Costa Rica and Guatemala					
Sector	**Sector selection factors**	**Economic Findings**	**Environmental Impacts**	**Social Impacts**	**Legal-Regulatory Effects**
Sugarcane	**Economic/Trade Factors:** • An important export product in Central America. It can be affected in a positive or negative way in a FTAA scenario. • Product that yield more per hectare. • Sugarcane exports are US$ 40 millons per year. • Mechanical harvest of the product in Costa Rica, represents an increase in production costs and affects the competitiveness of its product in relation to other countries. • Agricultural exports still represent a significant share of Centroamerican exports. • The United States is the most important sugar market for the region countries. • Persistent vulnerability problems due to tariff barriers from the United States. • Contributes substantialy to Guatemala's economy; the harvest 2002/03 represented 3% of GDP and 23% of total foreign	• The United States recieved 43% of Central American exports during the 90's and was responsible for 42% of their imports. • Implementation of FTAA could result in the increment of production due to the elimination of tariff barriers. • In 2001 exports were $399 millions, mainly from Guatemala and Costa Rica. • CAFTA will allow countries of the region to consolidate this commercial preference and will give stability to their exports. • Estimations show that Guatemala and Costa Rica sugarcane exports will continue the same trend. • Guatemalan exports increase 5% per year, while Costa Rican exports could increase 2.5%.	• If environment effects are not considered when increasing production, the FTAA will have a negative impact. • The FTAA promotes trade and investment; environmental impact could be positive if trade is made with clean Technologies. • Sugarcane crops cause physical and chemical alterations to soil. • Land levelling diminishes erosion in zones with sutrsolpes and favors surface water collection and canalization, which increases its availability. • Weed control and burning practices have a negative impact on the soil due to pesticide residues deposit on the soil and that are non-biodegradable, and also to the liberation of some nutrients to the atmosphere. • Chemical and organic fertilization contributes to the improvement of soil properties. • Chemical fertilization and weed control have a negative impact on surface waters. • Chemical fertilization has a	• Sugarcane production and industrialization generates employment because the activity is not too mechanical yet. • Sugar cane burning is harmful to human health due to heat and gas emissions like carbon dioxide.	• Environmental impact assessments of trade agreements have not been a tool used by countries of the region for environmental policies. • Environmental and trade policies are usually considered independent. • Assessments on environmental impact in Central America are focused on being a guide for the internal environmental management of each country. • EIA should be used as a preventive tool of environmental impact. However, the effectiveness of this tool has been questioned in the region. • Costa Rica has the most advanced environmental policies in the region. However, its environmental management is complex, scattered and with limitations when applying those policies to each institution. • The legal problem of

Costa Rica and Guatemala					
Sector	**Sector selection factors**	**Economic Findings**	**Environmental Impacts**	**Social Impacts**	**Legal-Regulatory Effects**
	currency generated by traditional products. • Last decade, Guatemala sugar production increased 142%. **Social Factors:** • This sector represents an important employment source because of its characteristics. • In 2002, this sector employed 30.500 people in Costa Rica. • In Guatemala it represents an important job source of 55,000 aprox. **Environmental Factors:** • This product requires large amounts of natural resources. • A resolution in Costa Rica regulates traditional slash and burn practices prior to harvest, due to the environmental effects.		negative impact in underground waters. • Sugar cane burning process has the worst impact on the atmosphere due to carbon dioxide emissions.		Costa Rica is that legislation follows different management schemes and many are duplicated among institutions, resulting in excessive and useless paperwork (red tape). • Environmental management in Costa Rica is centralized. Municipalities do not deal directly with environmental matters. • The Ministry of Environment and Natural Resources (MARN) is in charge of environmental matters in Guatemala. • In Guatemala there is a lack of management asessment duplication of action, lack of knowledge of environmental laws and a lack of institutional vision. • Since last century, sanctions for environmental damage have been include in Costa Rica's environmental legislation. • The Environmental

Costa Rica and Guatemala					
Sector	**Sector selection factors**	**Economic Findings**	**Environmental Impacts**	**Social Impacts**	**Legal-Regulatory Effects**
					Administrative Court of the Ministry of Environment and Energy (MINAE) in Costa Rica is the most common way to denounce environmental damage and restoration. • Lack of adecuate training from justice operators at an administrative and criminal level in Costa Rica. • Lack of legal transparency on how to channel resources from resolutions or agreements in environmental damage matters in Costa Rica. • In Costa Rica, the MINAE elaborated a Nacional Policy for Cleaner Production. • The general public is not well acquainted with Guatemala's environmental legislation. • In Guatemala, laws applicable to sugarcane and melon are complied with only when businessmen need to protect their agricultural

Costa Rica and Guatemala					
Sector	**Sector selection factors**	**Economic Findings**	**Environmental Impacts**	**Social Impacts**	**Legal-Regulatory Effects**
					and industrial activities. • Legal instruments have been established for environmental protection. • Legal instruments include financial and technical tools in order to define environmental planning systems. • A combination of rules and regulations with different objectives in both countries, from adequate use of natural resources, to regulations to promote an integral sustainable development. • Constitutional rights to a healthy environment and the duty to protect the environment. • General environmental legal framework that includes water resources, wildlife, energy and mineral resources, the atmosphere, ecosystems and production activities such as industrial and turism, as well as polluting products like chemicals and pesticides.

Costa Rica and Guatemala					
Sector	**Sector selection factors**	**Economic Findings**	**Environmental Impacts**	**Social Impacts**	**Legal-Regulatory Effects**
					• Regulations include preventive and punitive measures, as well as new institutions in charge of implementing this legislation. • Among the preventive rules and regulations, there are those technical rules with environmental impact. • Rules that impose administrative, civil and legal sanctions are included in the punitive regulations. • These judicial regulations are obligatory but its effective compliance depends on the capacity of control and sanction. • In Costa Rica there are some soft laws that define environmental profiles and envrironmental or sustainable development plans of action. • Environmental legal instruments have been criticized due to its lack of enforcement. • Deficient application of the environmental

Costa Rica and Guatemala					
Sector	**Sector selection factors**	**Economic Findings**	**Environmental Impacts**	**Social Impacts**	**Legal-Regulatory Effects**
					legislation on different context of both countries. • Lack of an idea of sustainable development in the judicial system, especially in the economic legislation. • Poor enforcement measures in Guatemala's Environmental Legislation. • Guatemala's legislation does not include technical parameters to messure and monitor environmental pollution.
Melon	**Economic/Trade Factors:** • An important export product for Central America with potential impacts in a FTAA scenario. • Melon has recently become the main export product in Central America. • In 2001 the cultivated area reached 20,000 hectares (6,700 ha. in Costa Rica and 5,900 ha. in Guatemala). • In 2001 Central American	• The United States recieved 43% of Central Amerian exports during the 1990s and provided 42% of the imports to these countries. • Inter-regional trade has strengthen in the past years, favoring El Salvador, Guatemala and Nicaragua; this is significant considering DR- CAFTA since potentially US could displace Central American products. • The DR-CAFTA could result in an expansion of the production due to the	• If the expansion of production doesn't take in consideration environmental effects, the FTAA will have a negative impact on the environment. • The FTAA promotes trade and investment; environmental impact could be positive if these changes include cleaner technologies. • A free trade agreement could increase cultivated areas to fullfill international demand. • The expansion of the agriculatural frontier could	• Allows the integration of unskilled workers, but generally it requires a large number of skilled workers during harvest season. • Melon production activities generate temporary jobs for both unskill workers (harvest) and skilled (packing). • Hygene parameters and industrial security are applied inside packing plants and training and capacity building for the sound management chemicals.	• Environmental impact assessments of trade agreements have not been a tool used by countries of the region for environmental policies. • Environmental and trade policies are usually considered independent. • Assessments on environmental impact in Central America are focused on being a guide for the internal environmental management of each

Costa Rica and Guatemala					
Sector	**Sector selection factors**	**Economic Findings**	**Environmental Impacts**	**Social Impacts**	**Legal-Regulatory Effects**
Melon (cont'd)	exports rose to US$118 million, mainly from Costa Rica and Guatemala. • In Costa Rica this sector generates aproximately US$ 63 million per year. • In 2002, Costa Rica generated US$72 million from this sector. • Significant average yearly growth rate for Costa Rica (12.8%), as well as for Guatemala (24.8%), for the 1990-2002 period. • Product with higher rate of return per hectare. • Agricultural exports are still a significant contribution to Central American exports. • Persistent difficulties of vulnerability due to the strong protectionist measures from the U.S. **Social Factors:** • Generates direct and indirect employment in Costa Rica (10,000 in harvest season). **Environmental Factors:** • Product that uses intensive amounts natural resources.	elimination of trade barriers. • The United States was one of the most important markets for Costa Rica's melon exports in 2001-2002; 7,687,788 of boxes were exported. • Europe is the second largest importer of Costa Rica's melon. • Other markets of importance include: Colombia, Brasil, among others in Central America. • Eport conditions for melon in Costa Rica and Guatemala will remain. • Estimations show that the expected average growth of Costa Rica's sales will reach 4.5% per year, and 6% for Guatemala.	have important implications. • The main impact on the soil is caused by solid and toxic waste disposal. • The amount of plastic and pesticides are high in the production of melon; environmental damage can be considered as high. • The impact caused by fumigation is moderate. • The main impact on water resources from the production of melon takes place during the wash process. • The use of nematicides during the fumigation process has a negative impact on groundwater due to filtration. • The main impact to the atmosphere comes from methyl bromide used during the fumigation process and the potential depletion of the ozone layer. • Mechanical activities produce CO2 emissions directly to the atmosphere due to the fossil fuels generated by trucks and released into the atmosphere.		country. • EIA should be used as a preventive tool of environmental impact. However, the effectiveness of this tool has been questioned in the region. • Costa Rica has the most advanced environmental policies in the region. However, its environmental management is complex, scattered and with limitations when applying those policies to each institution. • The legal problem of Costa Rica is that legislation follows different management schemes and many are duplicated among institutions, resulting in excessive and useless paperwork (red tape). • Environmental management in Costa Rica is centralized. Municipalities do not deal directly with environmental matters. • The Ministry of Environment and Natural Resources

Costa Rica and Guatemala					
Sector	**Sector selection factors**	**Economic Findings**	**Environmental Impacts**	**Social Impacts**	**Legal-Regulatory Effects**
Melon (cont'd)	• In the production process of melon, fumigation is done with methyl bromide, which is a flammable and highly toxic gas that could destroy the ozone layer.				(MARN) is in charge of environmental matters in Guatemala. • In Guatemala there is a lack of management asessment duplication of action, lack of knowledge of environmental laws and a lack of institutional vision. • Since last century, sanctions for environmental damage have been include in Costa Rica's environmental legislation. • The Environmental Administrative Court of the Ministry of Environment and Energy (MINAE) in Costa Rica is the most common way to denounce environmental damage and restoration. • Lack of adecuate training from justice operators at an administrative and criminal level in Costa Rica. • Lack of legal transparency on how to channel resources from

Costa Rica and Guatemala					
Sector	**Sector selection factors**	**Economic Findings**	**Environmental Impacts**	**Social Impacts**	**Legal-Regulatory Effects**
Melon (cont'd)					resolutions or agreements in environmental damage matters in Costa Rica. • In Costa Rica, the MINAE elaborated a Nacional Policy for Cleaner Production. • The general public is not well acquainted with Guatemala's environmental legislation. • In Guatemala, laws applicable to sugarcane and melon are complied with only when businessmen need to protect their agricultural and industrial activities. • Legal instruments have been established for environmental protection. • Legal instruments include financial and technical tools in order to define environmental planning systems. • A combination of rules and regulations with different objectives in both countries, from adequate use of natural resources, to regulations to promote an integral

Costa Rica and Guatemala					
Sector	**Sector selection factors**	**Economic Findings**	**Environmental Impacts**	**Social Impacts**	**Legal-Regulatory Effects**
Melon (cont'd)					sustainable development. • Constitutional rights to a healthy environment and the duty to protect the environment. • General environmental legal framework that includes water resources, wildlife, energy and mineral resources, the atmosphere, ecosystems and production activities such as industrial and turism, as well as polluting products like chemicals and pesticides. • Regulations include preventive and punitive measures, as well as new institutions in charge of implementing this legislation. • Among the preventive rules and regulations, there are those technical rules with environmental impact. • Rules that impose administrative, civil and legal sanctions are included in the punitive regulations. • These judicial

Costa Rica and Guatemala					
Sector	**Sector selection factors**	**Economic Findings**	**Environmental Impacts**	**Social Impacts**	**Legal-Regulatory Effects**
Melon (cont'd)					regulations are obligatory but its effective compliance depends on the capacity of control and sanction. • In Costa Rica there are some soft laws that define environmental profiles and envrironmental or sustainable development plans of action. • Environmental legal instruments have been criticized due to its lack of enforcement. • Deficient application of the environmental legislation on different context of both countries. • Lack of an idea of sustainable development in the judicial system, especially in the economic legislation. • Poor enforcement measures in Guatemala's Environmental Legislation. • Guatemala's legislation does not include technical parameters to messure and monitor

Costa Rica and Guatemala					
Sector	**Sector selection factors**	**Economic Findings**	**Environmental Impacts**	**Social Impacts**	**Legal-Regulatory Effects**
					environmental pollution.

Panamá					
Sector	**Sector selection factors**	**Economic Findings**	**Environmental Impacts**	**Social Impacts**	**Legal-Regulatory Effects**
Sugar Cane	**Economic/Trade Factors:** • Panama's sugar cane exports to the United States are highly competitive, according to recent trade balance analyses. • Sugarcane exports to the U.S. are important for the Panamanian economy. • Panama exported almost 296,000 tons of sugar cane in the years 2002- 2004 (18% of the production). • Sugar cane exports are constrained by a tariff quota. • From 1999 to 2005, Panama has increased its sugar cane exports to the United States. **Social Factors:** • It is estimated that in the years 2004/2005, 181 producers which employed approximately 4,400 workers. • There are 4 sugar-mills in	• The United States is the most important trade partner of Panama. It receives 51% of Panama's exports. • Panama is considered one of the most open economies of the world, ranked fourth in Latin America. • A trade agreement with the United States could increase exports due to the elimination of tariffs and ICChe benefits. • The agreement reached after the negotiations related to the sugar sector and the elimination of the net exporter clause for raw sugar within the TPA framework will allow a significant growth for the Panamanian industry. • After the completion of the TPA the United States did not accepted to eliminate tariffs for sugar imports, but to expand it to 7,000 metric tons. • The increase in tariffs will result in additional income	• Land leveling causes the elimination of microbial growth and changes in the natural shape of lands. • Soil salination; surface and groundwater pollution. • Weed control and artificial riping through agrochemicals have a negative impact over fauna due to its toxic components. • Elimination of vegetation cover. • Pollution of water. • Burning process has a negative impact on the atmosphere due to carbon dioxide emissions. • Indiscriminate use of pesticides and inefficient use of fertilizers.	• With a FTA sugar cane planted areas cultives would increase as well as the number of jobs in rural areas. • The increment of tariffs will generate 300 new jobs. • The non-mechanical nature of sugar cane cultivation/harvest facilitates the creation of jobs. • The employment of local people by sugar-mills is very important for rural areas, creating approximately 4,300 direct jobs during harvest season. • Workers health and security can have some minor negative impact due to the dangerous nature of some activities. • Burning is damaging due to the generation of heat and toxic gas emission, such as carbon dioxide. • Other activities with a negative health impact include artificial riping and weed control due to the use	• Panama is in the process of strengthening the national environmental management system. • The National Environmental Authority (ANAM) is the main body dealing with environmental matters, but there are other actors. • An Environmental Interinsitutional System is in place, composed by public and sectoral institutions working on environmental matters. • It is necesary to stregthen each one of these institutions. • The strengthening of the environmental managment system is being promoted through the design of the Environmental and Scientific Research Network. • ANAM seeks cooperation mechanisms

Panamá					
Sector	**Sector selection factors**	**Economic Findings**	**Environmental Impacts**	**Social Impacts**	**Legal-Regulatory Effects**
Sugar cane (cont'd)	Panama and they generate 2,000 jobs and 10,000 more during harvest season. **Environmental Factors:** • An increase in the quota will require 1,167 additional hectares for sugar cane.	for sugar exports to the United States of 2 to 3 million dollars per year for Panama. • After FTA negotiations, it was determined that there will not be a free trade of sugar cane between Panama and the United States. • Panama is prepared to cover the increment of those tariffs due to land availability and because in other years Panama has dealt with higher tariffs that have slowly been reduced.		of existing toxic agro-chemicals. • It is an important work generator, especially temporary for a high number of people with little education due to the low cost of that labor force.	with universities to include in their educational programs an environmental management approach. • Is important to increase the number of environmental consultants. • ANAM requieres stronger political support to strengthen its leadership as the coordinating institution for environmental management.

Panamá					
Sector	**Sector selection factors**	**Economic Findings**	**Environmental Impacts**	**Social Impacts**	**Legal-Regulatory Effects**
Fishery Products (shrimp)	**Economic/Trade Factors:** • Panama's shrimp exports to the United States are highly competitive according to a trade balance analysis. • U.S. is the main destiny for cultivated shrimp. • In 2005 cultivated shrimp production reached 7.097 Ton (US$ 23,943). • Prepared shrimp has a tariff of 5% (Panama doesn't pay those tariffs because ICC). • From 1999 to 2005, Panama has increased its shrimp exports to the United States. **Social Factors:** • Fish and shrimp cultivation generate direct jobs for approximately 1,000 workers, and indirect jobs for 3,000. • In 2004, shrimp activity generated 846 jobs in the farms per month and 400 in related industries. (processing plants, food plants and laboratories).	• The United States is the most important trade partner of Panama. • Panama is considered one of the most open economies of the world (ranked fourth in Latin America). • A trade agreement with the United States could increase exports due to the elimination of tariffs and the benefits from ICC. • Comercialization of shrimp depends 100% of exports and its most important market is the United States, followed by Spain and France. • Panama's shrimp exports to the United States are not subjected to tariffs. • Under a TPA scenario, changes in Panama's shrimp exports to the United States are not expected. • Panama's shrimp exports is below its potential capacity so it can be expanded (from the current 9,345.50 hectares, only 7,234 ha are being used).	• Destruction or degradation of water ecosystems in the coastal region (wetlands, swamps and mangroves). • Changes in local hydrology. • Salt water intrusion and salination of aquifers. • Hardening and degradation of soil due to the use of lime, pollution of water on the coasts. • Effluents discharge creates eutrophication of water due to organic waste matter. • Effluents discharge generates chemical pollution of sea water due to the use of agrochemicals and biocides.	• Economic impacts of shrimp production are positive because it generates jobs. • Harvest and processing seasons of shrimp generates a positive impact due to the high amount of jobs, especially of women. • Shrimp activity generates conflicts with communities because of the competitivity for the land. • The creation of shrimp cultives in rural areas with low demand of this product, generates presures due to the higher demand of basic services as water, electricity, telecomunications, health and education for inmigrant labor force.	• Environmental management in Panama is strengthening. • The National Authority of Environment (NAE) is the principal body, but there are other actors. • There is an Environmental Interinsitutional System, formed by public and pectoral institutions with environmental competence. • It is necesary to stregthen each of these bodies. • The "Design of Environmental Cientific and Technologycal Investigation Web" is trying to strengthen the environmental managment system. • The NAE searchs cooperation mechanisms with universities to incluye in its educational silabus diverse environmental management approach. • Is important to increase the number of

Panamá					
Sector	**Sector selection factors**	**Economic Findings**	**Environmental Impacts**	**Social Impacts**	**Legal-Regulatory Effects**
Fishery Products (shrimp) (cont'd)	**Environmental Factors:** • One of the biggest environmental problems related to shrimp capture is the use of nets that captures shrimp and other smaller species, reducing its population. • The creation of shrimp cultivation ponds generates a strong environmental impact in relation to land use. • Destruction of important ecosystems of wild flora and fauna in coastal zones due to the use of shrimp cultivation ponds.				environmental consultants individually or inside NGO's or consultant companies. • The NAE requieres a broader political support to strength its leadership as an environmental management coordinator of the country.

Panamá					
Sector	**Sector selection factors**	**Economic Findings**	**Environmental Impacts**	**Social Impacts**	**Legal-Regulatory Effects**
Fishery Products **(shrimp) (cont'd)**					