

## 5. Guatemala: Study on Past Investments

### I. Background

In 1996, Guatemala saw the arrival of a peace settlement that brought an end to a 36-year civil war. In late 1998, the destruction wreaked by Hurricane Mitch had a profound effect on Guatemala and its Central American neighbours' economies.

Guatemala's monetary policy for 1999 was overshadowed by three general aims: renew confidence in the currency, reduce the deficit and strengthen the country's financial system. The crisis in the banking system has contributed to the lingering financial problems in the coffee industry, compounded by the effects of Hurricane Mitch. A squeeze in private sector credits, weak exports performance, a rise in inflation rates and continued currency instability was partly to blame for this.

Business confidence dampened in 1999. The restriction in credit to the private sector has had a significant effect on the private sector growth. During 1999, commercial banks were reluctant to make loans.

The slow-down in the economy has been attributed to Hurricane Mitch, despite the rise in government investment relating to the peace process and emergency relief. Economic growth in 2000, which is expected to remain at 3.5%, will be dependent on coffee and sugar prices and export earnings. World prices are not expected to recover during 2000. Latest estimates for 2001 are that the GDP is expected to grow by 4.0%. It is anticipated that export earnings will increase and the high level of public spending will continue.

Guatemala is among the world's leading sugar producers and is dependent on its export earnings. The recent decline in world prices and Hurricane Mitch sent shock waves through the national economy. The Government is likely to take an aggressive stand to promote their sugar in foreign markets.

Sugar mills have been undergoing modernisation, which usually has occurred at the same time as installation of electricity co-generation. Plantation crops of sugarcane and coffee receive ongoing investment. Increasingly, this has involved technology transfer regarding harvest handling, cold storage, cold shipping and packaging. Investment opportunities include agricultural inputs and technology for crop handling in fields.

Guatemala is the fifth largest exporter of coffee in the world and the largest in Central America. Between October 1998 – September 1999, Guatemala's coffee crop has reached 5.4 million quintals (45-kg bags), exceeding earlier expectations. However the depression of world coffee prices and damage from Hurricane Mitch is expected to dampen growth outlook.

Despite difficulties from adverse weather, the Asociacion Nacional de Café (National Coffee Growers Association) aims to double national output over the next six years by stimulating domestic consumption

and developing new markets in Europe and China. Guatemala’s coffee producers are increasingly aiming to produce at the high-quality (arabica beans) end of the market.

## II. Overview of projects

The Guatemala Cleaner Production Centre examined 20 enterprises for this study. The companies cover a spread of three sectors, including four different industries listed under the sector described as ‘Other’. Listed below is a breakdown of respondents.

<b>Respondents According to sector</b>	
<b>Sector</b>	<b>Respondents</b>
Sugar	7
Manufacturing	4
Other	9
<b>Total</b>	<b>20</b>

### *Project venture*

The projects are categorised according to three types of ventures. These are:

- New construction sites (greenfield or brownfield)
- Plant expansions
- Retrofits.

Of the 20 projects evaluated, 14 projects were identified as retrofit projects, three were new construction projects and three were plant expansions. With the exception of projects in the sugar sector, all projects refer to small and medium enterprises.

The reason a predominance of retrofits lies in the fact that retrofit project are a low cost, quick way of increasing efficiency the processes and upgrading to the available technology. Additionally, retrofits allows changes in small step which more acceptable to the company staff and management. Naturally, a complete revamp of industry appears less likely to occur, especially due to the conspicuous financial burden involved.

### *Environmental characteristics*

Environmental characteristics of the projects fall into three groups. They include:

- Cleaner production
- End-of-pipe
- Other general industrial projects.

Listed below is a break down of the environmental characteristics according to sector.

<b>Environmental characteristics according to sector</b>				
	<b>CP</b>	<b>End-of-pipe</b>	<b>General industries</b>	<b>Combination CP/EoP</b>
Sugar	-	-	-	7
Manufacturing	2	2	-	-
Other	3	4	-	2
<b>No. of projects</b>	<b>9</b>	<b>3</b>	-	<b>8</b>

*Project Description (including economic, environmental and social considerations)*

*Sugar*

<b>Overview</b>	
<b>Number of enterprises</b>	7
<b>Project description*</b>	<ul style="list-style-type: none"> <li>• Waste recovery and reuse techniques</li> <li>• Gaseous emissions and effluents reduction measures</li> <li>• Renewable energy</li> </ul>
<b>Known drivers for change#</b>	<ul style="list-style-type: none"> <li>• Production efficiency (i.e. cost savings)</li> <li>• Pollution abatement</li> </ul>

\* Companies can have more than one project carried out simultaneously, many of which are inter-related.

# Drivers for change are not listed in order of priority.

The study assessed the activities of seven of the top sugar producers in the country. Production in each of the companies, which includes both raw and refined sugar, ranges from 600 up to 2,930 thousand MT/year. A majority of the sugar output is produced for export markets. All companies are members of the Guatemala Sugar Cane Producers Association (ASAZGUA).

All seven companies focused on three key areas of activity:

- Reduction of gaseous emissions
- Use of filter cake as organic fertiliser
- Electric generation through sugar cane bagasse.

All seven companies generate their own electricity through the use of sugar cane bagasse. The bagasse is also used as a main ingredient of organic fertiliser. Bagasse, also called filter cake, contains potassium and sodium to help enrich soil. This is mixed with fly ash, which is recovered from chimney filters, to produce fertiliser.

Six companies use a water recycling system, which extracts redundant water from production processes and later uses it for irrigation in the fields. Two of the companies also adopted systems of recovering sugar cane from the washing tables to reduce river pollutants.

All seven companies considered the environmental and human health effects of their operations to nearby towns and cities, which ranged from 35,000 to 480,000 people. Social considerations also focused on the employees. Protective gear is provided, along with special food supplements and medical care.

Alternative designs were considered by all of the companies. Final decisions were based on the following:

- Size of initial investment
- Rate of return
- Level and sophistication of technology
- Expected results.

### *Manufacturing*

<b>Overview</b>	
<b>Number of enterprises</b>	4
<b>Project description*</b>	<ul style="list-style-type: none"> <li>• Waste recovery and reuse techniques</li> <li>• Renewable energy</li> <li>• Water treatment plant</li> <li>• Emissions reduction measures</li> </ul>
<b>Known drivers for change#</b>	<ul style="list-style-type: none"> <li>• Production efficiency (i.e. cost savings)</li> <li>• Intervention by the National Environmental Commission</li> <li>• Pollution abatement</li> </ul>

\* Companies can have more than one project carried out simultaneously, many of which are inter-related.

# Drivers for change are not listed in order of priority.

Four companies make up the manufacturing sector. The companies produce the following products:

- Coffee machinery
- Fertiliser
- Rubber
- Chemical Spray.

A coffee machinery producer researched and designed a new pulp remover, which uses no water and replaced toxic copper parts with aluminium parts. The new design allows the users (coffee producers) to

enhance their environmental performance by reducing water and energy consumption, as well as generation of effluents. The machinery is also lighter and, therefore, cheaper to transport.

This project stands as a case where the benefits associated to cleaner production are translated forward to the customers. It further shows the importance of analysing a cleaner production option with the life cycle approach.

A fertiliser company identified wastewater effluent and energy consumption as an area of concern. They took steps to recycle waste solids and to generate energy from photovoltaic cells, as regular, uninterrupted service is not available in the area. No alternative designs or social considerations were considered.

On the orders of the National Environmental Commission (CONAMA), a rubber producer reduced its effluents, which had previously been contaminating local water systems. As a consequence, the company installed a wastewater treatment plant, which includes the use of lagoons (or sedimentation ponds). The company had no prior experience and no alternative designs were considered.

A chemical spray company was the first in Guatemala to adopt the principles of UN's Montreal Protocol, which seeks to eliminate the use of CFC's in manufacturing processes. The company has replaced CFC's with Freon 11-12. Alternative designs were considered, such as the use of CO<sub>2</sub> and LPG, but they were considered too expensive. The company has also adopted the principles of ISO 9000 and is due to begin certification towards ISO 14001.

### *Other*

<b>Overview</b>	
<b>Number of enterprises</b>	9
<b>Project description*</b>	<ul style="list-style-type: none"> <li>• Waste recovery and reuse techniques</li> <li>• Renewable energy</li> <li>• Emissions and effluent reduction measures</li> </ul>
<b>Known drivers for change#</b>	<ul style="list-style-type: none"> <li>• Production efficiency (i.e. cost savings)</li> <li>• Pollution abatement</li> </ul>

\* Companies can have more than one project carried out simultaneously, many of which are inter-related.

# Drivers for change are not listed in order of priority.

The sector 'Other' is made up of nine companies, which include the following industries:

- Eco-tourism & Services (2)
- Agriculture (2)
- Tannery (2)
- Food processing & Beverages (3).

## *Eco-tourism & Services*

The eco-tourism and service sector includes a hotel and resort company and an environmental recycling company. The hotel and resort company provides meetings, seminars and conferences relating to sustainable development, such as renewable energy, recycling, sustainable agriculture, forestry, aquaculture and pollution abatement. The company also practices what it preaches – CP measures have been implemented throughout the resort. These include:

- Electric generation using photovoltaic cells
- Use of recycled products rather than disposable articles
- Use of environmentally friendly cleaning products
- Forestry conservation programme to prevent soil erosion.

These measures were adopted with the help and advice of the Guatemala Cleaner Production Centre.

An environmental services company collects, processes and commercialises from oil and petroleum recovery. The aim of the company is to reduce water and soil pollution in ports, gas stations and construction sites.

## *Agriculture*

Two agricultural companies produce coffee and African palm trees.

A company, which grows African palm trees, recently seeded 5,000 hectares of land. They plan to construct an extraction mill to produce palm oil with a capacity of 250 MT/day. If the project goes ahead, the plans include the adoption of anaerobic digestors and facultative ponds for treating liquid effluent. The company also plans to recover solid waste for electric generation.

A coffee grower adopted organic farming techniques. As well as eliminating the use of pesticides, the company also uses a closed water system for coffee production and dries the beans by sunlight rather than use electrical driers.

## *Tanneries*

Two tannery companies identified untreated wastewater as a problem. One company adopted a system by which the solids are separated from the liquid and later disposed of.

The other company gathered its solid waste (2 MT/month). The waste was then decomposed and later mixed with coffee pulp to produce feed for farmed-earthworms. The earthworms are raised to help produce humus (or compost) to use in fertiliser, which is then sold commercially. Alternative designs were considered but deemed to be too expensive.

## ***Food processing & Beverages***

Three companies in the 'Food processing & Beverages' sector produce candy, beer and liquor.

A candy company was a participant of the Eco-design Programme as part of the Chamber of Industry activities. Measures that were adopted include use of non-toxic inks for packaging and reduction of candy plastic wrap and packing bags.

A beer company started considering CP and end-of-pipe options in the early 1990's. Measures they adopted include:

- Reductions of water consumption through the implementation of a closed water cleaning system
- Retention of 90% of fly ash from chimneys
- Recycling of glass, carton and plastic packaging.

No detailed information was provided about the company that produces liquor.

### **III. Type of financing**

The companies assessed in this study were reluctant to disclose detailed information, which has made it difficult to provide in-depth financial analysis.

Of the 20 projects examined, 15 projects were funded from internal resources. One of the companies also received technical assistance from a local university.

In terms of size of investment, the seven sugar companies implemented projects that totalled \$3,856,041. All the projects were financed from internal resources.

The eco-tourism company invested \$7,105,784 in a conference centre and CP measures. Corporacion Financiera Ambiental(CFA) provided venture capital at a rate of 6-7%. CFA also provided venture capital to the environmental services company at a rate of 6-7% for 5 years.

The agricultural company that grows African palms is seeking finance from two banks, Banco Europeo de Inversiones and Belgium's Fortis Bank. If the loans are approved, the company will receive funding at a rate of 7.6% and 11.6%, respectively.

### **IV. Conclusions**

The study reveals that commercial banks in Guatemala do not show a preference for financing environmentally related projects as yet. This also explains why the financing of such projects occur under

the same loan terms as any other investment. It has also to be noted that local commercial banks' loans have been accessible to borrowers over the last two years and that the funds now available show very high interest rates.

Some international financial institutions have preferential funds dedicated to the projects at issue, e.g. *via* capital risk or special credit lines that can be accessed through commercial banks, although, these banks are not yet actively promoting these dedicated funds.

Generally, it was reported that banks in the due diligence process consider mainly the financial aspect of a loan application, without paying too much heed to the technical ones.

No special governmental financial mechanism or subsidy to promote investment in cleaner production exists. Technical support is given in the form of training to business, via appropriate bodies such as the *Instituto Nacional de Capacitation* (National Training Institute). In addition to that, sector specific institutions, e.g. the Chamber of Industry, Chamber of Commerce, Managers Association, as well as private organisation and university provide training to entrepreneurs.

It was noted a certain reluctance on the part of banks and financial institutions in providing internal information to contribute to the study. The same attitude was observed amongst entrepreneurs who normally do not like to give away information that they regard as "private".

The study highlighted that the number of cleaner production projects in the country is still very little. Often projects developed on an environmental basis are intended to achieve compliance with the environmental legislation, whilst only a few of them were conceived as a result of a convinced decision by the investors. It is worth noting however, that most entrepreneurs would be willing to either maintain or even increase the level of investment in cleaner production or environment, if the financial terms would be more advantageous. Businessmen are aware that the current not favourable financial conditions are also affected by factors which are external to the banking system. Nevertheless, there is a belief among the business community that the banking sector could do more to improve their financial conditions.