

Sustainable Development in Central America and the Dominican Republic

Company: TROPIDALI
Country: Panama
Project: TMF Program: Poverty reduction and environmental improvement.
A sustainable development strategy.
Year: 2005

THE COMPANY

TROPICAL DE ALIMENTOS is a company located in Cocle, Panama Republic. It makes fruit pulps and marmalades, and processed vegetables. It started its operations at the proprietor's residence in 1988 – in the middle of political tensions and economic instability in the country. Its first product was coconut milk, an abundant fruit and main ingredient in typical coastal dishes. With current production levels, TROPIDALI produces 8 permanent full time positions.

Its goal is to reach the international market with one or more products, and to be able to export regularly. While this happens, it is seeking to grow locally.

TROPIDALI has a certification from the Health Ministry which states that it complies with good manufacturing practices (GMP), sanitation Standard Operating Procedures (SSOP) and Hazard Analysis and Critical Control Points.

PRODUCTS/SERVICES



The company's main products are: pineapple, passion fruit, and mango pulp, coconut milk, vegetable stew and coconut marmalades. It also makes pulps and marmalades from other fruits in the region.

PROJECT DESCRIPTION

The Project was developed under the Joint Cooperation Agreement CONEP-CEGESTI, within the frame of the "Environmental Management Tool and Entrepreneurial Participation in Cleaner Production" project - carried out by CoNEP and financed by the Inter-American Development Bank; and the "Poverty Reduction and Environmental Improvement: An Integral Sustainable Development Strategy (TMF) – carried out by CEGESTI and financed by the Netherlands' Foreign Affairs Ministry.

SUSTAINABILITY DIAGNOSIS

The sustainability questionnaire is an instrument which shows the management perception on actions the company does in sustainable development topics.

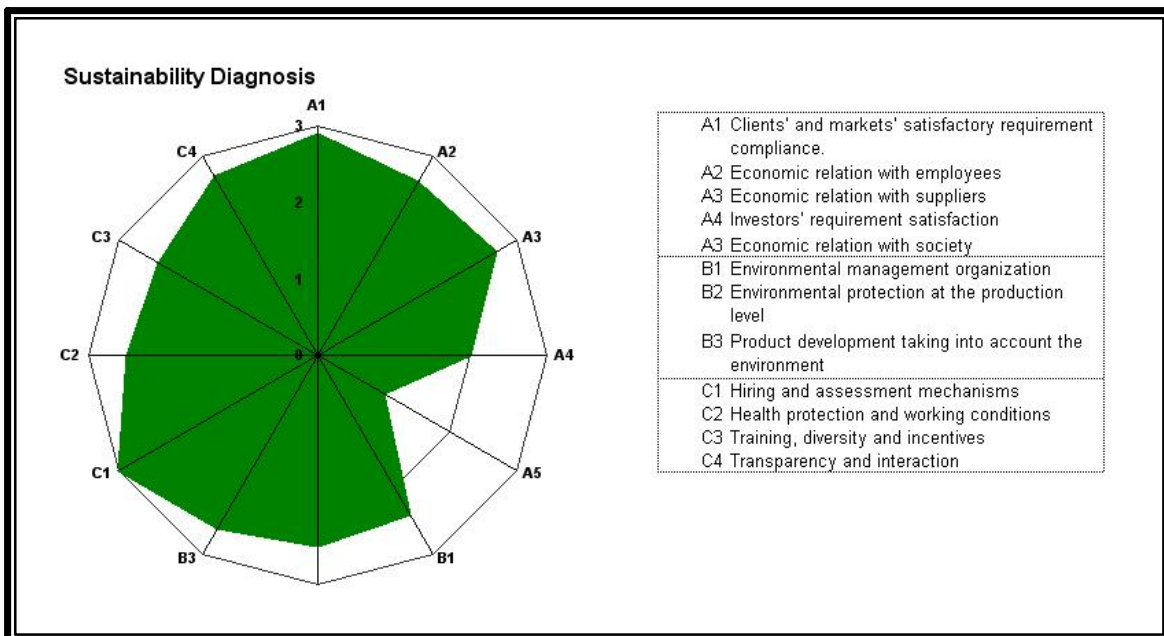
This diagnosis presents in a graphic form, the result of the evaluation of a series of statements in each dimension. The analyzed topics are the following:

- Economic Dimension
 - Clients' and markets' satisfactory requirement compliance.
 - Economic relationship with employees.
 - Economic relationship with suppliers.
 - Investors' satisfactory requirement compliance.
 - Economic relationship with society.

- Environmental Dimension
 - Environmental management organization.
 - Environmental protection at the production level.
 - Product development taking into account the environment.

- Social Dimension
 - Employment and assessment mechanisms.
 - Health protection and working conditions.
 - Training, diversity and incentives.
 - Transparency and interaction.

To do the Sustainability Diagnosis an electronic spreadsheet in Microsoft Excel is used. When applying the diagnosis, it is indispensable that supporting evidence, which supports the evaluation done, is granted. In this case, the result is Mrs. Arietza's perception regarding her business. Results are shown in the following graph.



The graph shows that the topics with the major strengths are those related to market and clients' satisfactory requirement compliance (A1), the economic relationship with suppliers (A3), product development taking into account the environment (B3), and investors' satisfactory requirement compliance (C1). It is important that the company keeps a continuous improvement policy in these topics which are close to a sustainability plan.

The topic which has a higher chance of improvement is the economic relationship with society (A5). The topic requires of a special analysis to determine the routes which will allow an improvement within the organization.

Company's outstanding elements:

In TROPIDALI's initial situation diagnosis, good operation practices were identified. Some of them are: daily production records by product, in which data is recorded for their traceability; pressure pistols in the hoses and water compressor for the cleaning; quality controls established during the process; standardized procedures and production documents by type of product, additives dosage established by product type, among others.


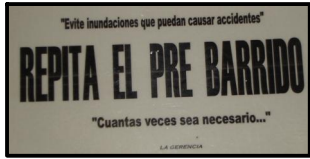
Besides these practices, the company made changes to its water supply installation and its electrical energy infrastructure.

An additional 500-gallon reservoir tank was added to the water supply system, a pump which normalizes supply was installed, and the PVC piping system was replaced for IPS. These measures, as well as other minor modifications resulted in a decrease in water consumption per processed product unit. According to the current production, savings exceed 516 m³ of water per year.



In its electrical infrastructure, the monophasic system was changed for the triphasic one; engines were redimensioned according to the required potency; and an operation schedule for the cold rooms' compressors was assigned. Measures resulted in a saving in the electricity consumption variable component – per unit of processed product, and a diminishment in the energy demand. Quantifying the saving with the current production, the company is saving 12,400 KWH per year, and it reduced the energy demand in 1 KW.


Main attained results with the project:

In TROPIDALI's case, implemented measures at the moment will not result in an immediate economic saving. They are oriented towards the generation of information for the production's control, and health risk decrease. The main aspects, which were worked on at Tropical De Alimentos, S.A., were the following:


Proposed Measures	Attained and expected Benefits
CLEANER PRODUCTION	
Water Consumption and waste water	
<ul style="list-style-type: none"> ▪ Statistical charts were made for water consumption. ▪ It was recommended that during the process, solids left on the floor be picked up to prevent sieves from being saturated. <div style="text-align: center;">  </div> <ul style="list-style-type: none"> ▪ This process was paired up with sample taking and volume measurement to characterize wastewaters and their discharge flow. 	<ul style="list-style-type: none"> ▪ These tables will allow the company to have information to identify problems and make timely decisions. ▪ This measure was taken with the intention of preventing the slipping risk and reducing the wastewaters pollution. <div style="text-align: center;">  </div> <ul style="list-style-type: none"> ▪ The measure was taken with the intention of complying with applicable legislation in the subject of waste waters.

Solid Waste Production	
<ul style="list-style-type: none"> ▪ The record keeping for returned or defaulted products was analyzed as to identify the main causes. ▪ A weight control of the organic residues was implemented in the process. 	<ul style="list-style-type: none"> ▪ Based on this analysis: <ul style="list-style-type: none"> ✓ Problem's origin was identified. From found defects: 19% related to the packing bags supplier, 75% to product handling during distribution or storage by the distributor, and 6% to Tropicdaly's sealing process. ✓ Defaults and returnees' costs were quantified. ▪ This directed the company towards: <ul style="list-style-type: none"> ✓ A revision of the marketing plan to include new products in the market. ✓ Negotiation with the bags supplier seeking improvement in the quality with mutual support, or to its effect the identification of new suppliers. ✓ Revision of the bags handling measure during transport. ✓ Revision of the bags handling by retailers, and according to good practices to preserve the product's quality. ✓ Revision of the company's sealer; and if required the purchase of better equipment. ▪ This procedure will allow the company to: <ul style="list-style-type: none"> ✓ Monitor the quantity of organic waste (bran). ✓ Produce information to achieve projects like compost or to design new projects. <div data-bbox="922 1024 1321 1270" data-label="Image"> </div>

Production control	
<ul style="list-style-type: none"> ▪ Package quality verification – before placing the bags in the cool rooms – was included in the controls. ▪ It was recommended to adjust the scale and the filling equipment before starting the process. ▪ An adjustment is made and the filling equipment is periodically verified during the process. To check the adjustment at least after each batch was recommended. ▪ It was suggested to perform random texts to verify the packages' content weight. 	<ul style="list-style-type: none"> ▪ This measure will enable the loss risk, or product pollution to decrease. ▪ The company will implement this recommendation and with it, it should be able to decrease the losses for delivering bags with weights above the standard. ▪ From January 2004 to May 2005, the company did not received \$3,667.00 in profits due to selling bags with excess weight. These losses can be prevented by changing the technology used to pack. This measure gives the company a parameter to decide between purchasing a filling machine and a more accurate scale, or keeping the current one; and in how long the investment would be recovered. ▪ This measure was taking with the intention of confirming the filling equipment adequate functioning.
Order and cleanness	
<ul style="list-style-type: none"> ▪ The order of placing buckets on the plant's floor was given so that it provides free access. 	<ul style="list-style-type: none"> ▪ This measure was taken with the intention of proving areas of internal free traffic. 
Risk of Product Pollution	
<ul style="list-style-type: none"> ▪ The use of plastic bins with labels of chemical substances (detergents, lubricants, others) was eliminated. ▪ It was decided not to purchase more raw materials which had been stored in bins where chemicals had been stored. 	<ul style="list-style-type: none"> ▪ These two options will eliminate the risk of pollution of the raw materials, or processed product with chemical substances.

Energy consumption	
<ul style="list-style-type: none"> ▪ Statistical charts showing electrical and vehicular fuel consumption were made. ▪ Indicators for each case were established – with the intention of knowing actual consumption per produced unit and to later on verify the efficiency of the suggested measures according to the Cleaner Production Plan. ▪ Measures were suggested to isolate steam pipes, and control the boiler's combustion. 	<ul style="list-style-type: none"> ▪ These charts will enable the company to have information to identify problems and make timely decisions. ▪ The objective is to improve the energy use which will be provided by the new boiler.
Inventories Control	
<ul style="list-style-type: none"> ▪ A chart was designed to monitor the previous demand cycles – so that it becomes the base to estimate future demand. ▪ It was suggested to make sales to knock down slow selling products – at risk of becoming losses. 	<ul style="list-style-type: none"> ▪ These measures will help the company to: <ul style="list-style-type: none"> ✓ Better know the level of production ✓ Decrease the risk of cost of opportunity due to lack of stock. ✓ Reduce the risk of losing finished product. 
Others	
<ul style="list-style-type: none"> ▪ Company machinery was inventoried. ▪ A diagram to help them define check up periods for machinery and installations. It was suggested to use as a reference the equipments' manufacturers' handbooks; or if not available the maintenance technicians' suggestions. ▪ It was suggested to analyze the machinery malfunctioning or breakdown reports – to identify causes and parts reposition periods, and preventive maintenance. 	<ul style="list-style-type: none"> ▪ These measures were taken to reduce the production losses due to equipment or machinery breakdowns, as well as to reduce incidentals due to malfunctions. ▪ Besides, as the starting point for a Preventive Maintenance Program.

HEALTH AND OCCUPATIONAL HEALTH

<ul style="list-style-type: none"> ▪ Information was provided to coordinate with the local fire fighters the making of an emergency plan against fires, and the inspection of the installation of the new boiler. ▪ It was recommended to give personnel an annual training on what to do in case of a fire. ▪ It was recommended to decrease the exposition to noise at the plant through a better adjustment to the floor of the chopping and de-pulping machine; besides giving personnel hearing protection equipment. 	<ul style="list-style-type: none"> ▪ These are measures to reduce risks and disasters in case of fires. <div style="text-align: center;">  </div> <ul style="list-style-type: none"> ▪ This measure is to improve the environment at the plant, and prevent the risk of damages in the workers' hearing.
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PHRASE BY THE ENTREPRENEUR

"We are still incorporating several correctives derived from our action plan; nonetheless, we can pinpoint that since the beginning of the program we have been able to notice the depth of the methodology in regards to documentation, analysis and records of factors in that together they are decisive and important in companies' growth."

Mrs. Arietza Castro
General Manager

