Environmental and Labor Issues: This is a category III project according to the IIC's environmental review procedure because specific impacts may result which can be avoided or mitigated by adhering to generally recognized performance standards, guidelines and design criteria. The principal environmental and social issues related to this project include: sustainable forestry practices, air emissions, wastewater, solid waste, noise, occupational health and safety, and fire safety and emergency response.

ACOSA is ISO 9000 (Quality Control) certified for its industrial facility and is currently implementing measures to obtain certification under international standards ISO 14000 (Environmental Management) and OHSAS 18001 (Occupational Health and Safety).

Management of Forest: ACOSA currently has 7,802 hectares of plantations consisting primarily of radiata pine and patula pine. ACOSA has voluntarily set aside a total of 1,064 hectares of its plantations for conservation purposes, primarily to protect watersheds and natural springs, and to conserve areas with the greatest biological diversity.

The plantations are typically located on the slopes of hills in areas that were historically haciendas consisting primarily of pastureland for cattle and sheep and for crops such as potatoes and corn. These plantations complement other forms of agriculture practices primarily in the valley bottoms, which tend to be more apt for agriculture. The area to be acquired for new plantations as part of the expansion project will not result in resettlement, as the property to be acquired is to be purchased from the owners of existing haciendas. In cases where local neighbors of the haciendas have traditionally used the land for grazing cattle, ACOSA will continue to allow these persons to graze cattle on the land in an orderly manner, when the trees are taller than four meters and are therefore not affected by grazing. In addition, there are potential employment opportunities related to the plantations. ACOSA also has a social specialist on staff who works with the nearby communities to support social development of the area: education, environmental protection, and economic development. ACOSA has a Social Responsibility Program (Programa de Responsabilidad Social), which was created as a proactive response to the needs and expectations of communities located in the company's direct area of influence (Pastocalle, Tanicuchi, Mulaló, and Toacaso). The company identified their needs and expectations through a process of public participation and social assessment of the area. Through this program, ACOSA supports local schools by providing hundreds of local students with courses on business management, among other topics.

Pest management primarily consists of manual and biological controls. The pesticide lambda cyhalothrin is only used when pests threaten to cause significant degradation to the plantations. In the last ten years, this pesticide has only been applied twice to combat pests that biological controls would not have been effective in controlling. Lambda cyhalothrin is classified by the World Health Organization (WHO) as a Class II moderately hazardous pesticide. Empty pesticide containers are stored in a secure place and returned to the supplier. ACOSA employees who apply pesticides are provided with appropriate personal protective equipment, including masks.

After trees are harvested, the waste wood is collected and sent to the industrial plant to be converted into sawdust and burned in the boilers to produce energy. Other sustainable forestry management measures implemented include directional felling, reduction of soil compaction, and protection of riparian areas.

ACOSA is in compliance with the Ley Forestal y de Conservación de Áreas Naturales y Vida Silvestre and has obtained the necessary Licencias de Aprovechamiento Forestal Maderero for its operations.

Air emissions:

Air emissions from the plant are primarily a result of combustion processes. Two of their boilers rely on biomass as their energy source, and both have cyclone separators to significantly reduce particulate matter (PM) emission levels. The third is a drier/burner for agglomerate material that uses diesel and sawdust for fuel and has a filter to eliminate particulate matter. ACOSA has recently begun measuring emissions of particulate matter, nitrogen oxide (NOx), and sulfur oxide (SOx). The particulate matter, sulfur oxide, and nitrogen oxide air emissions levels from the two boilers are also in compliance with Ecuadorian and international standards as specified in the IFC's Environmental Health and Safety Guidelines for Board and Particle-Based Products and IFC's general Environmental, Health and Safety Guidelines for Air Emissions and Ambient Air Quality. The particulate matter and sulfur oxide air emissions levels from the drier/burner for agglomerate material are also in compliance with the above standards. However, the company is currently assessing actions necessary to reduce nitrogen oxide emissions in order to comply with Ecuadorian and the above-mentioned international standards.

The industrial plant has dust extraction systems in place that lead to a bag filter system that is inspected periodically to eliminate blockages preventing effective removal of dust.

ACOSA has begun implementing a monitoring program for air quality in the workplace to assess the levels of formaldehyde emissions, which according to the monitoring data are within acceptable levels.

Solid Waste: Solid waste generated by the project primarily consists of residual wood, board off-cuts, dry chips, and sawdust, which are disposed of in the boiler to avoid the accumulation of waste. Ash from burning residual wood is stored in a container in an area sheltered from the wind until it is taken to an off-site landfill. ACOSA will make improvements to the implementation of its waste management procedures in order to ensure that its waste, particularly the drums, are properly identified, classified and stored in a restricted area with appropriate protection (i.e. located on an impermeable surface). The company will also implement a training program to improve the management of solid waste, including appropriate categorization, labeling, and storage methods. The company is also evaluating measures to improve the handling and disposal of sludge captured by the wastewater treatment plant, which is temporarily being stored at the wastewater treatment plant.

Wastewater: Wash water contains high quantities of suspended solids and leachate from woodchips, resulting in high organic content. ACOSA will upgrade its existing wastewater treatment system, which, upon successful implementation, will allow the company to comply with Ecuadorian standards as well as IIC's requirements for wastewater quality as specified in the IFC's Environmental Health and Safety Guidelines for Board and Particle-Based Products.

The company will also make improvements to ensure that the secondary fuel storage containment area is impervious to leaks and will ensure that the valve that connects the containment area to the drainage system is closed. The culverts that lead to the oil/grease separators will also be assessed and upgraded as necessary to ensure that they have sufficient capacity to accept the incoming flow and that the separators are effective in capturing hydrocarbons.

Fire Safety: The plant is equipped with a firefighting system, which follows the U.S. National Fire Protection Association (NFPA) standards. The system consists of a network of 10 hydrants and a series of hoses that are connected to a separate tank containing a reserve of firefighting water. It also consists of fire extinguishers, smoke detectors, and alarm systems that are triggered manually and are located throughout the plant. The company is considering increasing the number of fire safety devices, particularly in the western part of the plant. Training in fire-fighting and related equipment is periodically offered, and emergency/fire drills are also performed.

Occupational Health and Safety: Dust extractors have been installed to control particulates at the industrial plant. The company provides workers with the appropriate personal protective equipment for the jobs they perform. Ear protection devices are required to be worn by all employees in areas of high noise. Staff receive training in order to integrate safe working practices and ensure that workers use the appropriate protective gear, such as safety boots, dust masks, and earplugs. The company will implement measures to ensure that all machinery is properly guarded. Workers are provided with health insurance and first aid services. All work-related accidents are recorded and analyzed immediately and thoroughly.

Labor Issues: The company has a policy that persons under 18 years of age are not permitted to work.

The company offers its employees medical services on site. The plant is staffed with a nurse and has an ambulance on site in case of an emergency. The cafeteria at the plant is in good condition, and warm meals are provided to workers in the plantation. Transportation is also provided to ACOSA employees.

Monitoring and Annual Reporting: ACOSA will develop an Environmental Management Plan (EMP), which will include a schedule for the implementation of environmental projects including ISO 14001 and OHSAS 18001 certification and a monitoring and reporting program, which upon successful implementation of agreed measures will ensure that their facilities comply with national laws and IIC's environmental guidelines. The EMP will also include an Environmental Management System (EMS) based on ISO 14000 standards. The EMS will describe who will be responsible for monitoring the implementation of environmental activities. The company will submit annual reports summarizing the monitoring data related to the following: compliance with ISO 14001 and OHSAS 18001 certification requirements; occupational health and safety; fire safety and emergency response; disposal of solid and liquid waste; sustainable management of the forest; relations with local communities; and labor issues.