu farmer members. This follow-up and mentoring is particularly critical when farmers are working with new crops that require a new perspective on farming. FSA estimates that for a vegetable farmer extension service to be successful, staff should visit every farmer every week. It is envisioned that the FSA vegetable extension service will work very closely with the buyers and serve as the link between the farmers and the buyers.

For FSA to implement the follow-up activity 3 it will require financial assistance to hire one more full time technical staff for a period of two years as well as cost for transportation. It is envisioned that after the two year period FSA will be equipped to continue this vegetable extension service as part of its regular extension program with funding from its membership base.



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## 8 Annexes

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### 8.1 Annex 1: Farm Support Association (FSA) Current Business Model

Pragmatic and resilient, for more than 25 years FSA has responded to the needs of farming. It has established itself as a reliable collaborator with government and international agencies concerned with agriculture. Always closely focussed on the purpose at hand, its structure is lean and its overheads minimal.

#### 1. Historical Development

FSA began life in 1983 as the Plantation Support Association (PSA). Its purpose then was to assist community groups who, after Independence, took over previously alienated plantation properties. With a General Manager and three field staff it provided management and technical support, including supply of materials, for up to 19 members. It functioned with development assistance from Canada, USA and the (then) European Community.

Allied with PSA was the Plantation Training Centre, providing practical and theoretical training in plantation and livestock management. Attached to this was also an apprenticeship scheme which prepared school-leavers for agricultural operations. Both were located at La Source Plantation near Port Vila, managed by Charles Rogers who was also the driving force in all these pursuits.

By 1992 circumstances had changed and in response, PSA became FSA and its emphasis shifted to providing for the needs of small-scale farmers.

The central thrust of FSA's work in the mid-'90s was in the application of alley cropping techniques, particularly on some difficult land areas. After a successful collaboration on a USAID project, FSA was given responsibility for a larger project with IBSRAM (International Board for Soil Research and Management). This placed its finances on a secure footing, enabling it to undertake other activities – setting up commercial production of yams and pineapples amongst its members and breeding and training working horses (as pack- and draught-animals) for purchase by farmers. Later, FSA took responsibility for a fruit fly bait-spraying program. That, the IBSRAM project and work on spices, took some load off the Department of Agriculture which at the time was short of manpower, and this began a long and fruitful co-operation.

In 1996, FSA was approached for assistance by Venui Vanilla, a small company growing and marketing vanilla, pepper and other spices. The company especially needed greater supplies of good quality vanilla and pepper from smallholders. An FSA field officer was trained in the cultural practices of these crops and put into the field. This was the beginning of a major program which grew into an expanded 'spice network' and continues to the present day. FSA became the dominant operator in field extension in vanilla and pepper production, and organic certification became a major component of this activity. The program took on much greater impetus when assistance was provided by the POPACA project, jointly funded by the EU and France.

Under the POPACA project from 2004 to 2006, FSA was able to refine its mode of operations to the form it has today. During that time and over nine islands, its field staff made well over 1000 field visits in over 100 villages, conducted 36 workshops, 44 demonstrations, 11 major meetings and many smaller ones. The subject matter was the growing and on-farm processing of spices and organic certification and always, stress was placed on *doing* as much as *telling*. By a process of elimination the field

staff was settled into its present skilled team. These are experienced in the inspection and documentation for organic certification.

The growth of the spice network brought some 500 farmers into direct contact with FSA and its membership expanded. At the same time, FSA continued some of its other activities and began others. The latter included establishing small-scale poultry operations (in co-operation with another farmer organization, the Syndicat Agricole et Pastoral de Vanuatu, SAPV) and becoming part of the Melanesian Farmer First Network supported by FAO and Oxfam.

At the end of the POPACA project the workload with the spice network eased, freeing FSA to undertake other pursuits. These include field work with a number of Rural Training Centres and women's groups (some supported by NZAID and others by Oxfam), distribution of improved root crop planting material (in collaboration with the Department of Agriculture and Rural Development, DARD) and trial introduction of Vetiver grass for soil erosion control (a UNDP initiative).

In addition to, and in support of, its field activities FSA has produced and distributed several leaflets and booklets on such subjects as aspects of vanilla-growing, working horses, poultry production and organic certification. It has also maintained a working liaison with DARD – one of mutual assistance and, on occasion, joint action (e.g., a survey of fruit-growing in the southern islands).

The various changes in FSA's activities have been driven both by the needs of farmers at any given time and by FSA's own need for financial support. The changes were responses to circumstances but the result has been an organization that is adaptable and has diverse experience. The hallmark of FSA's work has always been emphasis on practical action.

## **2. Structure and Organization**

FSA has evolved beyond its old structure of a management board holding formal meetings and reporting to an annual general meeting. With board members –and other members – scattered over an archipelago with imperfect communications, that model proved so clumsy and expensive as to be unworkable. Standard fee-paying membership of hundreds of small farms was even less practicable. A looser arrangement works efficiently, partly because all are quite clear about purposes and operational capacity.

Four men – Charles Rogers, Piero Bianchessi, George Bumseng and Peter Kaoh – consult as needed on management decisions. Oversight of operations is in the hands of Charles Rogers and Peter Kaoh and the latter, with three other officers, carries out field work.

Funding is now entirely from aid agency projects.

## **3. Members**

FSA regards all farmers and organizations participating in its programs as members. At present, these include some 500 farmers listed in the spice network database and almost 200 with small-scale poultry operations, together with those involved in lesser programs. The total is about 750. But there are also organizations which at present include 11 Rural Training Centres (RTCs) and seven women's groups in villages. The RTCs are small, non-government institutions set up in villages to provide practical training for rural youth<sup>1</sup>.

The farmers are smallholders whose land areas vary greatly but are commonly about 5-10 hectares. Some of this land is for growing food and is usually under 'bush fallow'

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<sup>1</sup> One is at a secondary school.

rotation. Other land is devoted to commercial crops which may be copra, cocoa, coffee, kava or spices. There may be a few grazing cattle, some pigs or a small poultry enterprise producing either eggs or meat birds.

The RTCs being serviced typically have very modest facilities usually consisting of a classroom and some hand tools, and have use of a small piece of land made available by the village chief or a farmer. The instructor is usually a local person with little or no specialized training who receives a small payment, if any. Instruction is usually five days per week but may be less. These are 'grass roots' operations whose running costs are met by fees and local sale of produce. The women's groups are less formal, usually individuals who have banded together in a locality who meet in a community building. They exchange information and assist each other to improve (in particular) their methods of food production.

#### **4. Services**

Field staff spend about half their working time on tours to islands, usually of about three weeks' duration. Tours are multipurpose: even when the major purpose is a specific one such as annual inspection of farms for organic certification of spice growers, some visits for other programs are often fitted in.

The work with spice network farmers mainly concerns vanilla, both field cultivation and curing of mature beans. The field officer might visit individual farms or gather together a group for a demonstration, or conduct a workshop in which oral explanation will be followed by working with the participants on an actual crop or going through the process of curing beans. This work is both informing new growers and maintaining standards in existing growers. Field officers know, for example, that at some places farmers have to be badgered to mulch their vines adequately and at others are likely to be lax in pruning support-trees or to short-cut processing. FSA also does the field work for maintaining certification of farmers supplying organic spices to Venui Vanilla. The number of certified farmers hovers between 100 and 150: their operations must not only be free of artificial contaminants but also maintain a good standard of sustainable production, so some may lose certification and others gain it at each annual inspection. There is a close linkage between FSA and Venui Vanilla in carrying out the necessary documentation.

The poultry producers are supplied with day-old chicks by SAPV, whose facilities at the two towns of Port Vila and Lugainville are FSA's operational bases. In many cases, SAPV also supplies feed. When on tour, FSA staff give advice on management as required.

The RTCs and women's groups serviced are those that responded to FSA's offer of assistance. Each has chosen which of eleven offered activities they want. These activities are: 1) growing off-season pineapples, 2) applying improved fallow techniques in food production (e.g., alley cropping), 3) planting and multiplying new root crop varieties, 4) growing new vegetable varieties, 5) vanilla-growing, 6) pepper-growing, 7) poultry keeping, 8) pig keeping, 9) goat keeping, 10) operating with a working horse and 11) adopting hand tools not previously used. Visits are made to each group about three times per year, each visit being of a few days spent in instructing and demonstrating.

On a tour, then, a field officer might visit two islands, taking with him root crop planting material supplied by DARD. He might give some of this to three leading farmers and some to two of the three RTCs he visits. He might conduct a workshop on curing vanilla beans and visit spice growers in two or three places, giving impromptu demonstrations of proper looping and mulching of vanilla vines. At the RTCs and women's groups he may hand out seeds of improved vegetable varieties as well as the root crop planting material; demonstrate pepper-growing techniques; point out

mistakes in poultry management and check progress in other programs. He might also visit a demonstration of alley cropping to see that it is properly maintained and visit a farmer who has a working horse to see that it is properly looked after and whether anything is needed to keep packsaddles and harness in good repair. He will have flown to the two islands and travelled there by public transport and on return will spend a few days writing up his report.

All the field officers are familiar with all the forms of production and although one may concentrate on one part of the country and another on another, they are essentially interchangeable. They are a trained team, dedicated and open to new innovations and they keep everyone in FSA informed on progress in their several areas.

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## 8.2 Annex 2: Structure for average FSA farmer member

The farm described here is a construct of a typical farm on Tanna Island, where gross farm income is intermediate between those of farms on other islands. The land area is less than average but where holdings are larger, the more extensive area is likely to be either bush not much used in any cropping rotation, or devoted to more extensive production such as coconuts for copra, possibly with some grazing cattle.

The land area is about two hectares. Fixed cropping is on one area of about 0.06 ha (600m<sup>2</sup>) growing 150 vanilla vines and another of about 0.05 ha (500m<sup>2</sup>) carrying mature coffee trees. A further 0.5 ha is devoted to garden/bush fallow rotation, the garden producing food and some saleable produce. The remaining area may be unused for agriculture but provide useful bush materials, be used intermittently for grazing or other agricultural purposes, or be brought into production as circumstances require. Two or three pigs are hand fed, some fowls run free and supply occasional domestic consumption, and a beef animal on a tether moved from place to place is kept to meet customary obligations.

In the garden/bush fallow rotation, 0.05 ha (500m<sup>2</sup>) is brought into production each year. It is planted to root crops (yams and some taro), plantains, kava and vegetables. Some of these vegetables – Chinese cabbage, tomato, spring onions, cucumber and watermelon – are for sale. After the yams are harvested at about 10 months, sweet potato is planted on the area and this is followed by manioc (cassava), which is harvested about three years after the area was first cleared and planted. Only the plantains and kava then remain and harvesting of these continues as the area begins to revert to bush. After about four years of bush fallow the area will again be cleared and planted. About 10-15% of the produce from root crops and plantains is sold.

The fed pigs and the kava are mainly for meeting customary obligations – viz., the farmer's contribution in produce to family or community celebrations such as rites of passage. There are, however, occasional sales of pigs and kava: once in three or four years a pig may be sold and about 20% of the kava is sold annually.

Vanilla and coffee are wholly commercial crops. About 15 kg of cured vanilla beans are sold annually to Venui Vanilla and about 25 kg of 'parchment' coffee beans are sold to Tanna Coffee Ltd.

The main outlet for the vegetables, root crops and plantains that are sold is a market at the island's commercial centre, though a proportion of the vegetables may be shipped for sale in Port Vila by members of the farmer's family or friends.

Average annual gross income is likely to be as follows.

	Vatu
Vanilla (15 kg cured beans @ VT 3000/kg)	45,000
Coffee (25 kg parchment beans @ VT 180/kg)	4,500
Kava (5 'heads' @ VT 7000/head)	35,000
Vegetables, various	15,000
Root crops and plantains	15,000
Pigs (at VT 35,000 per head, one sold every 3-4 years)	<u>10,000</u>
TOTAL	124,500

Running costs are minimal. The major one is purchase of food and beverage (kava) for village men who once a year help the farmer clear his new garden area and prepare mounds for yam planting. These supplies are purchased at a nearby store and may cost VT 15,000. Apart from a few hand tools and minor hardware items costing perhaps VT 5,000 per year, the only other physical inputs are the labour of the farmer and his family.

In curing the vanilla, the farmer uses a curing kit supplied by Venui Vanilla to the local group of growers and he sun-dries the beans on racks made of bamboo. The coffee beans are handled similarly: the pulp is removed using a communally-owned pulper and the parchment beans dried on the same racks. Both products are roughly graded on the farm. More rigorous grading is done by the buyer in each case, who then carries out final processing and packaging. Venui Vanilla produces packaged vanilla beans, paste and extract, mainly for export. Tanna Coffee Ltd hulls the beans, roasts and packages them and sells both roasted beans and ground coffee, mainly to supermarkets, hotels, resorts and restaurants in Vanuatu.