

# Aruligo Pineapple Value Chain – Mapping Report



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*project*     **Strengthening Rural Value Chains Through Enterprise Development (VCED)**  
A Project Under the Community Sector Program (CSP) – Agriculture Livelihoods Component

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*date*        November 2008

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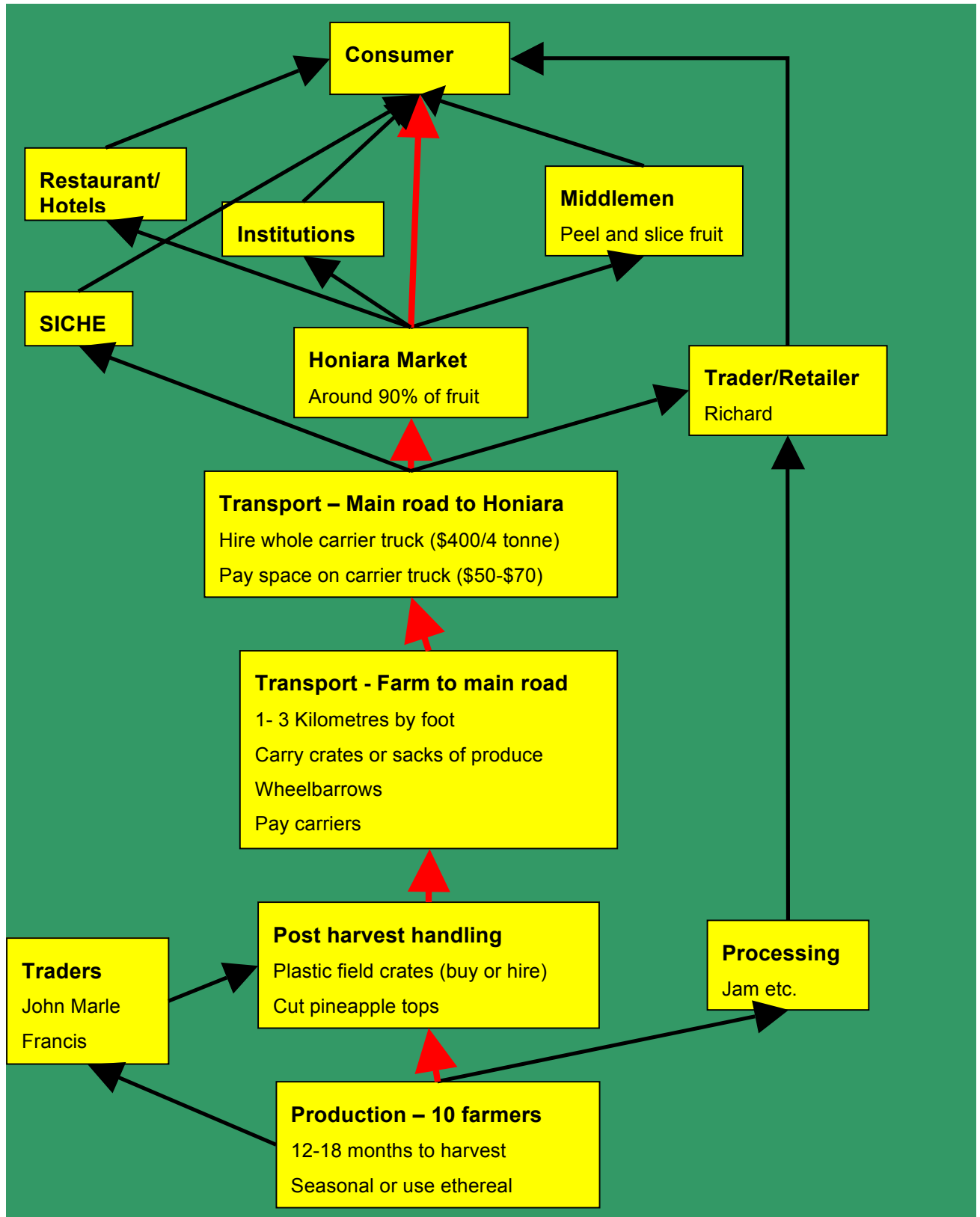
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# 1 Aruligo suppliers pineapple value chain

## 1.1 The map



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## 2 Background

Aruligo suppliers are an informal group of farmers and traders from mainly three settlements; Duidui, Horabao, Vatukulau on the north west of Honiara. A majority of these farmers are originally from the Weather Coast on Guadalcanal Island; following a natural disaster in this district in the 1970s, many families were relocated to Aruligo. The main crops produced by this group are pineapple, watermelon, rock melon, cocoa, copra; other minor fruit crops include carambola, improved Thailand guava, and mango. Pineapple and watermelon represent the majority of supply. The pineapple value chain was chosen as it is applicable to a majority of the farmers at Aruligo and it is easily replicable for other crops.

There were around 12 farmers present at the time of our initial meeting. The group is considering formalising their mutually cooperative arrangement, however it has not been determined the most appropriate structure. They are exploring a number of options, including a cooperative, an association, and even a private company.

Production and handling practices of the group are relatively high which is evident in the final product that is delivered to the market; this is despite the many stages of transport of the fruit. Many of the technologies applied seemed to have originated from a lead farmer in the group John Marle. The use of field crates by Aruligo farmers is further evidence of their desire to produce high quality fruit. The group said that the crates were invaluable in the arduous task of moving the produce from the farm down to the main road for transport into Honiara. The outlets in Honiara appreciate the superior quality of the fruit that is delivered by the group and as such the Aruligo name is quite renowned for good quality and good flavour.

The group feels that they are lacking in market information and negotiating skills. This became even more apparent when the group was surveyed and found to be selling over 90% of their produce directly to the Honiara market.

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## 3 Key points of interest

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### 3.1 Production

#### *Plant nutrition*

While the focus of the Aruligo visit was not on investigating farm practices the team did observe some issues related to plant nutrition of pineapples. It was observed from the leaf colour and size of the plants that there are some nutritional deficiencies; likely Phosphorous or Sulphate. The soils of these grassland areas are prone to such deficiencies. It must be noted that the majority of pineapple plants observed were in close proximity to the farmer homes and thus the plants might just be suffering from a lack of rotation and pineapple crops further from the home might be healthier. This is supported by the fact that generally Pacific Island farmers practice a shifting agriculture system that utilises a variety of crop rotations and fallow periods.

The farmers interviewed at the meeting 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 pineapple 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 in Aruligo should reveal the information gaps that need to be addressed. Further follow up by on-farm production training could help the farmers to improve plant nutrition.

#### *Planting material and varieties*

In our discussion with farmers at Aruligo regarding pineapple it became apparent that there was level of confusion and conflicting opinions with regard to pineapple planting material. In particular, there was confusion as to what type of planting material produces fruit the fastest and how type of plant material affects fruit size. There was also confusion in regard to the different names of the planting materials.

A simple presentation by CSP Small Crops Advisor Pita Tikai or from the newly started CSP fruit and nut tree project would help clear up the air. This type of demonstration would be very effective using a sample of pineapple plants and some colour handouts that the farmers could take home with them. There is also a need for demonstrations on mass pineapple multiplication in a nursery environment and discussion on how this type of activity can help in farm planning and mass plantings.

#### *Seasonality*

From our meetings at Aruligo it appears that the seasonality of pineapple is still vague and many of the farmers do not understand fully the crop cycle of the plant. More data about pineapple seasons in the Solomon Islands combined with some pricing data at different times of the year would help farmers plan their production and cash flows more accurately. This data would also allow farmers to make more informed decisions about the use of hormones products such as ethep. This is a very likely subject for the marketing skills training that is planned for the later components of the VCED project.

The recent CSP ethereal demonstration and handouts that were brought to Aruligo has sparked a lot interest and discussion about production of off-season pineapples. More follow up work should be done to help farmers understand the physiology of the plant, the role that this chemical plays and how it can be used to more effectively control cash flow to the farmer.

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## 3.2 Post harvest and processing

### *Trimming the pineapple top*

Aruligo growers commonly trim  $\frac{1}{2}$  -  $\frac{3}{4}$  of the pineapple top on the farm prior to transport to the main road. This practice allows farmers to pack more pineapple in one field crate. While the cut is usually quite clean it still diminishes the appearance of the fruit. This practice is also common in the Solomon Islands and can be seen at most pineapple stalls in the Honiara Central Market.

One farmer stated that once these tops were cut they were not good for replanting; this was then objected too by another farmer. This is another area that could use some clarification.

### *Jam*

The use of misshapen or small pineapple fruits to make jam is common among the Aruligo group, this is due in part to work that has been done by CSP to provide processing alternatives for excess production and unmarketable fruit.

The team was not able to assess the level of demand for this jam on the local market however at least one of the farmers had previously been providing his product to Richard Paku for sale at his retail outlet and to the Lime Lounge. This farmer lamented that although the trader would buy the jam he could only take so much of it and then had to wait for it to be sold off his shelves before buying more.

The benefits of processing a perishable fruit into a product that has an almost indefinite shelf life are enormous. More information has to be gathered on the market demand for this type of product and what this market will support in terms of pricing.

An interesting phenomenon that occurs elsewhere in the Pacific is that locals prefer to buy jam made from temperate fruits such as strawberry and raspberry as opposed to tropical fruit jams such as papaya or pineapple.

Andrew maybe you can fill in some info on this based upon the work that CSP is doing

### *Juice*

Andrew maybe you can fill in some info on this based upon the work that CSP is doing

### *Pineapple slices*

It was revealed at the Aruligo meeting that all of the farmers present sold their pineapple as whole fruit at the market. When asked about processing the fruit into slices none of the farmers present indicated that they do this.

During market investigations it was revealed that there were middlemen





who were buying fruit at reduced prices early in the marketing day and then taking these fruits to smaller markets or their own settlements and processing them into slices. The small pineapple were being purchased by non-market vendors for as low as \$1 per fruit and then taken to their settlements or commercial areas, cut in half and sold for \$2 per slice. This same size was available at the market later in the day as a whole fruit for around \$5. Larger pineapples were being sold as whole fruit for around \$10-15 each.

The sale of pineapple slices at the Honiara central market was only observed at one stall. This stall was selling whole pineapple fruit from Malaita and pineapple slices that were kept in a sealed plastic container and sold for \$2 per slice; it appeared that the same size fruit used that was cut was available whole for around \$5. For this case it is not quite clear why the farmer chose to peel and slice his product only to sell it for less than he was selling his whole fruit for. More investigation into this activity at the Honiara Central Market would be worthwhile to determine the profit margins and if it is a good diversification activity for Aruligo market vendors.

It would appear that this type of practice is most common during the peak pineapple season when the market is full of pineapple and the price drops significantly, however this would have to be validated by further market data collection. One Aruligo farmer informed us that even when the market is very full of pineapple he has never seen anyone through fruit away at the end of the day. Vendors who live far from Honiara will often sleep at the market for as many days as necessary to sell their produce.

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### 3.3 Storage, handing, and transport

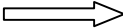
#### *Field crates*

Some Aruligo farmers use field crates (or trays as they are referred too) to transport their produce from the farm into Honiara. Of the 12 farmers that were present only 3 indicated that they own their own field crates. The rest of the farmers have to either hire field crates from those who own them @ (\$10/tray per usage) or use polypropylene sacks or traditional woven baskets.

We were informed that there are a several types of crates available but only the Japanese 'fish crates' were strong enough to withstand the heavy loads and constant usage. We were told that these 'fish crates' could be purchased not directly from the company that uses them but through employees of that company (apparently stolen), they cost on average \$100 however they are not readily available.



#### *Transport*

Farm  Main Road

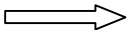
Access from the farms to the main road is a very serious constraint. The distance that must be travelled on foot carrying heavy fruit ranges from 1 km – 3km. The access is via roads that are too bad to drive or footpaths. In the case of the access road that we travelled to visit farmers, the vehicle nearly tipped over sideways and had to be put in four wheel drive and driven very slowly in order to access the farms.

For this reason transport trucks will not go up these roads and farmers must carry their pineapples to meet the trucks at the main road. This leg of the transport chain presents the following constraints to Aruligo farmers:

- Reduced fruit quality from picking up and putting down the product too many times over the course of the walk from the farm to the main road (this damage is reduced dramatically if the fruit is carried in crates as shown above, compared with sacks).



- An additional cost; most farmers will have to employ carriers to transport fruit from their farms to the main road. The cost of these carriers will depend upon how much fruit they will carry and the distance. In some cases where a farmer has a big crop that he wishes to transport he will have to use several carriers making several trips, often this is done on a contract basis with a church or community youth group.

Main Road  Honiara

Transport of Aruligo pineapples from the main road to Honiara is done using a variety of transport providers; these are;

- 1-3 tonne transport trucks – this is the most common form of transport for the Aruligo farmers. Transport trucks of this nature travel the road from Aruligo to Honiara several times a day picking up produce (and passengers). Farmers usually just pay for the space that their produce is taking up on the truck. A space on the truck to transport around 50 pineapples can cost around \$50 - \$70 from Aruligo to Honiara. These transporters will try to pack as much produce as possible on these trucks and this packing is often done in a hurry which can cause further damage to fruit. These transporters do offer planks of wood to separate field crates as they are stacked on top of each other. Care is taken to ensure that no fruit juts above the top of the crate. This way the weight of the higher crates is borne by the crates and not the fruit. It appears that pineapple transported in field crates in this manner suffer little damage on the actual drive. This is compared to pineapple tied together, placed in sacks or woven baskets which will also be stacked with significant damage to the fruit. Passengers sitting on the produce also cause damage. It is likely that most partially damaged fruit will be sold at the market before the damage even becomes apparent. The customer must then eat the fruit quickly or risk rapid decay. These trucks can also be hired in full by a farmer or group of farmers to transport large amounts of produce. The price depends on the size of the truck. Prices given by Aruligo growers were \$200 for a 1 tonne truck and \$400 for a three tonne truck. Farmers will often work together to hire a whole truck and share the cost. If a whole truck is hired the driver will come up a farm road as long as it poses no danger of damage to his truck, for most farmers this still means they have to carry their produce for around 1-2 km. With no mobile service in the Aruligo area farmers must try and go to the main road or into town the day before to make arrangements with a driver to hire the truck. This extra step requires time and money and



could be avoided altogether if mobile phone service is available. It is likely the telecommunications will be available to Aruligo farmers upon entrance of Digicel to the telecommunications market.

- Twin cab or Hilux trucks – These private vehicles often drive the road from Aruligo to Honiara and will pick up produce and passengers. The cost of transporting produce in these trucks is around \$200 for the whole truck and \$50-70 for a space on the truck. These transporters are not regular and reliable but provide another option for farmers if they cannot get transport on a larger truck.
- Buses – If a farmer has only a small amount of produce he/she can use a bus to travel into Honiara. Buses will often charge for the cargo and the passenger where as the price for cargo on the transport trucks includes the farmers fare.



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## 3.4 Marketing

### *Honiara Central market*

The Honiara Central Market (HCM) is the selling point for 90% of pineapples from Aruligo. All of the farmers interviewed said they sell their own produce at the market directly to customers. The price at the HCM fluctuates daily and it appears that while farmers have some standard price points there are also random fluctuations mostly stem from observation of what other farmers or traders are selling their products for. Data on pricing and availability of pineapple collected over an extended period of time would provide a greater insight into the pricing system.

### *Branding of the Aruligo name*

A good opportunity exists to develop the reputation that currently exists for Aruligo suppliers. The area is well known for producing fruit of high quality with exceptional flavour and size. The group also has a reputation for having somewhat rare fruits such as the improved Indian guava and sweet carambola (there is an abundance of bitter carambola spread around Honiara which has shaped a negative perception of the fruit). Many of the 'rare' fruits come from grafted trees that farmers have collected from Dodo creek research station and other places over the years. The groups is now beginning to graft their own seedlings on the farm. This activity will likely be supported by the newly started CSP Fruit and Nut Tree Project.

### **PGS and Organic certification**

In the Solomon Islands there exists a strong demand for fresh produce that is “organically grown”. This was confirmed by a fresh produce survey that was conducted in preparation of this mapping report. There also exists a strong interest from farmers to grow their products “organically”. It appears that this notion of organics has been developed and fostered over the years through various projects including those carried out by the Kastom Gaden Association.

With such a demand in place and a willingness on the part of farmers to grow their produce in this manner it would seem logical that some sort of certification be put in place that would provide growers with a verifiable “organic” identification for their products.

To be ‘certified organic’ means to have a costly third party certification by a reputable company. This certification process involves a considerable amount of paperwork and several audits by the certifying agency, which in this case would have to come from outside of the Solomon Islands.

Another alternative to ‘certified organic’ is the participatory guarantee system (PGS) which is basically an identification labelling for certain products that shows the product has been grown under a certain set of guidelines. The integrity of the certification lies in the members of the PGS system that regulate each other and ensure that everyone is following the same set of guidelines. The PGS often comes along with a label or logo that growers can place on products, display at selling areas or just use as a marketing tool when negotiating contracts. The system is very simple to set up and protocols for individual products are often less than one page. The value of the PGS is only as great as the customer perceives it to be. This provides a good opportunity for product differentiation for Aruligo farmers at the Honiara Central Market.

### **Middlemen**

In the Aruligo pineapple value chain there exists few, if any, intermediaries. In all but a few isolated cases the farmer is the one who transports his fruit into the market for on sale to the consumer. It appears that this notion of a middleman carries a negative connotation. When the Aruligo group was asked if they ever sold their fruit to middlemen, they were quick to say no, when in fact at least one of them regularly sells to a trader. The group went on to explain that there were those in the market who try to buy up produce, including pineapple, and then turn them around and sell them with a mark up. The Aruligo group referred to these intermediaries as ‘black marketers’ and they were looked down upon. It is not totally clear why farmers have this negative outlook on these intermediaries but it likely stems back to the idea that with the mark up applied means these middlemen are ripping off the consumer. This assumption was later verified by other traders. This perception should be addressed during the marketing skills training and farmers should be informed of the benefits of these intermediaries along the value chain.

### **Fresh Produce Survey**

A major issue raised by the group at Aruligo was the availability of market outlets other than the Honiara Market. Much of this interest was spawned by the contracts that have been secured by John Marle to supply fresh fruit; pineapple in particular.

The group identified 6 other possible outlets for their products other than the main market which they currently sell too. These were:

1. Hospital
2. Schools

3. Restaurants
4. Hotels
5. Prison
6. Church groups

It appears that although the group sees these outlets as potential markets they do not have the information to make good informed business decisions about trying to tap into these markets. Furthermore they do not have the confidence and negotiating skills to approach these buyers. There was a clear request from the group for us to provide them with some information on these potential outlets. It was therefore decided to conduct a survey of these outlets to learn more about their purchasing habits and requirements for the fruits that Aruligo deals with.

A copy of the survey is provided as Annex 1. The main findings of this survey are summarized below:

#### *Hotels*

Four hotels were interviewed with regards to their fresh produce purchases, these were; King Solomon Hotel, Pacific Casino Hotel, Iron Bottom Sound Hotel and the Mendana.

Two out of four of the hotels interviewed purchase their pineapples ONLY at the HCM. Of the two hotels who do receive pineapple delivered to their premises; one receives 90% of their fruit in this manner while the other only 10%, the remaining difference comes from the HCM.

Only one of the hotels interviewed purchases a fixed amount every week while the others just purchase according to their needs. Volumes purchased by hotels were much larger than those revealed in all other categories of fresh fruit buyers; one hotel purchases around 400 fruit per month while another purchases around 240 fruit per month followed by 120 and 24 fruit per month for the remaining hotels.

When asked what factors they take into account when purchasing pineapple fruit the most important criterion was quality (or appearance) followed by size followed by price.

Three out of the four hotels interviewed said they would be willing to evaluate any potential supplier who offers his product at their premises.

All hotels interviewed who purchase direct from farmers pay cash on the same day.

#### *Restaurants*

Three restaurants were interviewed with regards to their fresh produce purchases, these were; El Shadai, Nickki's, and the Raintree Café. Pineapple was used by the restaurants interviewed for smoothies, fruit juice, fruit salad and display/garnish.

All three restaurants buy their pineapple ONLY from the HCM. All three restaurants indicated that their purchasing requirements change every week so it is easier for them to just do the shopping at the market. Other reasons stated for shopping at the HCM were that they have to go there anyway for other produce so it is just easy to get everything at one time. Farmers are unreliable in their deliveries and this presents too much of a risk for the restaurants. Average pineapple purchases were around 10 fruit per week and the restaurant staff would go the market daily and just buy pineapple as they need it.

When asked what factors they take into account when purchasing pineapple at the market the most important criterion was quality of produce followed by size followed by price.

All three restaurants interviewed prefer to deal only with 'organic' products.

### *Supermarkets*

There were no supermarkets identified that carried pineapple

### *Institutions*

Three schools were interviewed to try and determine their purchasing habits for pineapple, these were; SICHE, King George IV, and Betikama Boarding School. Of these three schools only SICHE purchases pineapple on a regular basis, King George IV only purchases pineapple for special occasions (2-3 times per year), while Betikama grows all of their own pineapple.

SICHE purchases around 300 kgs of pineapple every week all from farmers who deliver directly to the premises. One of the Aruligo farmers, John Marle supplies SICHE with pineapple along with a supplier from Malaita and another from the Gudalcanal plains. When asked the most important criteria used to assess potential suppliers SICHE indicated Quality as the most important followed by reliability of supply.

SICHE has a real problem with unreliability of supply and therefore has strict purchasing requirements, these are; supplier must pick up a purchase order before supplying fruit, fruit must be supplied on the designated day, and payment for fruit is by cheque 1-3 days after delivery.

SICHE said they would be willing to evaluate any potential supplier who offers his product at their premises.

### *Traders*

Only two regular traders were identified for pineapple; Farmers Fresh and Richard Paku. Both of these traders were interviewed. Both traders have pineapple supplied directly from growers to their premises and purchase fruit from the HCM. In the case of Farmers Fresh they act as a sole middleman and provide fresh 'organic' produce baskets for delivery to homes. Richard purchases his pineapple as whole fruit and then peels, cuts and wraps them in plastic wrap for sale as 'ready to eat'. Both traders provide payment on delivery which is a real bonus for the farmers. Neither trader has formal contractual arrangements to purchase pineapple. Both traders have tried standing orders with farmers however farmers have not been able to meet their main criteria which is reliability so as it stands farmers bring what they can and then the traders go to the market to make up the difference.

Volumes purchased by the two traders were quite low at around 120 pineapple fruit per month for Farmers Fresh and 50-70 fruit per month for Richard. Both traders sell their fruit directly to the consumer. When asked what their clients prize most when buying their fresh produce, the traders ranked Quality as the most important followed by convenience and finally price.

Both traders prefer to deal only with 'organic' products.

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## **4 Conclusions regarding the Aruligo pineapple value chain**

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### **4.1 Opportunities**

- Branding of Aruligo name
- PGS Certification for farmers
- Expansion of pineapple production
- Extension of pineapple season and off-season production using hormones
- Improved quality and reduction of fruit losses through the introduction of field crates and improved post harvest handling
- Expansion of market outlets for farmers through an understanding of their value chain

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### **4.2 Constraints**

- Poor access from farms to the main road
- Lack of field crates/ wheelbarrows and other technologies that could improve the flow of produce from the farm to the main road
- Lack of sound information regarding pineapple seasonality and pricing that would help farmers to make informed decisions regarding use of hormones
- Expensive and unreliable transport linkages from Aruligo to Honiara Central Market
- Lack of product differentiation for Aruligo farmers at the HCM
- Lack of information for farmers regarding other potential markets i.e. hotels, restaurants, institutions etc.

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## 5 Recommended Interventions

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### 5.1 Production

- Pineapple specific production training that addresses the information gaps related to planting materials, available varieties, plant nutrition and the crop cycle. This training should utilise handouts with pictures as well as hands on demonstrations.
- Collection of market data related to pineapple seasonality and pricing. Presentation of this data would allow farmers to make more informed decisions about planning production and the use of inputs such as ethereal.
- Production planning training that incorporates simple business tools to plan production, inputs, harvest and marketing.

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### 5.2 Post harvest and processing

- Information flow of processing options available for pineapple such as juicing and jamming. A comparison of returns to labour for sale of fresh fruit and processed fruit and a structure to help farmers make informed decisions about what to do with their fruit.
- Training related to post harvest techniques to reduce damage from farm to market.

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### 5.3 Storage, handing, and transport

- Investigation to determine what the most appropriate type of field crate for pineapple farmers would be.
- Sourcing and pricing these field crates in collaboration with Farm Set.
- Stakeholder consultation with farmers at Aruligo to determine the willingness to purchase the selected type of crates at the quoted price.
- Facilitate with Farm Set the introduction of the field crates into the fresh produce sector with related post harvest training supported by financial education as the returns on an investment in field crates.
- Information flow regarding transport costs as a percentage of total expenses and ways to manage these costs through collective marketing, negotiation with transporters etc.

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### 5.4 Marketing

- Presentation of this value chain and the results of the fresh produce survey.
- Work with Aruligo farmers to understand where they fit into the value chain and what the market opportunities are for selling fresh produce outside of the HCM and what the requirements of these markets are.
- Discussion of the concept of a middleman and the possible role this type of person could play in the Aruligo supply chain.



- Collection of price data from the Honiara Central Market (HCM) for pineapple and other fresh produce products throughout the year to identify seasonality and market trends.
- Assistance to the group at Aruligo in structuring themselves into an association and support for drafting up a preliminary strategic plan to guide the group and help develop a branding of the Aruligo name. Developing the image of the Aruligo farmers as being reliable suppliers of high quality produce and rare fruits.
- Structuring of a PGS system that fits into the plan of the Aruligo group.
- Development of crop specific standards for pineapple, melons, mango and carambola that fall into line with the PGS system.
- Use Aruligo as a pilot group to trial the PGS system in terms of integrity of the group in upholding the standards and acceptance from consumers of this product differentiation.
- Andrew to input more on the marketing skills training modules to be developed. Identification of key issues and knowledge gaps to be addressed in the modules.