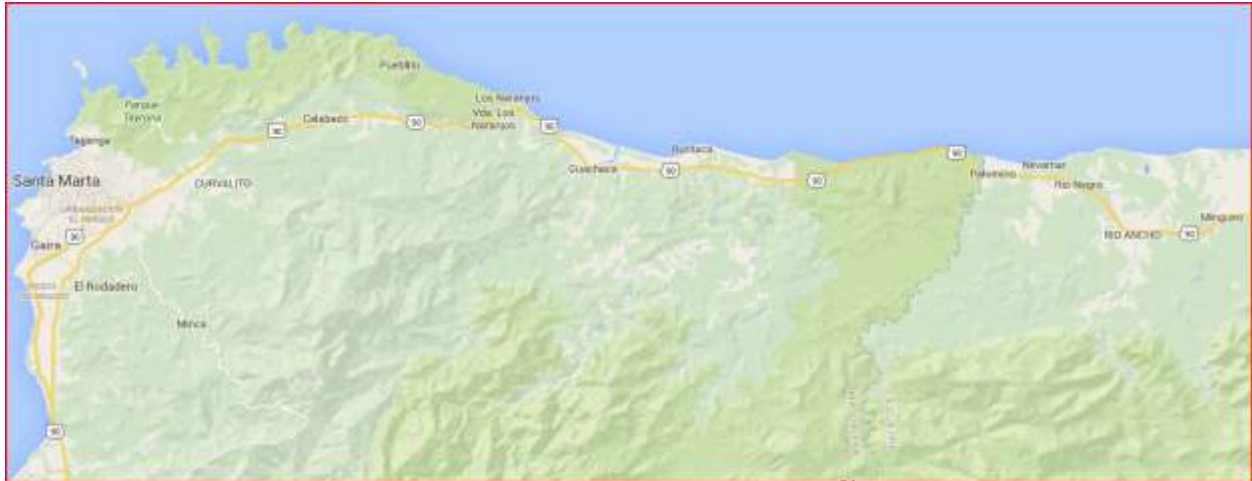


Notes: Visit to Three Cacao Facilities

4/21/2016

Prepared by Jim Fisher, PCV-R

A team representing the USDA, UN and Peace Corps visited three cacao processing facilities located between Santa Marta, Magdalena and Mingueo, La Guajira.



Team Members:

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Purpose

- Familiarization with regional resources for growing, processing and marketing cacao
- Visit sites as potential centers for training in cacao production, processing and marketing
- Discuss challenges and needs with growers and processors for increasing cacao production

Factors for Training Site Selection

- Facilities in operation:
 - Growing – hectares of land in production

- Fermenting and drying – enclosed structures, weather proofing
- Final production – roasting, grinding, refrigeration, packaging
- Access
 - Transportation to facility
 - Transportation to growers
 - Food and Lodging for trainees and visitors
 - Utilities
 - Water
 - Sewer
 - Electricity
 - Natural Gas
- Experience
 - Planting, maintaining and harvesting
 - Processing
 - Education and tourism
 - Marketing and logistics
 - Grant management

Conclusions

- Each of the facilities had strengths and weaknesses as a host site for training.
- The first facility was more accessible for trainees, being located closest to Santa Marta on the highway. One grower was located nearby, but was struggling with drought conditions and a lack of irrigation. The processing system was all weather with a polycarbonate roof and enclosed fermentation area, a mechanical bean sheller/peeler and potential to add additional processing. Space was limited for instruction of larger groups.
- The second facility was under construction and will have a building similar to the first facility when completed. They maintain a small demonstration orchard next to the facility, but this drought has negatively impacted production and plant health. Irrigation has not been able to deliver adequate water. Interesting small scale efforts at drip irrigation appeared to have been tried. This facility is managed by an Arhuaco tribal group and would be bilingual.
- The third facility in Mingeo is the most distant from the rest of Colombia. It was not clear to me that any cacao is grown nearby. This facility has more traditional open air fermentation and drying processes. However, they have a full production process through to packaging and marketing chocolate. They currently lack a bean sheller/peeler and devote considerable time to hand-shelling beans.
- This report lacks important information including precise locations of these facilities and accessible cacao plantations, amenities like food and lodging and production statistics.

Final thought: The first facility appears to have a good mix of needed attributes. Challenges for this and all three of the sites include adequacy of training space, access to growers, access to research facilities, access to irrigation. Details follow.

First Site: Guardabosques de la Sierra: Asociación de Organizaciones Asociativas, Agro-turísticas y Sostenibles De Bosques de La Sierra Nevada de Santa Marta - Trompito Bajo, Magdalena, Colombia
Correo: CL 16 5 64, SANTA MARTA, MAGDALENA

Consolidación Territorial en la Casa del Chocolate y el concurso Cacao de Oro 2015

This facility is compact, but appears to have the necessary components to take Cacao from fruit to dried, shelled beans. I did not see equipment for roasting, grinding, mixing, molding, refrigeration and packaging of final products. As this organization has won national awards for chocolate, these facilities may be located at another site.



The Guardabosque facility serves a large area with approximately 80 farmers (need to verify)

This facility is located close to sea-level while most of the farms are located in the nearby foothills of the Sierra Nevada. Much of the product reaches this facility by motorcycle as the roads are not navigable in truck. A motorcycle can carry up to two sacks of fruit.



Cacao is delivered by farmers in sacks as “Baba” or un-fermented fruit.

Wooden Boxes are used for stages of Fermentation lasting approximately fourdays.



Thermometer used to verify that ideal fermentation temperature has been reached



At the end of the Fermentation Process the outer fruit layer has dried, with some of the content absorbed into the bean.



After fermentation the beans are moved to the second floor where they are exposed to high temperatures under a polycarbonate greenhouse



The dried beans are sold, or can be further processed. The next step is to remove a thin outer-shell using a peeler/sheller/winner. Additional hand cleaning is also required.



The facility director (blue shirt) took us to a nearby cacao producer. The shortage of rain has been the biggest challenge, particularly in hot, coastal locations.



The farmer described some of the challenges he has faced. He is interested in using irrigation on this land, but either has not had the funds for pumps, pipes and electricity or hasn't felt these would result in sufficient increases in production.



The cacao pod in the center of this photo has been gutted by a squirrel (ardilla). When production is lower, pests take a higher percentage of what remains.

Site 2: Cacao Hunters - Arhuaco Production Facility – Don Diego, Magdalena, Colombia

Carrera 6 45 N 41, Popayán, Magdalena, Colombia

Cell Phone: 310 2241831

Website: <http://www.cacaohunters.com/>

Facebook Page: <https://www.facebook.com/CacaoHunters/>

News Article: www.elheraldo.co/economia/pnud-apoya-arhuacos-para-cultivar-cacao-en-la-sierra-nevada-155945

This project received support from several programs including PNUD, South Korea and the Colombian Government. Over six years production has increased and quality has improved. 220 Arhuaco families, 70 non-indigenous and 54 victims of violence participated in the original program planting 334 hectares.



Cacao Hunters was awarded an [International Gold Medal in 2015](#). This group is primarily made up of Arhuaco tribe. Cacao is produced from the coast into the Sierra. During this two year dry period production has been higher where there is irrigation or better soil moisture and where temperatures have been lower.



Cacao building under construction. This design is similar to the building at the first site with a polycarbonate roof, plans for a plywood second story floor for drying the beans, a cement and cinderblock first floor for fermentation and small quantity chocolate production.



The manager demonstrates the unique features of the white or Porcelana Cacao.



Exterior of new processing facility. The architect estimated completion by May, 2016.

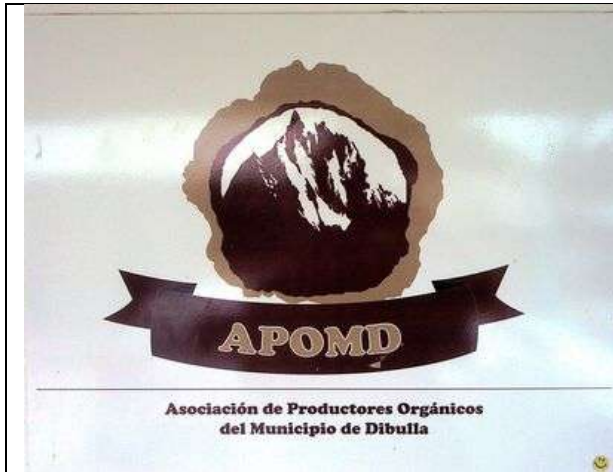


Example of a grafted Cacao plant with pods emerging above and below the graft. Those below the graft share genetic characteristics of the root stock and is not expected to be of equal value.



The manager speaking with USDA expert Juan Gallego. Drought conditions have been a serious challenge for the farmers. The dug well used at this facility has run dry on occasion. They plan to dig it deeper.

Site #3: Asociación de Productores Orgánicos del Municipio de Dibulla (Mingueo)



The Asociación de Productores Orgánicos del Municipio de Dibulla facility in Mingueo is purchasing cacao in “baba” and dry bean from surrounding communities. They represent 100-120 hectares of cacao production and 37 farmers they are looking to bring online another 300 hectares of production. It is a fraction of the cacao produced in the area.



The APOMD facility has boxes and trays for fermenting and drying cacao. They are experimenting with cascading boxes and other methods for moving the fermenting beans more efficiently.





Drying is carried out in open air trays. The trays are constructed of wood with plastic mesh on the bottom.



This facility does not have a polycarbonate roof. Rain is less frequent in Mingueo. When it rains they staff cover the trays with plastic tarps or move them under a roof.



This device is used to measure the humidity of beans. This batch had reached 9% humidity, but the target is 7%.



The dried beans are roasted in this small, rotating oven. At current levels of production the roasting, grinding and packaging operation runs once every two weeks. This could be scaled up as market conditions permit.



A hand powered grain grinder was used initially to grind the roasted beans into cocoa syrup. It was later upgraded with the addition of an electric motor that increased their throughput. They run the syrup through the grinder two times to reduce the prevalence of lumps.



The syrup is poured into plastic molds and refrigerated. When it is cold it is removed from the molds and packed into foil pouches.



The pouches are sealed with an electric press. Paper labels are applied by hand to the foil pouches. The labels don't appear to fit the shape of the pouch well and are difficult to apply.



The final product "Nevada" brand cocoa is sold locally and/or repackaged by national brands with other labels.