

Company: Vegetales Fresquita
Country: Costa Rica
Project: Program TMF: Poverty reduction and environmental improvement.
An integral, sustainable development strategy.
Year: 2005

The Company

Vegetales Fresquita was founded in 1991. It is located in San Isidro del Guarco, Cartago. Its headquarters process cooked food, juices, species and processed vegetables and greens.

Currently, the company has achieved a leading position in its branch – employing 70 people and producing at least 200 indirect employments from farmers to distributors. The base for their success, according to company's considerations, has been its ability to adapt to the market's demands, its willingness to diversify, its competence to introduce new products in the market, and investor's attitude to re-invest in the company.



MISION

"Vegetales Fresquita is an agro-industrial company dedicated to the making and distribution of hygienic vegetables products which ease daily business operations involved in the food field and of final consumers in general."

PRODUCTS AND MARKETS

The company has four lines in their products:

- Processed vegetables and greens (60%)
- Cooked food (21%)
- Juices (18%)
- Species (1%)

The company caters to four different types of clients:

- Supermarkets (30%)
- Fast food restaurants (54%)
- Institutional clients such as companies' cafeterias and private high school (10%)
- Direct clients, who visit a sells point in the city of Cartago (6%)



PROJECT DESCRIPTION



The methodology to implement the Sustainability Strategy in the company started with the conceptualizing of the sustainable development system –at which stage an internal and external organizational analysis took place to determine its sustainability profile, as well as its options for improvement in the environmental, economic and social dimensions.

Later on, a sustainability strategic work frame was established; it comprises the organization's strategy – which includes Mission, Vision, organizational values, strategic objectives in the three mentioned dimensions, and the company's commitment to sustainable development.

Based on the strategic work frame, the action plans were defined in each dimension; and the monitoring mechanisms and indicators were established to guarantee the fulfillment of the established strategic objectives.

Later on, training and technical assistance were provided to support the company in implementing the action plans. This way, it was intended to fulfill the transfer of knowledge to the organization; also, the follow up oriented towards the achievement of the expected results was developed.

MAIN OBTAINED RESULTS

Starting diagnosis	Achieved Improvements
ECONOMIC DIMENSION	
<ul style="list-style-type: none"> - Need to establish a plan which allows monitoring of the different strategic aspects in the company, such as: finances, clients, internal processes, learning and growth. - Need to maintain clients' loyalties strategies. 	<ul style="list-style-type: none"> - A strategic plan was designed as well as indicators to follow up established objectives. - A tool was prepared to allow assessments of clients' satisfaction as to give feedback to the company regarding success and improvement opportunities, and achieve clients' loyalties.
ENVIRONMENTAL DIMENSION	
1. Efficient use of raw materials and prevention of solid waste production	
<ul style="list-style-type: none"> - High production of organic solid wastes (14.9 m³/day of peels and trimmings, plus 7 m³/day of coconuts)  <ul style="list-style-type: none"> - Inadequate management of organic solid waste. The site for the solids' disposal is close to a stream thus causing superficial waters pollution with leachates. Besides, other environmental vectors - such as animals (birds and rodents), and stench - arise. 	<ul style="list-style-type: none"> - A program of waste separation and quantification was implemented in each area with the objective of improving their treatment, and to promote a decrease in waste.  <ul style="list-style-type: none"> - Measurements were taken to decrease the amount of waste sent to the disposal site: <ul style="list-style-type: none"> ▪ Approximately 40% of the organic waste is being given out to be used as cattle food. ▪ 18% of the coconut waste is given out to be used as fertilizer. - Directions were given to limit the humidity level in waste in order to decrease the amount of leachates generated once disposed. - Directions were given to improve the final disposal site - starting with the making of a detailed land mapping and a soil study. - Directions were given to use compost, as to decrease the volume of solid waste, and additionally attain an added value (fertilizer) from the generated sub-product.
2. Efficient water use and prevention of waste water production	
<ul style="list-style-type: none"> - Lack of indicators to monitor water consumption in the productive processes and the generation of wastewaters. - Intensive water use involving the productive processes, and high generation of residual waters - which have not been characterized physio-chemically. 	<ul style="list-style-type: none"> - It was possible to track down that currently 13.3 liters of water are used for each produce kilo, and 12 liters of residual waters. These measurements will continue to be made by the company, and - with the objective of making the process easier - a water meter will be installed. Besides, the water consumption indicator will be used as a marker to assess each area's production performance. - Directions were given to reuse wash water to clean trucos and other activities which do not require optimum quality water. - Directions were given to eliminate the adding of polluting agents into wastewaters. In this sense, special emphasis was given to the handling of dry waste products.



- Weak personnel awareness when using water resources.

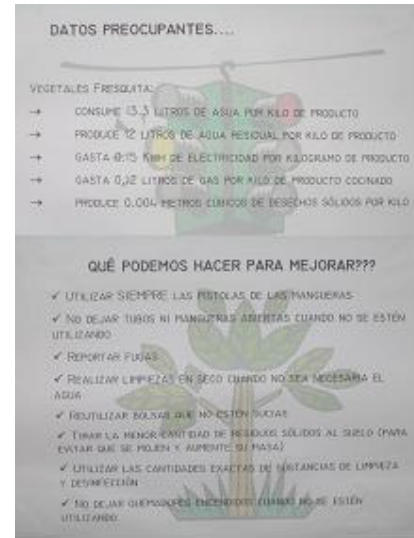


- Leaks in the storing water system (17% of the stored volume is lost – 9 m³/day).
- Sub-dimensioning of the water pumping system (storage volume: 52.2 m³/day).

- Directions were given to improve solids retention to avoid their entrance into the water evacuation system.
- The physio-chemical characterization of wastewaters was done.
- Water pistols were installed to limit the amount of water consumption during the different processes.



- The purchase of a hidro-washer is in process. It will be connected to the chiller so that the water from the last rinses may be used to cool products. It has been estimated that with this investment, 567 liters (150 gallons) of water would be saved per month.
- Personnel from the processing areas were trained in contamination prevention – being a focal topic conscious use of the water resources. Posters were also placed with the compiled indicators to enhance personnel's sensibility.



- The water storage tank was reinforced and waterproofed. This means a decrease in water consumption of 9 m³/day.

3. Energy Efficiency

- Lack of indicators to monitor consumption in:
 - Electricity
 - Gas
 - Diesel
- High electricity consumption due to the amount of machinery, and the continuous pumping of water (299,468 KWH/year).



- Considerable fuel consumption by the delivery trucks.

- It has been estimated that current consumption is:
 - 0.15 KWH / kg of produced product
 - 0.12 liters of gas / kg of cooked food
 - 1781 liters of diesel/month
 - An energy management auditing was done. Measurements were taken and as of January they resulted in a 15.4% decrease of electricity consumption (21,114 KWH/month) in regards to what had been established. Some of the implemented measures are:
 - Air leaks around the refrigeration room doors were sealed.
 - The air-conditioning is disconnected in refrigerating chambers where not needed.
 - Additionally, an action plan was defined to carry out the recommendations resulting from the energy auditing. Among the measurements on the short term are:
 - ✓ Keep doors to refrigerating chambers closed
 - ✓ Preventive maintenance of the pipes' insulation
 - ✓ Turn off lights and equipment when not needed
 - ✓ Change incandescent light bulbs for saving lamps (compact fluorescent)
 - ✓ Periodically clean the lamps
- Also, a high electricity consumption was detected in the lettuce container (refrigeration), so the following recommendation was made on the medium term:
- ✓ Use insulation in the lettuce container to reduce air-conditioning consumption. This will allow a saving of up to 29% (\$700/year)

- Directions were given to restate delivery routes to decrease fuel consumption.

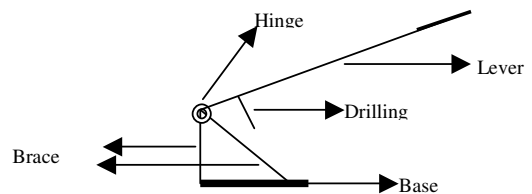
SOCIAL DIMENTION

Occupational Safety

- There is no adequate risks and accidents monitoring.
- Inadequate height of the cooking system (burner and table), resulting in lifting weights problems during this process.
- Coconuts' cutting done manually with a machete becomes a major cut-risk to the worker.



- Directions were given for adequate use of burners and other instruments (glove wearing, containers' filling, handling of hot containers, weight lifting, burners' use).
- It was recommended to change cooking tables, as well as the burners system on order to limit gas consumption and grant higher safety to users.
- It was recommended to develop a simple manual mechanical system to extract the coconut's water. There are some ideas available – like the following:



2. Internal and External Social Projection

- Lack of a better structured social community projection plan from a strategic perspective.
- Insufficient employee involvement in activities organized in favor of the community.



- At the managerial level, a strengthening of awareness of the need of social projection directed towards the company's external actors was achieved. Regarding this aspect, two activities were organized with the community's school and with employees' participation:

- ✓ Conference for parents on food safety and innocuousness
- ✓ Organization of the activity to celebrate Children's Day – all school students participated.

In response, 2004 commencement was dedicated to Vegetales Fresquita.

These activities are to become permanent within the companies' plans.



- Lack of joint work with the Employees Union Association.
- Need to decrease the personnel rotation rate. Lack of standardization for employees' incentives.



- The company and the Employees Union Association will work jointly as to encourage a larger employee involvement in those activities.

- A major achievement was the awareness of the need to strengthen Human Resources Management by identifying improvement opportunities within the internal communication mechanisms, as well as employees' involvement in realizing objectives. Specifically, these are some of the achievements:

- Proposal for a training plan – directed primarily towards supervisors, delivery personnel, and a person from the production area who will be specialized in metrology.
- Establishment of a monthly remuneration to give economic incentives to employees.
- Implementation of group performance indicators by area to encourage healthy competition, team work, and improvement in productivity and efficiency.

- Suppliers' rotation.

- Strengthening of the relationship with suppliers through:
 - Contract definition with most suppliers.
 - Proposal for a training plan for suppliers – to be executed starting 2005. Training has been organized and confirmed with the INA (National Learning Institute), the MAG (Ministry of Agriculture and Cattle) and Hortifruti.

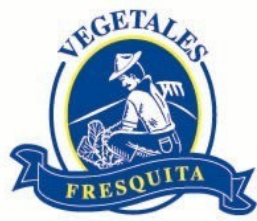
Phrase by Rosalba Méndez

General Manager

" Vegetales Fresquita, in its growing and insertion phase in the national and international market, has demanded day to day of continuous improvement in the different phases from the productive process to other systems within our business.

It has been in this context that CEGESTI's consulting in the frame of Cleaner Production, has played a very important role in detecting problems usually related to this type of industry such as: environmental pollution, water and energy resources, and waste management. The viewpoint of an external expert, in this case CEGESTI, has been vital to become aware of the consequences of these problems, just as well of different options to solve them. Before all, Vegetales Fresquita has taken a more pro-active position in the management of these solutions and their implementing.

Finally, we greatly thank the great help given regarding ideas proposed to present the company to our community and improve a better social relation – especially with the local school."



Ministerie van
Buitenlandse Zaken



Project **"Science and Technology Application to the Strengthening of the Small and Medium Size Agroalimentary Companies ((MIPYMEs) in the Rural Areas of Latin America and the Caribbean"**,
component: Costa Rica. Financed with resources from the OAS's FEMCIDE. Carried out by the CITA
(National Centre for Science and Food Technology – Universidad de Costa Rica)