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Market Chain
Enhancement
MarChE
Project

FRANCISQUE MANGO MARKET CHAIN

TABLE DES MATIÈRES

BRIEF OVERVIEW OF THE HAITIAN MANGO VALUE-CHAIN

Mango is one of the main fruits grown in Haiti, which also ranks among the top ten world producers of this commodity according to FAO.

The mango sector in Haiti is dominated by 16 grower groups (FENAPCOM) with various levels of institutionalization in the entire important mango growing areas, and ten (10) major exporters (ANEM).

Domestic production estimates vary between 200,000 and 400,000 MT over an area of 40,000 hectares.

The Francisque variety, which accounts for 15% of total production, is the only source of mango export due to its resistance to hot water treatment to comply with USDA/APHIS certification requirements.

Currently, Haiti exports approximately 2 million boxes of USDA-certified Francisque mangoes at an average FOB price range of $5 to $6 per box.

THE FRANCISQUE MANGO

The Francisque mango is unique to Haiti in the Americas and offers a totally different taste than the competition.

This offers DFSA and UCOOPEDSA a unique edge in that market.

A market research done in Boston by XXX in XXXX revealed that our dried mangoes were more appreciated than the dried mangoes imported from Asia

THE DEHYDRATED MANGO

Dehydration became a mean of safeguarding fruits when men started to seek natural methods of preserving food.

With their low rate of humidity (12 to 15%), dried fruits do not favor convenient bacterial activity, which allows a long preservation of these products.

Studies conducted during many years by DFSA have concluded that a real and durable industry of dehydrated fruits must rely on electrical production.

Solar dehydration comprises too many uncontrollable variables which makes it a high risk enterprise.

Moreover, dependence on the sun does not insure a constant and maintained production which is necessary to meet the demand of the international market and profitability.

THE DEHYDRATED MANGO

Dehydrated mango became popular around the nineties when dried fruit amateurs began tasting them for the first time.

It later became most sought after on organic markets.

With a particular patronage more and more conscious of their health, dehydrated fruits became the alternative to potato chips, and fast foods, loaded with saturated fat so dangerous to one's health.

Today, dieticians are more and more recommending adding them to the cereals ones consume every day, and to the sorbets that are being sold in specialized houses.

Our product had been certified organic in the past by BCS Öko-Garantie and DFSA will re-launch the certification process for the Mirebalais plant.

MAIN HAITIAN MANGO VALUE-CHAIN STAKEHOLDERS

The stakeholders in the mango value chain comprise:

- The producer groups and small farmers collectors,
- Handlers and field carriers,
- Madame Saras,
- Exporters,
- USDA/APHIS and
- The Ministry of Agriculture.

THE UNMET MARKET NEEDS, CONSTRAINTS OR OPPORTUNITIES

The constraints in the mango value chain fall into 4 broad categories:

- Organizational
- Capitalization
- Value added quality and
- Value added quantity.

Many of the opportunities are responsive to multiple constraints.

THE OTHER CONSTRAINTS

Other constraints include:

- Inadequate pest control,
- Improper post harvest manual handling,
-
- Truck conditions,
- Travel distances,
- Bumpy roads, and
- Fruit maturity when picked.

DFSA'S PLANNING MATRIX

Problems	Objectives	Activities	Indicators	Measurement methods
Lack of investment in economic opportunities in Saint-Michel de l'Attalaye	**Establishing a drying plant cell that will create jobs for the locals**	**Drive the success of the cell by encouraging production and interest**	**The cell is operational and properly managed by the Coop.**	**Site visit**
Large loss in quantities of fresh mangoes due to infrastructure problems	**Process fresh mangoes to take advantage of large and cheap supply**	**Drying mangoes will aid in taking advantage of large supply**	**Lbs of mangoes produced per month**	**Monthly invoices**
Inadequate energy structure to process additional UCOOPEDSA output and reduce extra cost added to the DFSA structure by the new cell	**Add 2 additional generators to the main DFSA plan and establish a connection to local energy supplier.**	**1. Acquisition and installation of these generators on 2 different circuits. 2. Apply for local energy source**	Electrical power is available	**Site visit**
Poor quality level of UCOOPEDSA cell	**Score 80% quality score over 4 months**	**Audit and training to plant employees**	**Amount of violations reported.**	**Test and Audit Scores**

THE OPPORTUNITY

- Assure adequate Francisque mango supply to the Miami and East Coast Haitian Diaspora markets

THE MAIN STRATEGY FOR THAT OPPORTUNITY

Create

- Profit-centered,
- Well managed,
- Highly supervised for the first several years
- Diversified,
- Stand alone

Mango Francisque grower groups in

- Camp Perrin

MARCHE'S INTERVENTIONS

1. Facilitating the interaction between ORE, ASPVEFS and MARNDR for the field implementation of fruit fly detection and control program,

2. Providing technical assistance to ANEM to increase their capacity for improved services,

3. Cooperating with partners and other organizations (e.g. Caisse Populaire) to structure the demand and financial products required to service the mango industry,

4. Assisting in the systemic deployment of improved packing material to highly visible associations, and

5. Launching a market development campaign to encourage the use of new techniques based on measurable and demonstrated benefits to the growers.

MARCHE'S REGIONAL COORDINATOR

DELICIOUS FRUITS S.A. (DFSA)

DELICIOUS FRUITS S.A. (DFSA) is a corporation founded under authorization of the Ministry of Commerce and Industry of Haiti dated October 13th 2004 and published in the official government newspaper « le Moniteur ».

It is operated by a team of competent persons whom has acquired through the years, a substantial experience in the farm produce industry.

DFSA currently produces and exports dried mangoes in the US.

It wants to increase its production and develop the industry of dried mango by tapping into the existing Francisque mango supply in abundance in the country.

However, 40% of Francisque mangoes are being rejected for cosmetic issue, which create an opportunity to use these rejects.

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THE DFSA TEAM

Délicious Fruits S.A.

Délicious Fruits S.A.

GONZAGUE LAGUERRE

Délicious Fruits S.A.

EDUCATION

1995-1999 University of Puerto Rico, Mayagüez Puerto Rico **B.S. in Chemical Engineering** GPA: 3.27

1993-1995 InterAmerican University of Puerto Rico, San German Puerto Rico

WORK EXPERIENCE

2003 - Present IPHASA (Industrie Pharmaceutique S.A.) Port-au-Prince **Consultant**
Implement the HACCP program in their facility. Perform quality control tests on the raw materials and finished products. Increase production capacity.

2002 - Present **Sphinx Industries** Port-au-Prince ***CEO and Founder***
Sphinx Industries was founded with partner Valerio Vital-Herne. We manufacture mosquito repellant, disinfectant and candles.

1999 - 2002 **Gaz Industriels Associes S.A.** Port-au-Prince ***Assistant Technical Director***
Write procedures on the chemical and operational process of producing carbon dioxide (CO_2) for the beverage industry. Ensure CO_2 quality meets Coca-Cola, Pepsi-Cola and ISBT specifications. Manage preventive maintenance program and production yields for the CO_2, O_2, and Acetylene plants. Train, supervise, and audit plant operators.

JEAN SUCCAR

EDUCATION

Masters in Business Administration (Emphasis in Supply Chain, Competitive Advantage and Cost Control)
Arizona State University, Tempe, FL (*August 2003*). Graduated with **3.9** (of 4.0)

Bachelor of Science in Chemical Engineering *Minor in Business Administration* with emphasis in Management
University of Florida, Gainesville, FL (*August 1999*). Graduated with *High Honors* with **3.60** (of 4.0)

Associate in Arts in Chemical Engineering
Miami-Dade Community College, Miami, FL (*1995-1997*). Graduated with 4.0 with Highest Honors and Distinctions

WORK EXPERIENCE

.2005 - Current	Acra Financial Services AFS (Western Union's agent). Port-au-Prince, Haiti. Executive Director
2006 - 2007	Transferglobal. Worked on building business plan for food transfer business.
2003 - Current	Délicious Fruits SA. Tabarre, Haiti. President of the Board of Directors. Successfully launched the company from scratch. DFSA now exports dry mangoes and other dry fruits to the United Sates and

ST MICHEL DE L'ATTALAYE

- Remoteness of the area
- Ranked 103 out of 135 Communes in the 200? poverty map of Haiti.
- Extremely poor road infrastructure between Port-au-Prince and Saint- Michel.
- Unreliable transport vehicles.
- Difficult to find adequate repair parts in a timely manner.
- Dangerous road conditions due to floods
- Consequently, huge loads of mangoes begin to rot and the entire production is lost, resulting in lost revenues.
- Extremely weak demand in consumption in the surrounding regions
- No merchants are willing to venture into buying and selling mangoes for profits.
- Saint-Michel de l'Attalaye plant built by Oxfam

ST MICHEL DE L'ATTALAYE

- Localisée dans le Département de l'Artibonite, arrondissement de Marmelade.
- La commune de Saint-Michel compte 8 sections communales. C'est la plus vaste
- commune du haut Artibonite située à 26 Km d'Ennery et à 20 Km de St Raphaël
- La superficie de Saint-Michel de l'Attalaye est estimée à 620,5 km2 (la première Commune en importance territoriale du pays) pour une population de 114,175 habitants dont 51,85% de femmes.
- Entourée d'un chapelet de 7 communes (Maissade, St-raphael, Dondon, Marmelade, Ennery, Dessalines, Gonaives avec lesquelles elle partage des aires agro- écologiques.
- Constitue un grand carrefour entre 4 régions du pays (haut Artibonite et Bas Artibonite, haut Plateau central et le Nord SMA a une assez bonne pluviométrie allant de 1000 à 1600 mm par an.
- 60% de la commune est constitué de vastes étendues à faible pente (0 à 12%) et de ce fait, un fort potentiel de mécanisation avec des risques d'érosion «allant de moyen à faible pour plus de la moitié des terres: situation de plateau).

ST MICHEL DE L'ATTALAYE

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- Géo-morphologiquement, elle est constitué de 49,81% de situation de plateau, 38,55% de mornes et 7,43% de plaines. (Les vastes étendues de terre à faible pente occupe 60% de la superficie de la commune comme celle de la Savane Diane d'une superficie de 25,000 hectares se prêteraient bien à l'élevage et à la production intensive et industrielle de cultures (Céréales, vétiver, citronnelle, ricin pour la production d'huile).
- Détient un réseau hydrographique dense et riche en eau (62 sources) et alimente des cours d'eau majeurs du pays dont notamment le Fleuve Artibonite et la Quinte.
- Loge actuellement deux des plus grands lacs artificiels du pays avec un potentiel de 200 à 800 tonnes de poissons/an).

ST MICHEL DE L'ATTALAYE

- Réputée pour la forte fertilité de ses sols, sa production de fruits (mangues, avocats) et de canne à sucre transformée soit en sucre artisanal brut (sirop, rapadou) ou en alcool (rhum blanc ou clairin). Environ une centaine (100) de distilleries ''guildives'' ont été recensées.
- SMA est une commune ayant un fort potentiel de développement agro-industriel. Vers les années 1970, elle a logé l'Établissement Agro-industriel de Louis Dejoie (ETAGILD) qui fabriquait des huiles essentielles à partir du vétiver, de la citronnelle et du citron. Cet établissement agro-industriel représentait des opportunités économiques pour la population de la commune.

ST MICHEL DE L'ATTALAYE: THE OXFAM PLANT

- The Saint-Michel de l'Attalaye plant was built by Oxfam Quebec with the help of DFSA on behalf of UCOOPEDSA to help address this issue.

- This plant has the capacity to produce 4000 lbs of dried mangoes per month.
- This plant will help address the issue of surplus by processing 48,000 fresh mangoes per month.

- By drying these mangoes, they are able to withstand the test of time, thus solving the time sensitivity problem with the fresh fruits.

- Once the plant begins production, it will generate 20 direct jobs and 45 indirect jobs for Saint- Michel de l'Attalaye. From these jobs, almost 70% will be for women.

- This will impact the farmers with an average new income of $ 16,000 USD per year at the current plant capacity.

UCOOPEDSA

DELICIOUS FRUITS ' STRATEGY

DFSA, in order to insure a good position in the dehydrated fruits market, has elaborated a strategy which consists of providing all the major mango producing regions of Haiti, their own center of mango production, their own centers of dehydrated fruits, called « Cells » in such a way as to gather for the project all the productive force of the country.

DFSA, in partnership with a cell owned by Union des Coopératives pour le Development de Saint Michel de l'Attalaye (UCOOPEDSA), a 337-peasant association hopes to create 20 direct jobs and 45 indirect jobs (with ~70% of these jobs going to women) and tap into the available resources of Francisque mangoes that cannot participate in the fresh mango export industry due to bad roads.

This cell needs additional help to ensure its success in launching and its durability via a 4-month project.

THE PRODUCTION CELL : OVERVIEW

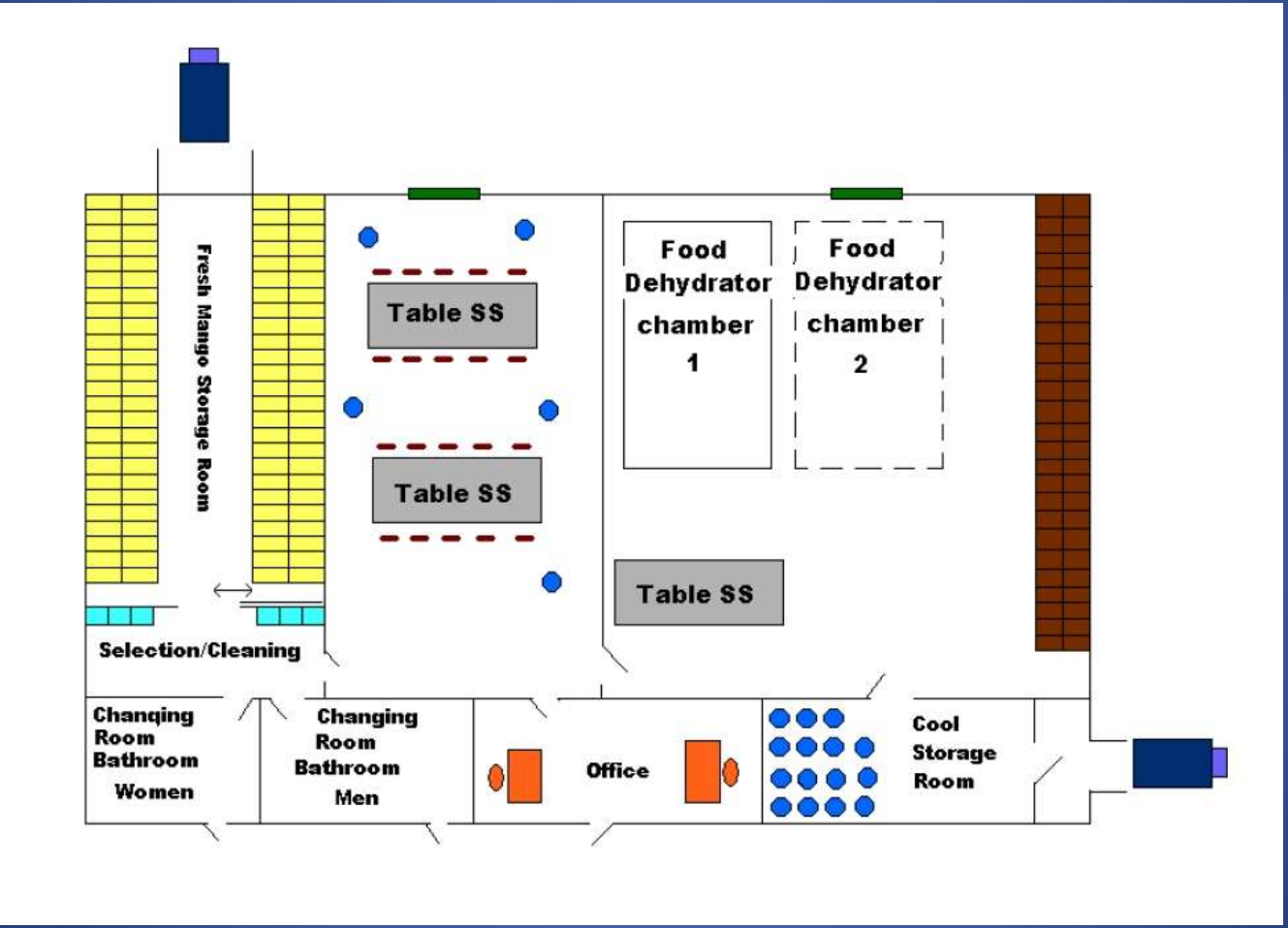
Following 7 years of hard research work, DFSA has succeeded in developing a unique concept of increasing the dehydrated industry in Haiti:

the production cell which will make dehydration of mangoes and other fruits a profit making activity.

The center of production will be established with the assistance of rural cooperatives or peasant's organizations known in the area where there is abundance in mangoes, coconut and other commodities that can be dehydrated.

By establishing a center of production in the areas most likely to develop the "St Francis" mango, the farmers will ensure a new source of income which will allow them to increase the global production of the country.

THE PRODUCTION CELL : OVERVIEW



THE PRODUCTION CELL AND THE PROCESSING CYCLE

For hygienic and practical reasons, the final treatment of dehydrated mangoes and others (rehydration, pasteurization, and packing) for export, will take place in the capital city.

Production cells will only dry the mango.

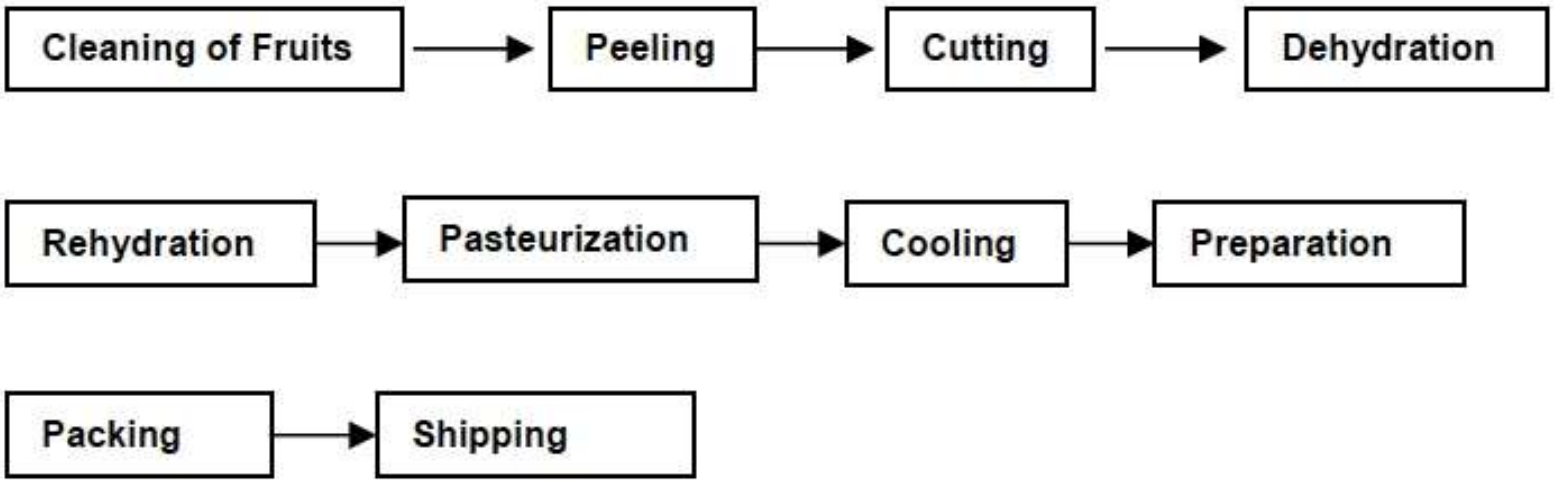
Such a decision will yield many advantages:

1. Cost reduction of the cell: This will facilitate proliferation, throughout the country (which is the next phase), of the production cell concept.
2. Simplification: The science of re-hydration, pasteurization, and packing is most exact and complex. It requires a specialization which will only complicate the cell. Consequently, these processes must be utilized under strict conditions to prevent variation in the taste caused by contamination or risks of biological and chemical contaminations that in turn will create risks of rejection of the product on international markets.
3. Ease of implementation: The exporting process may be very complex and DFSA is already familiar with the processes of clearing customs.

THE PRODUCTION CELL AND THE BY PRODUCTS

The dehydrated mango industry withholds many by-products most likely to encourage its development by the advantages it will offer the country.

- The pits properly dried and good for culture will yield the seeds of future mango plantation to be used as national production, as previously described.
- The peelings added to the daily ration of poultry will be a source rich in calcium, pectin and containing 8 to 9 % of protein.
- There leftover pulp attached to the pit, properly extracted, will be used to make preserves, jellies and juice of mango on the local market.


Cleaning of Fruits
Peeling
Cutting
Dehydration
Rehydration
Pasteurization
Cooling
Preparation
Packing
Shipping

WHY THE MARCHE GRANT

The present project for which a grant is sought will:

1. Double the production from 4000 lbs to 8000 lbs per month.
2. Reduce energy cost by 20%
3. Increase capacity of plant to process UCOOPEDSA output.
4. Have the UCOOPEDSA plant achieve at least an 80% quality score in the DFSA scale over 4 months.

HOW DFSA WILL USE THE MARCHE GRANT

The above requires the implementation of the following strategy:

1. Increase the power capacity of the main plant (DFSA) in order to reliably process twice as much dried fruits

2. Facilitate monthly train and audit to the UCOOPEDSA personnel in order to professionalize them and ensure that they are heading in the right direction.
3. attend several tradeshows in order to identify importers needed to grow the business even further.

4. The total cost of the project is $53,242.86 and DFSA solicits the help of MarChE to assist with $25,000 of this cost through a grant.

FOR A NATIONAL 3 MILLION MANGO TREES PLANTING CAMPAIGN

While the actual national product of the "St Francis" Mango insures the survival of their growers across the republic, a national campaign aimed at adding some 3 million mango trees to our national stock, will further insure continuous work to local hands such for :

1. Culling and stoking
2. Loading
3. Transportation to the purchase points
4. Sorting
5. Sterilization prior to exportation
6. Selection
7. Inspection and
8. Packing.

In addition, DFSA plans to monitor the cell's progress and train the employees of the cell for 4months.

CONCLUSION

DFSA through its skilled staff (2 managers with background in chemical engineering, business administration, accounting, quality control, architecture with 5 years of experience in the mango drying business) plans to ensure the durability of the UCOOPEDSA cell and use it as a springboard to build other cells in Haiti generating more revenues and jobs for many other Francisque mango producing regions.