

## 1. Environmental Classification

This is a category III project according to the IIC's environmental classification system because specific impacts may result that can be avoided or mitigated by adhering to generally recognized performance standards, guidelines, and design criteria. The environmental and labor considerations related to the Project include the following: management of solid waste, air emissions, fire protection, employee safety, and emergency response.

## 2. Principal environmental impacts

### **Solid Waste**

**Rice hulls:** Rice hulls are a by-product of rice production and are the main source of solid waste in the company; hulls are approximately 20% by volume of the processed paddy rice. It is estimated that 100,000 tons of rice hulls will be generated this year, based on the volume of paddy rice harvested in the 2003-2004 season. There are alternative uses for rice hulls that allow for a partial recovery of value, for example, bedding material for chicken houses and fiber supplement in animal feed, as well as energy recovery in cement kilns, rice dryers and boilers. However, the possibilities of recovering value are limited by high freight costs because the places where rice hulls are produced are far from the points of consumption, as well as its relatively low calorific value. The use of rice hulls as fuel in boilers and dryers has another limitation, namely the generation of considerable ash that in turn requires continuous ash removal systems that are expensive to purchase and maintain. The use of rice hulls in cement kilns is limited given the distance between the kilns and the places where the rice hulls are produced. Rice hulls are mostly disposed of in open-air controlled landfills. Disposed material and landfills are controlled in accordance with the procedures agreed on with the Laboratorio de Análisis Tecnológicos del Uruguay (LATU, Uruguayan Technical Analysis Laboratory). In turn, SAMAN, together with LATU, the Instituto Nacional de Investigaciones Agropecuarias (INIA, National Institute of Agricultural Research) and the Gremial de Molinos (a mill association), conducts research and develops procedures for handling rice hulls and converting them into energy. **Waste from receiving and precleaning before drying:** Rice hulls are transported by third-party trucks covered with tarps and are mostly used as animal feed in the area or disposed of in open-air controlled landfills.

### **Air Emissions**

**Particulate matter:** Drying ovens emit particulate matter into the air as the fines with the rice are released and become suspended in the air and drawn by convective air flows. In general, the mitigating measure is to remove the particulate matter from the gas stream by installing cyclonic inertial separators at the points of discharge. This equipment removes the coarse contaminants with a minimum of 98% efficiency and the fines with a minimum of 50% efficiency. At one of the plants (Salto), the gas emissions are washed in a countercurrent water curtain to remove the remaining dust. This mechanism operates in a closed circuit (sedimentation before recirculation). This equipment does not prevent the release of particulate matter around the drying ovens. In those areas, personnel wear the respirators described in the company's Safety Procedures Manual. There is no evidence of the effects of these emissions in areas other than the immediate vicinity of the drying units.

## 3. Occupational Safety and Hygiene

Production workers use safety and personal protection equipment specific to their task (protective ear and eyewear, masks, safety footwear and gloves, etc.) as established in the company's Safety Procedures Manual. According to Uruguayan law, all workers are covered with health insurance and against work-related accidents. The company also has a preventive medical program with annual check-ups. The processing plants have fire alarm systems and fire protection systems approved by

Banco de Seguros del Estado (national insurance bank) and the fire department. Under an agreement with the national insurance bank, SAMAN trains its employees in work-related health and safety issues and emergency plans.

#### **4. Labor Practices**

SAMAN complies with national labor laws. The main mandatory labor standards include social security benefits, freedom of association, organization of workers' unions, prohibition of forced labor and exploitative and abusive child labor, and nondiscrimination in the workplace.

#### **5. Quality Control / Food Safety**

The processing of rice is entirely mechanized, which reduces potential sources of contamination of the product. There are specific measures related to personal hygiene and special clothing at the packing points, where workers might come into contact with the product. However, there are some aspects of the process that are key to the food safety system: (i) Rice must be dried down to a 13.5% moisture level to prevent microbial infection and to keep insects from attacking the rice; (ii) Good ventilation of storage areas prevents condensation and moisture from affecting the product; (iii) Magnetic metal detectors; (iv) Size, weight and color sorting systems that also help eliminate foreign matter. Routine production controls detect any irregularities. In accordance with client specifications, SAMAN can also conduct laboratory tests for toxins, pesticides, and other chemicals. Pest control: SAMAN controls rodents with a trap system that is checked regularly. Apart from inspections and monitoring, SAMAN uses gas fumigants approved for use in the food industry to control insects.

#### **6. Control and Follow-Up**

SAMAN shall develop to the satisfaction of the IIC an Environmental Management Plan (EMP) to ensure compliance with domestic regulations and the IIC's environmental and workplace safety and hygiene standards. The EMP shall include an annual report with information on solid waste management, training programs in occupational health and safety, emergency response, reports on work-related accidents and food safety issues.