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## Business And Market Expansion



### Assessment of Lychee Fruit Production and Export Potential in Madagascar

May 2005

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## **Trip Overview**

### **Friday, April 8<sup>th</sup> - April 10<sup>th</sup>**

We arrived in Tana on Friday, April 8<sup>th</sup> and met briefly with Abel Rakotoniraina, the BAMEX lychee specialist. Abel reviewed our itinerary and the upcoming lychee workshop which was to be held in Tamatave. The following morning we met with Jean Robert Estime, Chief of Party and he provided us with an overview of the challenges facing the exportation of fresh lychees from Madagascar to the US. After our meeting we proceeded to the East coast city of Tamatave, which is the heart of the lychee producing region in Madagascar. Rather than travel the entire distance, as nightfall was approaching, we spent the night in the Vakona Reserve resort in Andasibe. Late on the following morning of April the 10<sup>th</sup> we continued on to Tamatave.

While lychee trees may be observed growing as far west as Tana, the regularity of plantings does not increase until the elevation begins its fall towards the seacoast east of Andasibe. The greatest density of plantings begins when the road turns north along the east coast and heads into Tamatave. Lychee plantings tend to be clustered within small villages, are older larger trees and generally are not subjected to the sort of care practices observed in orchard sized planting. As we drew closer to Tamatave we observed small to medium sized plantations of lychees that appeared to have been planted within the last 10 years, based on the size of the trees. These observations confirm that lychee production affects a very wide cross section of Malagasy farmers and is not confined to just a handful of large growers. We arrived that evening in Tamatave and checked into the Neptune Hotel which was to be the location of the upcoming lychee workshop scheduled for April 12<sup>th</sup>.

### **April 11<sup>th</sup>**

On the morning of April 11<sup>th</sup> we met again with Abel who showed us the local BAMEX offices and introduced us to the staff. Later that morning we had an opportunity to meet with Michel Jahel, director of CTHT a France based NGO (Tamatave Center for

Technical Horticulture). CTHT plays an important technical role in improving Madagascar lychee horticulture and general agribusiness.

That afternoon we met with Madeleine Gauthier, Lloyd Garcia and Greg Howell and discussed the state of affairs, issues and obstacle facing the introduction of Madagascar lychees into the US. Lloyd Garcia, Ph.D. is the Senior Agricultural Technical Advisor & Pest Risk Assessment Advisor. Lloyd is working directly with Stephan Randriananglay, who is the BAMEX employee directly responsible for drafting the Pest Risk Assessment document for submission to the USDA.

### **April 12<sup>th</sup> – April 13<sup>th</sup>**

The morning of April 12<sup>th</sup> the workshop title “Opportunities of the Value Chain for Madagascar Lychees” commenced with introductions and several important talks by speakers knowledgeable about the Madagascar lychee market chain. A very important and informative talk was given by Michel Jahel the Director of CTHT, which outlines in considerable detail the particulars of the Madagascar lychee exports to Europe. This report is packed with useful information that has a direct bearing on how future developments in a US market might evolve. Important points to note are that Madagascar supplies about 25000 metric tons of lychees to European markets and in particular France. This single massive lychee export is assembled in Tamatave from the local lychee producing regions, treated with sulfur dioxide and loaded onto refrigerator ships within a one week time frame during the first week of December, for a two week voyage to ports in France. This situation apparently creates a logistical nightmare on the roads leading into Tamatave from the countryside as freshly picked lychees pour in from every direction.

We are told that a great quantity of Madagascar’s lychee crop, that does not make it Tamatave during this first week in December to Tamatave, is lost. It is a well known fact that in any given lychee grove all of the lychees do not ripen at the same time and should only be picked when they are ripe (lychees do not continue to ripen after picking unlike many other tropical fruits). This means that if the market for Madagascar lychees

can be opened in the US, lychees ripening during December and January that otherwise are lost to the early December export opportunity, can be exported to the benefit of many Madagascar farmers.

Stephan Randrianangaly's talk on the progress of the phytosanitary situation facing Madagascar lychees, for export to the US, outlined the significant pests and the risks to US agricultural interests. Our initial assessment is that these threats are manageable and probably can be overcome by a variety of treatments prior to shipment, handling during shipment and location of the port of introduction. We feel that these obstacles are no worse than the threats imposed by importation of fresh Mexican lychees, which are now imported in large quantities to the US.

During the afternoon session we spoke first about the overall perspectives of the lychee market in the US and the market opportunity and market drivers in favor of Madagascar lychees. This talk was followed by a discussion of the issues and challenges in marketing specialty tropical fruits in the US, effective marketing methods for small business and the importance and techniques for using the Internet in a marketing initiative.

That evening we dined with Jean Robert Estime, Madeleine Gauthier and Lloyd Garcia. During this occasion we shared our group perspective on the opportunity and challenges and discussed strategies to be pursued subsequent to the workshop.

The following morning of April 13<sup>th</sup> there were some additional sessions and a talk by Lloyd Garcia about the PRA and the circumstances facing the approval process once the PRA is submitted to the USDA.

In the afternoon of April 13<sup>th</sup> we visited the plantation Flamboyant. Flamboyant (7 years old) is a relatively recent planting of about 250 or so hectares just outside of Tamatave. The plantation is an excellent example of what can be expected as the export market lychees matures in Madagascar. It consists of primarily one cultivar known collectively as "Mauritius". While this cultivar bears many similarities to the internationally well

known “Mauritius” or Tai-So cultivar the origins of what is grown in Madagascar are somewhat shrouded in uncertainty, suffice to say that the trees produce a very marketable fruit and bear heavily. The plantation was very well maintained and the cultural practices appeared to adhere closely to those outlined in the guidebook provided by CTHT. It is interesting to note that all of the grove maintenance and picking labor was performed by a resident pool of people living on and around the plantation. We were told that this particular site employed a contingent of 150 persons and their families year round. The proprietors of the Flamboyant were actively testing other cultivars of lychee that have different ripening times and we were shown a section that had been planted out with the No Mai Tze variety which is the most important commercial cultivar in China.

It is significant that the cultural practice of hillside planting is observed by the plantation Flamboyant. In view of the severe deforestation and erosion problem endemic to much Madagascar this practice serves an important role in soil conservation and should be encouraged as a key component of all existing and new lychee plantings.

Following our visit to the Flamboyant plantation we visited a refrigeration and processing plant that is presently under construction. When complete the plant, constructed and operated to ISO 9000 standards will peel, pit and freeze lychees for export during the off season to Europe and elsewhere. The same facility is also producing a frozen lychee concentrate.

#### **April 14<sup>th</sup>**

Late on the morning of April 14<sup>th</sup> we visited CTHT’s Fenerive field station. This station is located slightly north of Tamatave near the Ivoloina river on the road to Foulpointe. The facility was basically a very well organized nursery devoted to the propagation of economically important fruits and vegetables with special emphasis on lychee tree propagation and distribution.. Part of the overall mandate of the station is uniform cultivar propagation and tracking of field plantings. The station produces over 25000 marcots (air layers) annually and we are told that this production does not meet the current demand.

Lychees are propagated vegetatively through a process known as air layering where a living branch is induced into producing roots into a bag of growing medium wrapped around a circular cut in the bark. After 8 or more weeks this branch can be removed grown as a tree that can be planted in the field. Selections of lychees that have desirable characteristics are propagated in this fashion. If lychee trees are grown from seed it can take anywhere from 12 – 20 years for the seedling tree to bear fruit. The resultant fruit from this seedling tree may bear little or no resemblance to the parent tree or it may be identical. Since the introduction of lychees into Madagascar in the 1870s one can be very certain that much of what is growing throughout the countryside is the result of seeds discarded by the roadside or carried by birds or other animals. For these reasons the staff at the CTHT station are making significant efforts to ensure the traceability of local cultivars of known characteristics.

This is very significant in that lychees are graded by fruit size, seed size, coloration and flavor and it is important to insure the consistencies of these parameters for export markets where quality is a key market parameter.

That afternoon we continued on to Foulpointe stopping along the way at several local markets to observe the varieties of tropical fruits and vegetables available. That evening we stayed at the Manda beach resort and continued the following day to a wildlife resort at Ivoloïna and from there onto Tamatave.

### **April 17<sup>th</sup>**

On the morning of April 17<sup>th</sup> we departed on the 500 kilometer return trip to Tana and arrived in their in the late afternoon. During the return trip we again were able to view the extent of lychee planting along the route and conclude that the lychee is the most predominant fruit tree in this region of Madagascar. That evening we dined at the home of Jean Robert Estime and reviewed our trip, our findings and proposed action plan of items to be accomplished upon our return to the US.

**April the 18<sup>th</sup>**

April the 18<sup>th</sup>, the last day of our trip, we spent in Tana and that evening met with the Stephen Haykin the mission director of USAID Madagascar and reviewed with him our observations and recommendations of what we could subsequent to our return to assist the program.

We departed in the early morning hours of April the 19<sup>th</sup> and arrived in Fort Lauderdale, Florida that evening.

## **Fresh Lychee Fruit**

There is a significant opportunity for the importation of fresh lychees from Madagascar into the US. If the regulatory and logistic obstacles preventing this can be overcome the results would be mutually advantageous for both Malagasy farmers, businessmen, US growers of lychees and US consumers.

Lychee fruit is a high value agricultural commodity in the US; however, the very limited season (approximately 6 weeks mid May – July 1) in the late Spring prevents it from being widely accepted and anticipated. Madagascar fruit would be available during the US holiday season running from Thanksgiving through New Years. This is a significant time frame in that there is little other fresh tropical fruit available in US markets and consumer spending and eating is at a peak. There are no fresh lychees available in the US during this time and if Malagasy fruit were available it would fetch a premium price in the marketplace.

## **Transportation**

Freshness is an important issue and the post harvest handling of the fruit is an important issue since the fruit will be shipped fresh without preservatives. The fruit must reach packing and distribution facilities in the US within two days at the most and during this time it must remain within the cold chain. The fruit, initially would have to be air freighted from Tana or other departure points within Madagascar. Transshipment would be most probably be through South Africa to Miami or New York. Jean Robert Estime figures that 20tons/week would be available during the season. The use of Sulfur Dioxide to preserve the fruit is out of the question, as this is illegal in the US. A Madagascar based company STOI Madagascar, which produces a high quality organically grown lychee, is already proposing to charter a plane from Madagascar to South Africa and from there to the US specifically to meet these requirements when approvals are obtained.

## **Price Estimates**



The wholesale price of Malagasy fruit in the US would cover added costs related to shipping to the US. The retail price of the fruit during the 1<sup>st</sup> season would be from \$8 - \$10/lb. The wholesale price would be around \$3.00/lb. This would be sufficient to cover the estimated \$.90/lb required for shipping and still return \$2.00/lb to Malagasy exporters.

When the Madagascar season arrives in November test samples must be sent to the US to validate shipping and packaging issues.

We can make arrangement with IFAS (Institute of Food and Agricultural Sciences at the University of Florida in Homestead) to receive and evaluate the fruit samples.

If fresh fruit can be imported to the US this will help small Madagascar farmers because the typical planting are small.

Imported Malagasy fruit will help boost the market for US growers because it will not compete with US produced fruit. Madagascar fruit would be available during the holiday season running from November through January when demand would be the highest and price resistance the lowest. Many more Americans would have the opportunity to experience lychee and this would lead to an expanded market demand for the fruit during the US season (May – June), thus helping US producers who have been faced with steadily decreasing wholesale prices due to increased foreign competition from China and Mexico.

With respect to the PRA we can campaign on behalf of Madagascar fruit. During the federally mandated commentary period we can get positive commentary from high profile US growers and their representative organization.

Our strategic partner Fresh King moves in excess of 500,000 lbs during the US season and should be able to double or triple this amount during the off-season.

We expect that BAMEX can provide selected exporters on the Madagascar end who can provide high quality fruit and comply with the specialized shipping requirements.

We need to be provided with the contact information of people we need to collaborate with stateside to facilitate the approval process. This would include the Malagasy ambassador to the US and other people who may be potentially politically influential.

### **Value Added Products**

We have identified several forms of processed lychees that we can move ahead with in the near future.

Lychee pulp/Puree – We can purchase this from Madagascar vendors and will start with a container provided that we approve the sample to be made available in December. Our first order would be placed in December. We will use the puree as a source for our syrup product and we can resell the puree into the juice and confection industry.

Peeled/Jarred lychees – Following our visit to the Plantation Flambouyant we visited a processing and freezing facility that was under construction. This facility can produce peeled lychees in glass jars for export to the US, according to specifications that we will provide. We believe that there is a sizable market for jarred lychees in the food and beverage sector. Glass jars are a far more appealing packaging medium for fruit and vegetable products. They not only allow for better product presentation, but they permit resealing the jar between uses unlike the situation with a can. Furthermore, canned lychees develop an undesirable taste which is not present in products preserved with glass. We will further experiment to see whether lychee fruit juice or syrup is the best medium for packaging.

Based on the success of these products it should be possible to determine where other value added products may be appropriate for the US market.

