



**Promoting social and environmental
business opportunities
in Central America and Dominican
Republic**

SUCCESS CASE

Enterprise: Tecnoagro S.A.
Country: Nicaragua
Year: 2011



THE ENTERPRISE

The enterprise TECNOLOGIA DE EXPORTACION, S.A. is a private, Nicaraguan enterprise, with family and institutional capital, which is involved with farmers to promote the export of agricultural products with opportunities in foreign markets.

Their main products are roots and root vegetables (cassava, taro, malanga lila, ginger), grains and seeds (beans, calabash seeds) and flours (cassava flour and malanga flour). It has four processing plants located in León, Nueva Guinea, Jinotega and Matagalpa, where their main activities are the collection, processing and export of the previously mentioned products.

DESCRIPTION OF THE PROJECT

Through the Oikocredit – ICCO – CEGESTI partnership, SME's in Central America and Dominican Republic have access to credit and technical assistance with the purpose of promoting social and environmental business opportunities, through the access to innovative financial resources and technical assistance.

The SCHOKLAND-SME CA&DR Fund provides these funds through the Netherlands Ministry of Foreign Affairs.



MAIN OUTCOMES

Strategic Framework

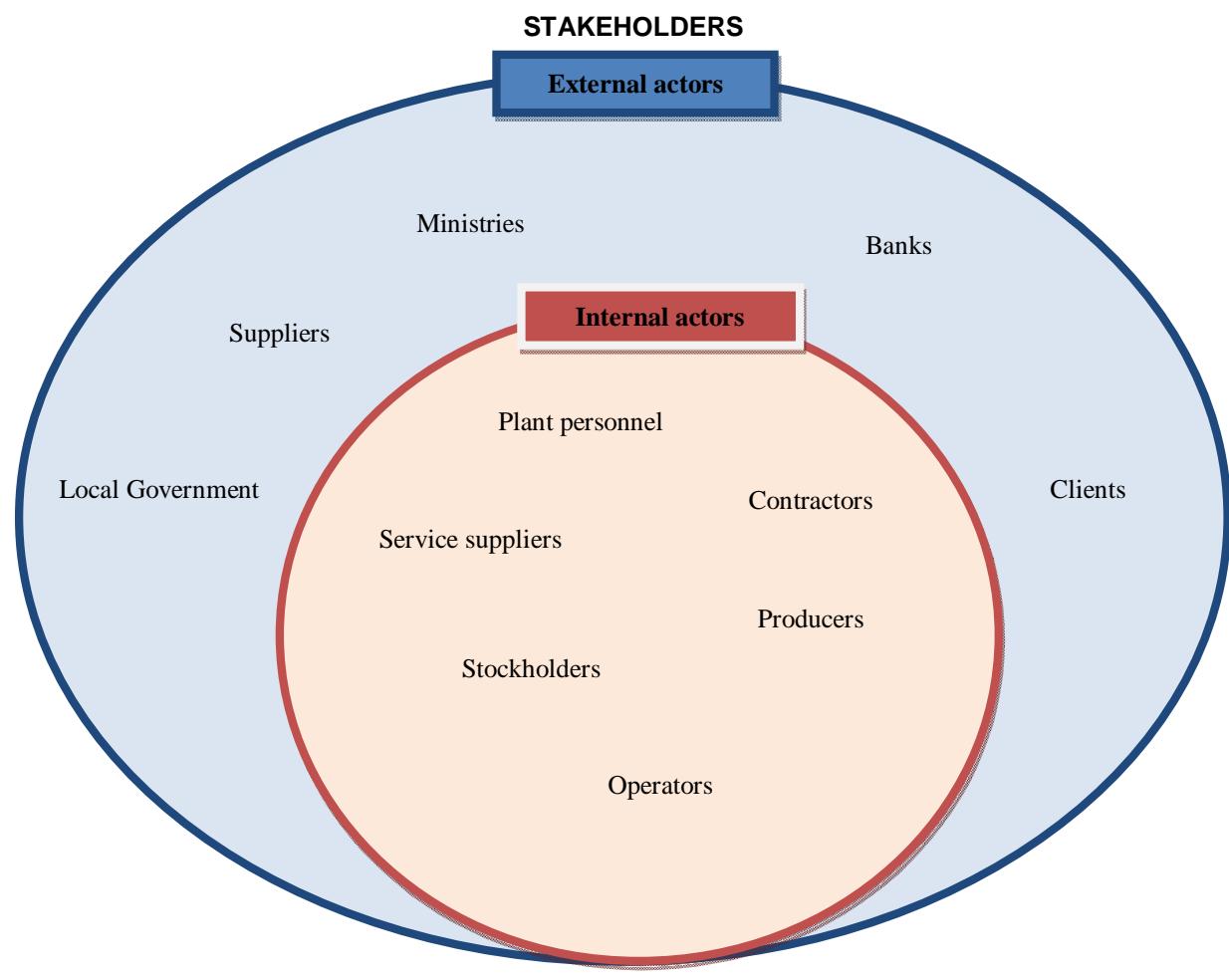
New approaches were defined within the organization's strategic framework, aimed at the concept of sustainability:

MISSION

"To promote the Nicaraguan agribusiness of small, medium and large producers, integrating them as strategic partners to promote the agro-export of roots, root vegetables, grains and nostalgic products in a sustainable and socially responsible manner, complying with the expectations of the international market"

VISION

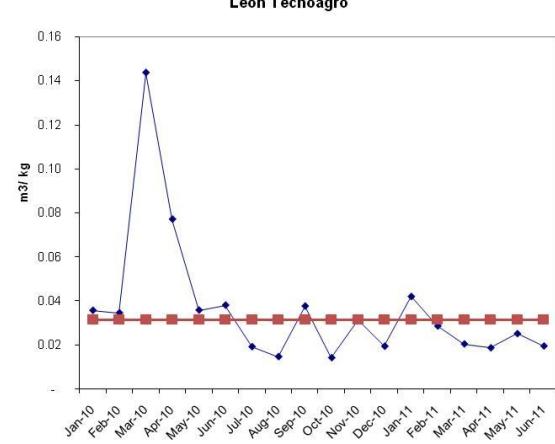
"To be leaders in the export of Nicaraguan agricultural products, competitive and recognized both locally and internationally for our quality and socially responsible and environmentally-friendly actions"



ENVIRONMENTAL DIMENSION

To obtain greater efficiency in the use of the organization's resources, different actions were taken to strengthen the area of production and in the offices.

Several workshops were carried out with the purpose of identifying problems and their causes in each process area. As to the implementation of measures, priority was given to those aspects that could be solved with the available resources.

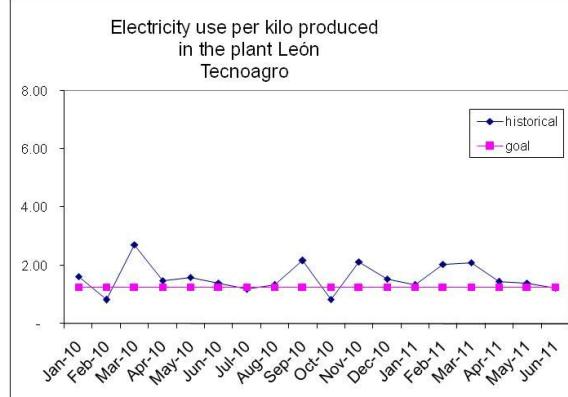
Initial Diagnosis	Achieved Improvements																																						
WATER CONSUMPTION <p>During the first visits, we observed that the drinking water was not adequately channelized and the piping had many leaks.</p> 	<p>Washbasins were installed to provide the workers with drinking water, and faucets were placed in strategic spots for more access to water.</p> 																																						
<p>The enterprise lacked a plan to encourage water saving.</p> <p>In addition, some people had the bad habit of using water for tasks such as washing wastes away using water pressure instead of using a broom.</p>	<p style="text-align: center;">Water consumption in the plant León Tecnoagro</p>  <table border="1"> <caption>Data points estimated from the graph</caption> <thead> <tr> <th>Month</th> <th>Water Consumption (m³/kg)</th> </tr> </thead> <tbody> <tr><td>Jan-10</td><td>0.035</td></tr> <tr><td>Feb-10</td><td>0.035</td></tr> <tr><td>Mar-10</td><td>0.145</td></tr> <tr><td>Apr-10</td><td>0.075</td></tr> <tr><td>May-10</td><td>0.035</td></tr> <tr><td>Jun-10</td><td>0.035</td></tr> <tr><td>Jul-10</td><td>0.025</td></tr> <tr><td>Aug-10</td><td>0.015</td></tr> <tr><td>Sep-10</td><td>0.035</td></tr> <tr><td>Oct-10</td><td>0.015</td></tr> <tr><td>Nov-10</td><td>0.035</td></tr> <tr><td>Dec-10</td><td>0.015</td></tr> <tr><td>Jan-11</td><td>0.045</td></tr> <tr><td>Feb-11</td><td>0.035</td></tr> <tr><td>Mar-11</td><td>0.025</td></tr> <tr><td>Apr-11</td><td>0.025</td></tr> <tr><td>May-11</td><td>0.035</td></tr> <tr><td>Jun-11</td><td>0.025</td></tr> </tbody> </table> <p>Measures were taken to raise awareness on the rational use of water; furthermore, all leaks were controlled. Water consumption was stabilized.</p> <p>A new water pump was acquired for using well water, and a consumption record will be kept to monitor the amount of water used.</p>	Month	Water Consumption (m³/kg)	Jan-10	0.035	Feb-10	0.035	Mar-10	0.145	Apr-10	0.075	May-10	0.035	Jun-10	0.035	Jul-10	0.025	Aug-10	0.015	Sep-10	0.035	Oct-10	0.015	Nov-10	0.035	Dec-10	0.015	Jan-11	0.045	Feb-11	0.035	Mar-11	0.025	Apr-11	0.025	May-11	0.035	Jun-11	0.025
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ELECTRICITY CONSUMPTION

In every industrial process, energy consumption is one of the critical issues. In Tecnoagro's case, one of the critical issues regarding energy consumption is the maintenance of the cold storage rooms.

The cold room gaskets were in poor condition and sometimes the door would remain open for several minutes, allowing the cool air to escape and an increase in consumption.

The enterprise lacked an energy savings plan, and there was no consumption record in the plant.



The consumption of electricity in June reached the established reduction goal, in keeping with consumptions during 2010.

SEWAGE

The largest amount of sewage in the plant comes from the washing process; therefore, its degree of contamination is very low. This water was not controlled; it passed to a pit and then poured into a river.



The enterprise was unable to estimate the volume of sewage produced; no measure is kept regarding this aspect and it has not been determined how to monitor this volume with the available resources.



The pit was cleaned and the bottom was checked to consider the possibility of adapting it as a real trap for sediments or sedimentation tank to be used as primary wastewater treatment.

ORGANIC SOLID WASTE

The process does not generate a large amount of organic waste; a significant amount of discarded produce is processed to obtain cassava flour for animal consumption. Nevertheless, certain parts are discarded and need to be disposed of properly.

A campaign was carried out to clean up and collect all of the organic waste stacked in different sectors of the enterprise.



INORGANIC SOLID WASTE

The enterprise lacked an adequate inorganic solid waste management for the implementation of a separation, reutilization and recycling program.

A large amount of plastic boxes in bad condition were generated and there was no way to send them to be recycled. The same happened with the black plastics used for drying fruits and vegetables.



Inadequate storage brought about a waste problem with the packing material, causing the material to become moist.



An effort was made to improve the management of waste in general. Barrels were placed for selective collection in different places around the plant. An induction for the employees on this topic is still pending.

Most plastic boxes and plastic residues were collected, separated and sent for recycling.

A place was arranged in the Casona storeroom to store the plastics that are discarded and sent for recycling in an orderly manner.

Packing materials were stored more adequately to prevent their deterioration and generating more waste, particularly the cardboard.



SOCIAL DIMENSION

The organization worked on improving aspects related to the working conditions of its employees, and in strengthening the enterprise's presence in the local community.

Initial Diagnosis	Achieved Improvements
COMFORT IN THE WORKPLACE	
<p>A serious problem in the plant is the lack of ideal work spaces, and unfortunately, there is no short-term physical solution due to the lack of available resources to expand the plant. For this reason, order plays a fundamental role in workspace comfort for the process.</p> <p>There is no place for employees to keep their belongings.</p> 	<p>Part of the enterprise's short-term projects takes into account the expansion of some sections in the plant and investment in equipment that will enable improvements in the working conditions. At the moment, it was impossible to visualize results due to a delay in the remittance of the credit.</p> <p>The construction of an area for lockers is in progress, for the employees to keep their belongings there, next to the restrooms.</p> 
<p>Some workspaces lack proper ergonomics, which can generate backache and pain in other body parts.</p> 	<p>Improvements were not made in the ergonomics area; however, a more clearly defined area was arranged for root-washing chores.</p> 
OCCUPATIONAL HEALTH AND SAFETY	
<p>There was no Hazard identification in the plant, a latent necessity due to infrastructure conditions.</p> <p>There were potential dangers near the wax coating area, particularly obstacles and disorder,</p>	<p>Hazard identification was performed, and the first step was to implement improvements to control these hazards. Signs were placed around the entire plant indicating the emergency exit routes, safe zones and prohibitions to prevent dangerous situations.</p>

plus the fact that the workers did not use the adequate PPE for hot work.



The stairs were placed incorrectly, loose and lacked a handrail, which represented a danger.



The machinery did not have pulley covers, which was a risk for the workers.



Absence of an emergency plan. The main causes of a potential emergency had not been determined, nor any reaction plans for measures before, during and after emergencies.

The storerooms were occupied with large amounts of disused materials that were piled up and disorganized. This obstructed the way and was a

The area was cleaned and put in order to reduce the risk of potential falls near hot surfaces.



A handrail was installed and non-slip tape was placed on the stairs; in addition, the stairs were fixed to the wall's structure.



A pulley cover was placed on the cassava washing machine to ensure the safety of those working next to it.



An emergency plan was designed, the causes were identified and reaction scenarios were proposed.

source of vectors such as rats.



Some areas lacked healthy conditions for the workers, who sometimes complained about having to pass the workday in the middle of muddy water from the washing process.



The main causes of contingencies in the plant had not been identified. These were determined in the workshops, in which events such as earthquakes and fires were identified as the main events that can affect the plant.

Absence of safety and emergency signs.

The plant improved in cleanliness and order, which contributes to preventing the risk of trip and fall accidents. After working on cleaning the plant, the organization in the discarded materials storeroom also improved.



The area was put in order and the old washing sinks were eliminated. The enterprise is in the process of acquiring new and more adequate ones.



Improvements were made, such as not placing materials ready to be used for packing the cassava directly on the floor. These materials were better organized as well.

Signs were posted with instructions for contingencies.



	<p>A sign was made for the entrance to the chemical products storeroom including the restrictions and a fire extinguisher was placed next to the entrance. The facilities still need certain improvements, such as placing an eyecup and a washbasin nearby.</p> 
COMMUNITY OUTREACH	
<p>Tecnoagro is aware of its role in the development of the local communities which are mainly rural or urban marginal zones, where unemployment is a daily problem; however, there was no education or training culture for the surrounding communities or their employees.</p> <p>The topic of environmental awareness was scarcely developed in the zone when the project started; therefore, there was a need to begin at least with the plant collaborators, who can apply what they learn in their cases and in their daily tasks.</p>	<p>Awareness-building activities were carried out with the plant employees.</p> 
	<p>A cleaning campaign was organized to improve working conditions in the plant.</p> 

EMPLOYMENT GENERATION

While the consultancy was being carried out, the levels of employment were maintained in the plant; in addition, a policy is being developed with the purpose of providing more stability to temporary employees. The enterprise's Internal Work Regulations were developed and are currently expecting the approval of the Ministry of Work.

CORPORATE GOVERNANCE

Initially, the enterprise did not have a Corporate Governance policy. It only had the articles of incorporation.

A Corporate Governance Code was developed based on international principles, which is in the process of being approved by the enterprise's Board of Directors for future implementation.

REMARKS BY THE ENTREPRENEUR

"In our enterprise, the phrase 'Corporate Social Responsibility' was unknown until two years ago; however, after receiving the technical assistance and training provided by CEGESTI through its consultants and technicians who worked with us for almost one year, this phrase started making sense to all of the directors and employees in the enterprise.

At present, all of our activities are performed with social awareness and with a responsible attitude towards the environment; today, we think green, we have changed our way of seeing the environment and have acquired social consciousness; we have learned to take care of our workers, providing them social benefits, safety and protection in their working areas.

The assistance received proved effective and is changing our conscience; the advisement has taught us to work in an orderly fashion in day-to-day procedures; we have learned to implement and keep measurement indicators that will assist us in controlling our expenses in a better way, and therefore, savings that benefit the enterprise's profitability.

The entrepreneurial vision and corporate governance have brought new strength to the management, which is leading us to work on a continuous improvement plan that will benefit the enterprise's mission in the coming years, for the wellbeing of Partners, workers and the environment".

Diego Vargas Belli
General Manager
Tecnoagro S.A.



Ministerio de Relaciones Exteriores
del Gobierno de los Países Bajos

