

Main Environmental Considerations

1. *Climatological Phenomena.* The project will be carried out 2.5 km from the Poechos reservoir near the Chira riverbed, 75 meters above sea level. "El Niño" is a significant worldwide climatological phenomenon that affects the region, especially the Equatorial Pacific and the coasts of southern Ecuador and northern Peru. El Niño is marked by wide variations in atmospheric pressure and temperature, sea temperature, precipitation, and wind direction and velocity. These parameters are therefore indicative of the presence of El Niño. The effects vary with the intensity of El Niño. The most significant effect on water sources involves an increased load of solids in suspension, water volume, and wind, among other factors. The damage caused by El Niño in the past may be seen within a radius of 25 kilometers, but since there were no major disturbances in the project habitat, no direct El Niño effects are expected for the project. 2. *Water Use.* Farm. AQUA takes water for the farm from the Poechos dam diversion channel in Daniel Escobar Escobar (Chira-Piura) 2.9 kilometers from where it branches off, so the farm is regarded as the first to use the water. The Administración Técnica Distrito de Riego Chira de la Dirección Regional Agraria Piura (Chira Irrigation District Technical Office of the Piura Regional Agricultural Directorate) that is part of the Peruvian Ministry of Agriculture issued a license to take a total of 6.035 m³/second from the channel at this intake. Of this amount, 6 m³/second are not for consumptive use, i.e., they must be discharged back into the Chira River after being used at the farm so as not to alter the river's biological balance. The remaining 0.035 m³/second are for nonagricultural consumptive use and will be consumed by the farm, mainly due to evaporation. It is therefore expected that AQUA will have to pay the Peruvian government for 1,088,640 m³ of water consumed each year.

Processing Plant: Water for processing, cleaning, and sanitation is from underground sources. A well is to be drilled on the project site, a few meters from the plant. The processing plant is expected to use 65 m³ of water daily. The water will be chlorinated before it is used in the plant. 3. *Liquid Effluents:* Farm: The farm operations per se produce no liquid effluents, and the water that is returned to the Chiura River is good for agricultural use.

Sewage. A septic tank will be built near the new building to treat sewage from offices and processing plant bathrooms.

Processing Plant: As mentioned above, the processing plant will use some 65 m³ of water daily; most of this water will be used for cleaning. There will be a similar volume of wastewater with a high organic load (fish blood). Building the processing plant will also involve building an effluent treatment facility with stabilization ponds 500 meters from the processing plant and 500 meters from the fish farm. The treatment facility will be built on an irregularly shaped, one-hectare piece of land. All of the treated wastewater will be used to irrigate the green areas of the farm. This will be done in compliance with World Health Organization (WHO) health standards for using wastewater for farming and aquaculture. The process water treatment project calls for designing and implementing a system of stabilization ponds with two primary facultative ponds and then two secondary maturation ponds. 4. *Solid Waste.* Farm. The farm will generate two main types of solid waste: Common or domestic waste, and organic waste which are typically, fish that die during grow-out. All of this waste is now burned in an incinerator on the premises.

Processing Plant: All of the solid organic waste (fish heads, entrails, and bones, etc.) from the filleting process in the processing plant (approximately 68% of the initial gross weight of each fish) will be separated, stored separately from the finished product in order to avoid contamination, and sold to specialized companies for making fish meal. 5. *Cold storage:* AQUA will need cold storage facilities for fillets to be exported. These facilities will not use chlorofluorocarbons because they are known to damage the ozone layer. 6. *Emergency response.* AQUA will prepare an emergency plan for the new fillet processing plant, including procedures for fires, refrigerant leaks, and other events. 7. *Use and handling of fuel.* The project will use some 1 m³/day of diesel fuel to power a 260kWh generator for an estimated consumption of 180 kWh. The vehicles required for the farm to operate properly are expected to consume 0.2 m³/day.

There is now a generator at a provisional location that meets the farm's electricity needs. It will be moved to a permanent location where a fuel tank will be installed with a fuel spill containment system. The fuel storage tank capacity will be 10.5 m³. 8. Quality Control. At its new processing plant, AQUA plans to implement HACCP (Hazard Analysis and Critical Control Point) certified food safety and quality control standards, which are required for exports to the U.S. and the European Union.

Main Labor Issues 9. *Occupational Health and Hygiene.* The farm workers have appropriate safety equipment for their daily activities. There are established emergency procedures for occupational accidents; workers are transported to receive immediate medical attention. In addition, processing plant workers will receive all of the requisite safety gear, such as goggles, gloves, and aprons. They will also have all of the insurance required by law, as well as first aid if required. The workers will also receive occupational health and safety training. 10. *Labor Considerations:* AQUA respects the minimum working age and prohibits forced and obligatory labor. The workers are free to join unions voluntarily in keeping with Peruvian law, which provides that unions cannot be organized with less than twenty workers. There are no unions in the company at present. There is an eight-hour workday and a maximum forty-eight hour workweek. AQUA pays a minimum daily wage in keeping with the minimum living wage provided for in farm labor legislation. Sixty percent of the employees are paid more than the minimum wage. As an additional benefit required by Peruvian law, all of AQUA's employees have, in addition to their regular health insurance (ESSALUD), complementary insurance for risky work that is specific for this particular agricultural activity. 11. *Oversight and Compliance:* AQUA will be required to:

Comply with Peruvian legislation and obtain the pertinent environmental license for building and operating the fillet processing plant and expanding the farm, per the guidelines set out in the Environmental Impact Assessment (EIA) drawn up by the company.

Implement an Environmental Management Plan acceptable to the IIC. The plan will include (1) a description of the work to be done, with the pertinent environmental impact and mitigation measures to be taken; (2) a schedule for implementing all of these steps; and (3) the factors that are to be monitored annually for the life of the project. The IIC will verify compliance with its own environmental and labor review policy, evaluate AQUA's yearly reports, and make regular site visits as part of the project supervision process.