Environmental and Labor Issues

This is a Category III project according to the IIC's environmental and labor review procedure because it could produce certain effects that may be avoided or mitigated by following generally recognized performance standards, guidelines, and design criteria. The main environmental and labor considerations associated with this project involve environmental management and permitting; liquid effluent, air emissions, and solid waste management; and occupational safety and health, labor practices, and social issues.

Environmental Management and Permitting: GINSA is located in Villa El Carmen township in the Department of Managua, Nicaragua. The project area, which lies outside any protected natural areas, has the features of a tropical dry forest ecosystem entirely given over to farming and livestock-raising activities. In the past, parts of the area were used as pasturelands for raising cattle and for farming activities. There are currently no villages in the area that might be affected by the project. Back in 2008, the Ministerio del Ambiente y los Recursos Naturales (MARENA, Ministry of the Environment and Natural Resources) issued permits for GINSA to build 500 (42 x 20 meter) corrals and feedlot facilities for 50,000 head of cattle and to install a cattle feed plant. The corrals, the feedlots, and the feed plant are already operational. In October 2010 GINSA received approval from Empresa Nicaragüense de Acueductos y Alcantarillados (ENACAL, the Nicaraguan water and sewerage authority) for the extraction of water from three wells. GINSA holds all necessary permits from other applicable authorities, such as the Ministerio Agropecuario y Forestal (MAGFOR, the Livestock and Farming Ministry), the Instituto Nacional Forestal (INAFOR, the National Forestry Agency), and the municipal government. MARENA will inspect the project facilities as it deems necessary, with or without prior notice, to verify compliance with applicable domestic regulations.

GINSA is a subsidiary of Grupo Viz, which has four similar facilities in Mexico. The project evaluation process included visits to GINSA in Nicaragua, as well as to a Grupo Viz plant in Culiacán, Mexico. The Grupo Viz facilities in Mexico have an environmental policy that is posted on its web site (www.sukarne.com.mx).) and a management structure designed for addressing any environmental and occupational safety and health issues arising in connection with its operations. Such issues are handled locally at each facility by a coordinator in charge of implementing the corresponding environmental management plan. Some Grupo Viz facilities in Mexico have been recognized as socially responsible enterprises by the Centro Mexicano para la Filantropía (the Mexican Center for Philanthropy) and the Alianza para la Responsabilidad Social Empresarial (the Alliance for Corporate Social Responsibility), two non-profit civil society organizations.

As a company related to Grupo Viz, GINSA has the group's full support. As such, it will implement the same international best practices employed by the group in addressing environmental and occupational safety and health issues, as well as its corporate social responsibility program. In addition, GINSA's operations will comply with all applicable Nicaraguan regulations. The IIC will require that GINSA have an environmental and occupational health coordinator to handle any such issues arising in connection with its operations and to ensure compliance with Nicaraguan regulations and IIC environmental and labor requirements.

Liquid Effluent, Air Emissions, and Solid Waste Management: The main potential environmental impacts of cattle production operations have to do with water, air, and soil impacts. However, the proposed project does not involve free-range, extensive grazing, nor do the cattle have direct access to any bodies of water such as rivers or lakes. The project involves intensive cattle feedlot operations. GINSA uses well water in its operations. Following an analysis of the project's radius of influence, ENACAL decided to grant GINSA a well water extraction permit, having determined that there would be no interference with any well used as a public water supply. The radius of influence of GINSA's well water extraction points (three wells with a flow rate of 250

gallons per minute each, although at present only two of the wells are operational) is 80 meters; there will not be any interference with the closest ENACAL well, which is some 4.25 kilometers from the project site. GINSA produces cattle feed in a plant on its own premises. Wastewater from cleaning the corral area and feed plant is channeled to two sedimentation ponds to prevent it from being discharged into any bodies of water and polluting them. Rain water is channeled into ravines or rivers according to specifications set by MARENA. Domestic sewage (approximately 20 cubic meters per month), mostly from the bathrooms, shower area, and employee and eating area, is piped to a dual-chamber septic tank (with an upflow anaerobic filter and absorption well) for treatment. The effluent will meet the standards set by Nicaraguan regulations (Decree 33-95). GINSA will be required to test the effluent regularly, submit its findings to MARENA, and file corresponding reports with the IIC.

The dirt access roads currently leading to the project site and corral areas will be paved. In the interim, the roads are regularly watered down to reduce dust emissions from the passage of vehicles distributing feed to cattle in the corrals or transporting animals in and out. GINSA is also implementing a reforestation program, planting native tree species to serve as natural barriers against dust and odor emissions and to mitigate the project's visual impact. The feed plant generates fine and coarse dust particles in connection with its storage operations and with the grinding of fodder and the milling and mixing of grains (such as corn and sorghum) with fish meal and other raw materials for the production of cattle feed. To mitigate dust emissions, the IIC will require GINSA to install air emissions control equipment (such as dust collectors and cyclone separators) in its feed plant and to implement a dust emissions monitoring program and file regular reports with the IIC in this respect. Some natural barriers (native tree species and euchalyptus trees) are already in place; corrals and roads are regularly watered down during the day, which helps reduce dust emissions.

The solid wastes generated by the facility are mostly organic matter (namely dung regularly collected from the feedlots), which will be recycled into organic fertilizer by composting (aerobic biological decomposition of organic matter) and vermicomposting (the use of earthworms to aid in the decomposition of organic matter) methods. The end product (compost or humus) will be marketed as soil fertilizer and sold to local farmers. Animal carcasses are buried and covered with lime. As a medium- or long-term option, GINSA may also explore the possibility of treating organic wastes (dung, feed residues, dead animals, etc.) by anaerobic fermentation in a biodigester to obtain biogas (mainly methane) for generating electricity or as fuel for transport vehicles.

The project for using organic solid waste to obtain biogas as an alternative energy source is already being evaluated for Grupo Viz's facilities in Mexico. It has been endorsed by the Mexican government through the Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT, the Department of Environment and Natural Resources); an application has been filed with the United Nations Framework Convention on Climate Change (UNFCCC) to earn carbon credits as a Clean Development Mechanism (CDM) project under the Kyoto Protocol, reducing greenhouse gas emissions by approximately 20,000 tons of CO_2 equivalent per year. GINSA in Nicaragua would benefit from Grupo Viz's know-how and experience in implementing a similar program for obtaining biogas from organic solid waste.

Thus far, GINSA has not been slaughtering cattle or processing the meat in its own facilities, although there is a possibility that it will do so in the medium-term future. At present, once the fattened animals reach their target weight, they are sent to a third-party facility for slaughtering and for processing the meat. This facility is located in the village of Nandaime and was visited in the course of the on-site visit to the project. All environmental, occupational safety and health, and product quality and safety issues involved in the operation of the slaughter facility used by GINSA appear to be well-managed. The slaughterhouse is in compliance with Nicaraguan regulations and has good manufacturing practices certification from MAGFOR. Its system designed to ensure

product quality and compliance with USDA requirements for beef exports to the United States (including animal welfare standards for slaughterhouses with requirements for ensuring that animals awaiting slaughter in meat packing plants are subject to as little stress as possible) also has HACCP certification. The meat processing operations generate a substantial volume of waste water, but it is well-managed. Following proper treatment in accordance with domestic regulations, the liquid effluent is used to irrigate the green areas on the grounds of the slaughter facility. Only minimal amounts of solid waste are generated by the meat processing facility, since most of each animal (roughly 95%) is used as a product or byproduct (meat, bone meal, organs, suet, skin, etc.)

Workplace Safety and Health: The GINSA facility is surrounded by a wire mesh perimeter fence. Access to the site is controlled by security guards. Workers are furnished with personal protective gear, including gloves, work uniforms and boots, goggles, mouth masks, a helmet, and a back support belt. There are employee bathrooms and showers, as well as a cafeteria and eating area. Raw materials (mainly grain and fodder) are stored in silos and a warehouse on the grounds of the facility, and diesel fuel is stored in a 12,000-liter tank equipped with a secondary spill containment structure with a capacity equal to 110% of that of the tank. GINSA outsources its pest control services to a local firm licensed by the appropriate authorities to provide this type of service. All facilities have safety signage and a fire-fighting system complete with pumps, a water storage tank, and fire extinguishers.

Labor Practices and Social Issues: GINSA is in compliance with Nicaraguan labor laws. It has 102 employees on its payroll; they receive all the benefits to which they are entitled by law and are paid more than minimum wage. All workers hired by the company are of legal working age as established by domestic labor legislation. There is currently no union on-site, but any worker wishing to do so is free to join a labor union.

Monitoring and Reporting: GINSA will finish implementing the corrective and mitigating measures established in the environmental management plans approved by MARENA for the project and will craft an Environmental and Social Action Plan (ESAP) in conjunction with the IIC addressing the issues outlined in this summary to ensure compliance with IIC environmental, labor, and workplace safety and health requirements. It will furnish the IIC with annual environmental monitoring reports on its progress in implementing the ESAP.