

THE BANANA SECTOR IN ECUADOR

Introduction

Important changes in economic policy took place in Ecuador in the 1980s and 1990s that aimed to integrate the country into the international trade regime.

In the 1980s, the average contribution of the banana export sector to total exports was 9.38 per cent, and bananas accounted for 38.6 per cent of all agricultural exports. Banana exports comprise a large proportion of all exports from the country, and thus generate a significant amount of hard foreign currency. During the 1990s, banana exports comprised 21.1 per cent of total exports and 64.7 per cent of all agricultural exports, a notable growth in banana producing activity during the last decade.

In terms of international trade policy, the export of bananas has been a major source of trade disputes within the WTO. In social terms, the banana sector has become one of the most important production activities in the Ecuador. Bananas production is labour intensive, thus generating a wide range of employment. By 1998, the number of proprietors of banana plantations registered at the National Banana Programme (PNB) was 4,941. According to labour productivity and cultivated land statistics, there are around 98,000 workers that are directly involved with banana plantations.

The general objective of this study is to evaluate the social, economic and environmental impacts (both positive and negative) of the adoption of specific policies of structural adjustment and international commerce during the 1980s and 1990s, on the banana producing activity of Ecuador. Structural adjustment and trade liberalization policies were implemented in Ecuador in the 1980s to promote economic development. The underlying rationale behind trade liberalization was to promote exports. In this regard, several of the policies implemented during the two decades being examined are reflected in domestic trade policies that have affected banana industry activities.

Both domestic trade policies and multilateral trade agreements have had an impact on Ecuador's banana industry in terms of production, cultivated land area and yields, as well as in terms of use of natural resources and labour, *inter alia*.

The study also examines the effects of the European Union's regime on the commercialization of bananas on Ecuador's banana sector. The following indicators were used for this analysis:

Economic indicators:

- Production: increase in banana production; total banana production per hectare.
- Technology use: technological investment by the banana companies.

Environmental indicators:

- Volume of imports of agrochemical products applied in banana production, particularly fungicides.

Social indicators:

- Minimum salaries/income established for banana plantation workers.
- Social and economic indicators: demography, housing, health and education of the principal banana districts of Ecuador.

Effects of structural adjustment and trade policies in Ecuador

In the case of the banana producing activity of Ecuador, the ‘transition model towards structural reform’ and the applied policies have had different economic, social, and environmental impacts.

SAPs in the 1980s

SAP policies had a visible effect in the technological development of the banana production sector, which is evident in the raised technological level of this sector, and in the introduction of new and more productive varieties of bananas during the latter part of the 1980s. This obviously affected the production costs of the banana industry.

The policy of fixing a minimum referential price for bananas in 1980 was among the measures specifically directed to regulate banana production activity. This policy established an export price for bananas that worked as base for estimating a ‘minimum support price’, which is the price that each Ecuadorian producer should receive. Although price fixing and referential pricing are policies contrary to the free action of market forces, this measure is indispensable due to the monopolistic nature and social importance of the banana industry in Ecuador.

On the other hand, in terms of its effects, the policy of price fixing generates a greater capacity to anticipate the levels of investment, working capital and technology for the banana producers.

Although these measures aimed to promote all exports, they had an important effect on the increase of production and the technological development of the banana industry in Ecuador. Consequently, the costs of production in the banana industry were reduced.

SAP policies in the early 1990s

Among the SAP policies that had the greatest impact on banana production, monetary and fiscal policies are the most important. Starting in 1993, a sharp decline was registered in exports of banana, and furthermore there was a decrease in the price of Ecuadorian bananas in the international markets.

Among the SAP initiatives, the following deserve mention: (i) the policy of minimal price support for banana producers in 1992; (ii) the creation of agreements to exempt banana exporters from certain financial compromises acquired with the *Programa Nacional del Banano* (National Banana Programme); (iii) the issuing of the *Reglamento de Saneamiento Ambiental Bananero* (Environmental Management Bylaws for the Banana Sector); and, (iv) the issue of Decree 2294 of 1994 that prohibits the cultivation of new areas of banana.¹ The environmental management bylaws for the banana sector were meant not only to regulate the process of production of bananas, but also to introduce environmental preservation as a determining factor.

All these policies had a two pronged effect. On the one hand, the adopted instruments reduced the costs of imported inputs and increased the levels of technology in the production of bananas, on the other they reduced certain administrative restrictions for the exports of bananas.

Parallel to the adoption of these instruments, several other initiatives were generated to increase the exports of Ecuadorian bananas and to improve its access to international markets.

Period of “economic inconsistencies in economic policy and commercial opening” (1995 - 1999)

Even though the banana producing activity in Ecuador has been influenced by the application of policies of structural adjustment, because bananas are mainly an export product, behaviour of the sector also responded on many occasions to the application of national and multinational trade policies. A particular event that strengthened the policies of liberalization in Ecuador and that influenced the commercial prospects for the Ecuadorian banana, was Ecuador’s entrance to the World Trade Organization (WTO) in 1995.

Effects of international trade policies and the national regulatory framework

Effects of multilateral trade rules on production and trade

The commercial development of the banana sector, as is the case with other agricultural products, has been directly influenced by the multilateral trade rules set by the WTO, and by commercial policies adopted by the main export markets of Ecuador. It was the entrance of Ecuador into the WTO that gave the country access to judicial mechanisms that could confront the restrictive measures of the European Union to the import of bananas from Latin America.

¹ Those regulatory instruments were created with the objective to control environmental impacts caused by the use of agrochemicals and the expansion of the agricultural frontier.

The multilateral trade rules established by the WTO have had important effects on the production and trade of bananas in Ecuador. Such agreements have generated changes in the normative structure of the governmental institutions. For example, the Environmental Security Law for Bananas was passed in 1994 with the goal of establishing certain parameters for banana production and the use of agrochemical products.

In addition to those instruments, the commercial disputes over bananas from Ecuador reveal how the agreements of the WTO have allowed the country to access mechanisms to stimulate the entrance of bananas from Ecuador into European markets.

Bilateral trade agreements and their effects on the banana sector

Ecuador's banana sector has also been influenced by certain bilateral trade agreements. In 1994, Ecuador signed a trade agreement (*Acuerdo de Complementación Económica*) with Argentina, through which plantain, cavendish, dried and fresh bananas from Ecuador could access this market with a customs exemption of 90 per cent. The implementation of multilateral and bilateral trade policies have had positive effects on export volumes, prices paid to producers and prices paid to exporters of Ecuadorian bananas.

National and institutional regulatory framework of the banana sector

Banana production activity has always had a strong social component. Moreover, the Government dictated a policy through which it obligated trading companies to purchase bananas from local producers in the same quantity as those they exported from their own production. This action marked a policy of state intervention and promoted the development of small to medium sized banana plantations.

In 1955, the National Association of Banana Producers was created to deal with issues relating to the cultivation and production of banana, for both local consumption and for export. The Association was to guide and resolve conflicts among producers, exporters and foreign companies dedicated to banana activity.

The most significant change in government policy towards the banana sector occurred in 1970 with the creation of the National Banana Programme (PNB). Its main objective was to regulate all matters related to the production and commercialization of bananas.

Analysis of institutional policies directed towards production and the determination of internal prices

In the 1980s, the banana sector continued to be ruled by the PNB, which operated under the authority of the Ministry of Agriculture. This programme dictated important policies for the banana sector, such as the reference price fixation for the producer, and the minimal reference price for the withholding of hard currency by the Central Bank to the exporters. In addition, the PNB continued to provide technical assistance to banana producers without discrimination regarding the surface area planted, and to provide services of automation to all producers registered in the programme. As mentioned, in

1980 the Government intervened in the market, fixing the minimal reference price for the commercialization of bananas at a national level, which is the price paid to the local producer. The regulation of the production of bananas brings along a responsibility to look after the application of fair income distribution policies.

Parallel to the application of these policies, specific measures for the banana producing sector were adopted. In 1997, the categories PREMIUM and EXTRA were established for first-class bananas for the export market, and minimum referential prices were set for those products. During the same year, the Law to Stimulate and Control the Production and Commercialization of Bananas is promulgated. Another important regulation in terms of effects on the production process of bananas was the promulgation of the Regulations of Vegetable Sanitation in 1998, which establishes certain parameters and applicable norms for the production of bananas.

In terms of internal policy, in 1999, with the disappearance of the National Banana Programme, the Banana Consultative Council (Consejo Consultivo del Banano) is formed. The Council's principal work is focused on the discussion of policies for the promotion of the banana producing sector. In conclusion, the policies implemented in the 1990s were measures that focused on the incorporation of technology, the increase of production, and the modernization of the banana sector. Furthermore, starting in 1995, the prices for the producer declines, which coincides with the increase of exports, reflecting an increase in production.

Environmental effects of banana production and trade

The adoption of an economic model based on economic openness and implementation of trade liberalization policies has changed the production patterns of agriculture in Ecuador. In the case of Ecuador's banana sector, the single crop system causes environmental consequences associated with the three banana production stages, which are: (i) the establishment of plantations, (ii) the maintenance and management of plantations, and (iii) packaging.

Import volumes of agrochemical components for banana production is another indicator of the effects of trade policy on the sustainable management of natural resources in the banana industry.

Finally, given the increase in banana production and the changes in foreign demand in recent years, a number of instruments have emerged that are designed to increase the compatibility between the aspirations of both environmental protection and trade by promoting the adoption of clean production systems. Among these instruments are environmental certification programmes. Certification programmes encourage the incorporation of standards of sustainable production and promote conversion to production of other goods, such as organic bananas.

Environmental externalities associated with the banana production cycle

The expansion of banana production and the resulting extension of the agricultural frontier has caused important environmental effects associated with the three production stages.

Expansion of the agricultural frontier and its impacts on biodiversity

The structure of the banana industry in Ecuador has changed to the extent that the land area used for banana production has expanded drastically in recent years. Comprehensive data concerning the total area of land devoted to banana production is not available. The information that does exist has been collected by the National Banana Programme (PNB). Although a considerable number of hectares have been registered by the PNB, this does not represent the total. In 1992, the number of cultivated hectares increased by 6 per cent to 178,500 hectares. In accordance with the previous point, in the province of Los Ríos, the cultivated surface increased by 20 per cent, due to the presence of large banana plantations.

Ecuador has sustained the greater portion of yearly increases in agricultural production by expansion of the agricultural frontier. The El Guabo canton is one of the best banana producing regions in Ecuador. In El Guabo, small areas of land are dedicated to the production of bananas which, when taken all together, represent the entire agricultural surface of this canton. El Guabo is based primarily in banana production and has an agricultural structure totally dedicated to this crop. The limits of the banana producing zone are set by the four cantons from El Oro.

Scale, structure and productivity effects

The cultivated surface of bananas has grown 153 per cent between 1980 and 2000, going from 63,235 hectares to 160,001 hectares. The production of bananas at national level has grown from 150 per cent between 1980 and 1997. In the 1990s, the production of bananas increased from 2,850,000 to 5,750,000 metric tons, equivalent to a rate of growth of 100 per cent. The banana industry experienced relatively favourable productivity between 1980 and 1999. At the beginning of the 1980s, banana productivity at the national level was 20 metric tons per hectare, and increased to 23 metric tons per hectare by 1989. The increase in production occurred because of an increase in the cultivated surface area rather than because of an increase in productivity.

Ecuadorian foreign trade policies implemented during the 1980s and 1990s significantly affected the productive structure of the banana sector. By 1989, farms ranging between 21 and 50 hectares represented most of the national banana production surface at 28.1 per cent. Finally, plantations ranging between 501 and 1000 hectares or more monopolised the smaller proportion of the national banana production surface: 2 per cent in 1989, 1.7 per cent in 1990, and 1.8 per cent in 1991.

According to data provided by the System of Information and Agricultural Census (SICA), by 1998, 80 per cent of the banana producers owned plantations ranging between 1 and 30 hectares, 10 per cent owned plantations ranging between 51 and 100 hectares, and 3 per cent of the national producers owned plantations with more than 100 hectares.

Today there are 5,491 banana producers in Ecuador, of which 80 per cent own plantations no larger than 30 hectares. This means that the productive structure of the banana sector depends considerably on the small and medium producers (SICA-MAG,1998).

Technology effects

Banana production in Ecuador has had to face important technological changes as a result of events of natural phenomena, changes in international demand - particularly with respect to 'environmentally friendly' products, and trade policies that have forced the producers to gradually incorporate new technological processes.

In the 1980s, the technological changes in the Ecuadorian banana sector arose from the need to deal with natural phenomena. In the 1980s, a high percentage of banana production came from non-technology based farms. In 1989, 28.2 per cent of the production came from technology based farms, 15 per cent from semi-technology based farms, and 57.3 per cent from non-technology based farms. This reflects the efforts made by the banana sector to improve its production process efficiency over the last few years.

The causes for the increased level of technology in banana production are closely linked to the implementation of national production and trade policies as well as international trade policies, for example, national pricing and commercialization policies.

Effects of minimum prices or regulatory effects

Since the regular fixation of a minimum price for Ecuadorian banana producers in 1993, the level of technology based production has increased.

While the implementation of price fixing policies occurred in 1993, the European Union adopted a quota regime to their banana imports, which forced Ecuador to channel its export offer to new markets and thus incorporate better technological processes into its banana production systems.

Quality effects

An important niche has been established for the market of organic bananas. In 1998, world imports of organic bananas were estimated to reach 27,000 metric tons in comparison to the total import of bananas at about 11,000,000 metric tons. In the medium and long term, the increase in demand for organic bananas can become a potential market for small producers.

During the last decade, the world banana market has been characterized by an increasing demand for product quality. The feasibility of the banana sector depends on different physical changes, including pathological and physiological alterations. In order to access international markets with a high quality product, the banana sector has developed a consciousness of the environmental effects of its activities.

A number of environmental certification programmes have been adopted by several banana companies, including the ISO 14001 standard and the Eco-OK Programme. Certification covers banana plantation, farming, harvesting, packaging, and transportation.

Environmental certification helps the banana producers demonstrate their environmental commitment to consumers, and helps them be more competitive in the global market.

In addition to the emergence of environmental certifications, the Ecuadorian banana industry relies on important initiatives in terms of sustainable production. One of these initiatives is organic production. Although there is currently no record of the number of producers who have adopted this measure, the National Banana Corporation (CONABAN) has designed a project to encourage the production of organic bananas, principally in the El Oro province. Organic production presents both advantages and disadvantages.

On balance it appears that the environmental effects of increased banana production and trade was positive in Ecuador.

Social effects of increased banana production and trade

Another key aspect in the economic evaluation of trade policies related to the banana sector, is the analysis of the terms of trade. The terms of trade reflect to an extent the level of competitiveness of a productive sector or the economy by connecting international prices to national prices. It also has an important bearing in determining the distribution of the gains from trade and hence its social effects.

Social effects

During the 1980s, there was, in general, no government policy to foster agricultural production, particularly as related to pricing. Furthermore, the few government policies in place were directed to foster the export of agricultural products.

Thus, there was no control over the price that was paid to the banana producers, until the beginning of the 1990s when price fixing policies appeared. The significant increase in prices during the nineties conveys the competitiveness policy of Ecuador's banana in world markets, and the translation of international market prices to local producers, which improved the producers' terms of trade. Pricing policy during the 1990s has been variable and in some instances favourable for banana producers. Since 1993, the Government periodically fixed the *minimal sustenance prices* that the exporters would have to pay the banana producers. In 1995, two other banana varieties, the Baby Banana and the Red Banana, are included into the minimal price fixing system, which resulted in the diversification of banana production that would help producers improve their economic situation.

In synthesis, the diverse price policies aimed at adjusting and fixing the minimum referential price for bananas resulted favourably in some cases, as shown in the increased feasibility of banana plantation activity.

The referential price for the producers is a dollar component of the exporter price. Furthermore, even though the goal was to seek some equity in the income of the banana

production activity, in many cases the policy resulted in deterioration for both the producers and exporters.

During the 1992-1997 unstable period for the exporters' price, a drastic change occurred in the banana production structure, which allowed for the diversification of production and consequently in exports. In 1995, the banana for export began to be differentiated in order to satisfy the demands of new markets, and the prices of the new varieties of banana (Baby and Red) began to be controlled. Even though prices fluctuate from year to year, 1995 showed an improved price for the banana exporters, because they were able to identify a box of banana as '22XUNM', subject to the fixation of minimum referential and FOB (free on board) prices.

Finally, during the last months of 1999, Ecuador endured a market campaign that affected the national banana industry, by spending US\$ 1,500,000 in publicity to misinform the public about the real interests of the banana producers.

Terms of trade effects

As far as the terms of trade, they are completely different for the banana exporters as compared to the producers.

The consumers of bananas are characterized as demanding high quality products. For 1999, this offer extended to the 'Orito' or Baby Banana 0.30 per cent and the 'Morado' or Red Banana 0.04 per cent. During the 1980s and 1990s, Ecuador's banana activity faced a series of changes, arising mainly from economic and trade policy measures that have also resulted in direct and indirect social effects.

In order to establish the relationship between a policy and the wage level, the study compared the average income of a worker in the banana sector, to the general living wage.²

Furthermore, the analysis relates the evolution of the banana workers income with such indicators as export volumes and the evolution of the exporters' price. This relationship will reveal whether an increase or decrease in the banana trade and in the producers' price creates a better or worse wage or income situation. This analysis will be completed with the criteria gathered in the banana sector regarding the situations that influence the evolution of the income of the banana worker, including plantation productivity and yield, producers' prices, changes in the international market and natural phenomenon.

On the other hand, in order to estimate changes in socio-economic and demographic levels, several social and economic indicators from the Integrated System of Ecuadorian Social Indicators (SIISE) for the main regions dedicated to banana production activity were analysed.

² In the banana sector, the workforce employment is categorized by activity. Therefore, wages differ depending on whether the worker works at the plantation or at the ports. This analysis refers to the wages earned by workers at the banana plantations.

Effects on the banana workers' wage levels

An analysis of banana worker income first requires a knowledge of the wage structure in Ecuador, as well as the wage structure particular to the banana industry.

Banana workers are seasonal labourers whose income depends on the type of work done, the number of hours worked or the number of bunches of bananas harvested. Although in wage terms, the increased work productivity could have generated increased wages during the 1980s, no substantial increase occurred. In fact, between 1981 and 1983, the banana plantation worker wages were frozen. Furthermore, this happened when banana exports and the internal referential price were increasing.

The income increases between 1989 and 1994 coincide with two situations: the growth in banana exports and a significant improvement in the export and production prices, except for 1993. This situation increased the profitability of the banana producer and increased the number of planted hectares, the number of employed workers, and their income level. Between 1994 and 1998, although the tendency is toward export growth and the stability of the producers' price, there are no positive changes in banana production wages.

To better appreciate the wage situation of the banana worker, the study includes information concerning the average income received by a high technology plantation worker during the last three years. The social impacts of banana production activities during the 1990s were, in general, related to the adoption of economic and trade policy measures, among them structural adjustment policies, the implementation of a pricing system in the sector, and the elimination of credits to the agricultural sector. Linked to credit elimination is a lack of integrated promotion policies to the banana producers and, in general, to all agricultural producers.

Composite effects in most representative banana production zones

The analysis of the demographic and socio-economic characteristics of the most representative banana production zones requires a brief review of the situation in the equally representative banana producing provinces. Banana plantations demand a series of climatic, topographic, logistic (proximity to suppliers and ports for shipment) conditions - which define the coastal region of Ecuador as the prime banana producer, trader, and exporter. However, some highland provinces (Sierra), especially those bordering the coastal provinces, also have the right conditions. Each province that has dedicated most of its area to banana plantations, also has a particular characteristic in terms of the banana plantation extension.

The prominent banana regions are grouped in the central and southern coastal provinces, corresponding to the provinces of Los Ríos, Guayas and El Oro. There are different reasons why banana plantations have concentrated in these provinces. After the economic crisis of the 1980s and the change in banana varieties, the province of El Oro held half of the national banana planted area, consisting mostly of small and medium farms; however, the provinces of Los Ríos and Guayas hold the most extensive banana properties as compared to El Oro. The exportable production of banana in these regions is quite significant since it represents its main economic support.

The demographic indicators from the 1982 census clearly show an uneven population distribution in the banana producing regions. The weak concentration of land holdings among the banana producers was one of the factors influencing the demographic growth in this region. El Oro is considered as the banana producing province par excellence, and shows the best socio-economic conditions.

Other social effects

In a national context, education in most of the banana producing regions registers indicators below the national average. In the banana sector, access to these services is limited, since the plantations are located far from towns. The El Oro Province, on the other hand, has improved the situation with respect to education in most of its regions, compared to the average in the country.

Integrated assessment of trade liberalization

The implementation of structural adjustment and foreign trade policies, as well as national and international norms, has influenced the banana sector in different ways. The increased volume of banana exports has increased banana production and thus land and natural resource use. Important changes in international and national trade policy occurred during the 1990s. The European Community's Banana Regime reduced the prices of the Ecuadorian banana in international markets, which made Ecuadorian exporters attempt to increase the exported volume to compensate for the lower price.

Competitive production structures

Ecuador's banana sector production structure is characterized by the level of a plantation's technology, which determines the use of inputs. By adopting trade liberalization and structural adjustment policies that have to do mainly with the banana sector, as referred to earlier, the Government has sought to improve the producers' competitiveness in the market.

Technology and quality effects

The technology effect refers to changes in technological development in an economic activity generated or fostered by trade liberalization policies. A positive technology effect occurs when trade liberalization and an increase in exports promote the use of better technology, which improves the economic yield, and internalizes environmental and social impacts.

Banana production in Ecuador has experienced several technological development stages.

The introduction of new varieties of banana was one of several important developments in the sector that resulted in higher profit levels for producers.

The increase in the international demand for quality as well as quantity of bananas during the 1990s generated a higher level of technology use in the farms. Higher levels of technology not only improve economic yield by reducing certain production costs, but also improve the efficiency of the use of natural resources.

Increase in banana certification

There has been a significant increase in certified banana plantations and businesses in this sector that use environmental management systems and that abide by national environmental laws. Although only a few of the businesses in the sector have actually adopted clean technologies for their production processes, the initiatives above mentioned show the occurrence of a *positive technology effect* in the banana sector.

Specialization, environment and health policies

The degree of specialization depends on the adoption of different technology levels, as mentioned earlier. Ecuador's economic opening has fostered the specialization of banana producers in order to maintain access to world markets. A negative effect occurs when a trade agreement or policy makes it difficult for the state to implement adequate environmental policies.

The Government implemented significant structural adjustment policies and signed trade agreements relevant to the Ecuadorian banana sector. It also implemented significant environmental policies. In 1994, the Environmental Security Regulations for the Banana Sector, the Plant Quarantine Handbook, the Export Facilitation Law, plague control norms, packaging norms, and the banana policy for plantations re-conversion were implemented.

Thus the overall social, environmental and economic effects of SAP policies in the banana sector have been positive.

Policy recommendations package

The proposed policy recommendations include economic and non-economic incentives. As has been determined throughout the study, an important percentage of banana producers are small and medium producers. They should be provided with feasible mechanisms with which to access technology transfer, i.e. the establishment of a database of capital goods that constitute certified clean technologies intended for banana production.

The interest rate that will be paid to the final beneficiary will act as the financial incentive or credit facility that could be granted to those banana producers at the national level that are willing to reconvert their production from traditional banana varieties to organic bananas, to adopt environmental certification systems or to raise their land productivity through the adoption of efficient technological processes.

Environmental certification

In recent years, there has been a significant increase in certification programmes among banana producers. Unfortunately, until now, because of the high cost of certification, most of the banana producers that have acquired certification are large

companies. Producers that apply for an 'ecolabel' hope to attract 'green consumers' who are prepared to pay higher prices for bananas that are guaranteed to have generated lower environmental impacts in the process of production. There is a need to devise special mechanisms to help small producers and to reduce the costs of certification, including through financial incentives.

Referential price fixing policy

Since 1980, the Government has fixed the referential price for banana producers. Banana production is still considered a strategic product in terms of social and economic well-being. However, the referential price for producers does not consider all the externalities related to banana production. The referential price fixing policy is an important mechanism to avoid large corporations from setting the price and driving away small producers. Some banana producers' associations have been interested in increasing availability of clean technologies in order to take advantage of the benefits of complying with higher environmental standards, but this initiative needs to be reinforced if it intends to reach small and medium sized banana producers.

Environmental awards

It may be highly beneficial for banana producers to create a system of environmental awards granted by municipalities in order to give recognition to those businesses that are making important efforts to adopt clean technology in Ecuador. In addition to environmental awards, a periodic publication containing a list of companies that comply with the national and regional environmental regulations could motivate banana producers to pursue such awards and improve the image of the Ecuadorian banana internationally.

Institutional policy

In 1999 the National Banana Programme was phased out and the Banana Consultative Council was created in its place. The Consultative Council is in charge of fixing the referential price for producers, but is not in charge of controlling and monitoring banana production or with providing producers with technical assistance. The National Banana Programme was no longer viable because of a lack of resources. There is a need to strengthen the institutions that can address internalizing sustainable policies aimed at Ecuadorian banana production.

Capacity building measures

To control the environmental impacts caused by banana production requires the participation of the actors in training programmes. To implement the policy of promoting cleaner production alternatives, the proposed action consists of compiling a manual on the advantages and disadvantages of organic production, environmental certification and recycling systems. To strengthen international markets, the proposed action consists of developing open trade contacts to promote the export of organic bananas. In order to assist in this process, the producers must increase their efforts to search for a more environmentally compatible product and to develop markets for organic bananas.

Implementation of the recommended social policies comprises the greatest economic cost for the banana company owners.

Conclusions

The project has revealed important results concerning the development of an industry of great economic and social importance in Ecuador. The project has also shown the positive and negative effects of distinct policies of foreign trade, structural adjustment measures and national and international regulations on the sustainable development of the banana industry.

The banana industry is an agricultural industry based on the export of its production. Banana production requires the direct use of natural resources and a labour force. The banana industry has become extremely vulnerable to fluctuations in international prices, changes in world consumption standards, trade and environmental regulations, sanctions applied by Ecuador's principal buyers, and the opinions of civil society. These situations have increased the consciousness of the banana industry, not only to analyse the effects of the industry in terms of sustainable development, but also to discuss policy measures to be implemented in order to achieve sustainable production.

Non-tariff measures applied by the European Union have increased the economic, environmental and social costs to the industry. This situation exposes a need to empower those who make the policy decisions in the banana industry. The project further reveals the need to promote and quantify the analysis of trade and national production policies, as well as to study the existing environmental regulations of Ecuador.