

Delivering Water to the Dry Downstream Basin of the Portoviejo River from Upstream - Improving sanitary conditions, expanding agricultural land and shrimp farming -

OECF (President, Chairman of the Board, Akira Nishigaki) is providing Ecuador with a Loan for the Portoviejo River Basin Water Transmission Project (hereinafter referred to as "the Project") amounting to 12,404 million yen. The Loan Agreement was signed today, by H.E. Mr. Mario Guerrero Murgueytio, Charge of Affairs a.i., and Mr. Akira Nishigaki, OECF's President, Chairman of the Board.

As a result, the cumulative total for OECF loan commitments to Ecuador now stands at 63,756 yen million in 7 commitments.

The amount and conditions of the Loan are as follows.

1. Loan amount and conditions

Project	Amount (Million Yen)	Interest Rate (% p.a.)	Repayment Period (years)	Tying Status
Portoviejo River Basin Water Transmission Project	12,404	2.5 (2.1)*	30(10)	General-Untied

*consulting services

2. Project Description

The Portoviejo River Basin Water Transmission Project

(1) Need for the Project

The State of Manabi, in which the Project is located, is the third of the Ecuador's 21 states in terms of population, accounting for 10% of the country's population of 11 million. 40% of Ecuador's gross national product (GNP) is accounted for oil, agriculture, forestry and fisheries. The State of Manabi is one of the main centers of agriculture, forestry and fisheries industries, accounting for approximately 20% of Ecuador's total product of these industry. It is especially known for its production in coffee, cacao, banana and shrimp for export.

The state is characterized by the variability of its rainfall. The amount of rainfall differs greatly by season, area, and year. The geographical difference is seen in the mountainous eastern area and the Pacific coast, with the average rainfall being 1,800 mm in the east and only 400 mm on the coast. On the Pacific coast side, the year-to-year difference in rainfall is also extreme because of the influence of the climatic phenomenon "El Nino". The records for the last 30 years on the Pacific coast show that 1,800 mm of rainfall was recorded in the year with heaviest rainfall and 180 mm in that with the least. The seasonal difference is also great, with 90% of the total yearly rainfall concentrated in the rainy season from December to May.

The Pacific coast area of Manabi State is essentially poor in water resources, and further development of the area is considered difficult due to shortage of water. Especially, in the Project area, the Portoviejo River basin, where the state capital, Portoviejo, which has become a densely populated city of 230,000 is located, shortage of water has become a crucial problem. This makes the situation caused by the seasonal difference, year-to-year difference and the serious shortage of water in the dry season and dry years in this area even worse.

The supply of water in the Portoviejo Basin is enough to satisfy only 30% to 60% (depending on the amount of rainfall in the year) of what is needed. The area's population, which does not enjoy piped water supply services, depends on water taken directly from the river or well water. It is necessary to improve the living conditions of the population by providing a stable and safe water supply.

Agriculture is a major industry in Manabi, accounting for 40% of all production and employing 40% of the working population. For sustainable development, it is essential to expand the irrigated area in order to increase the productive capacity of the existing developed land. However, the shortage of water is an obstacle to this. On the Pacific Coast, shrimp farming has been increasing rapidly since the latter half of the 1970s. Exports of cultured shrimp are a very important source of foreign currency earnings. Currently there are 130 ha of shrimp farms at the mouth of the Portoviejo River. However, further expansion is not possible because of the need to protect the mangrove area. In addition, the shortage of pure water for dilution leads to water contamination, high salinity, etc, which prevents expansion of shrimp production. In the Project's target area, various problems exist because of the water shortage. It is essential to deal with those problems by developing new water resources.

(2) Content of the Project

The Manabi Rehabilitation Center (CRM) drew up the Water Resource Development Plan (Master Plan), with assistance from the Japan International Cooperation Agency (JICA), in order to solve the serious water shortage problem in the target area. This Master Plan aims to improve living conditions and promote rural development through a series of projects for developing water resources, such as the construction of the aqueducts to be implemented with OECF assistance, and projects for utilizing water resources, such as improvement of irrigation, water supply and sewerage systems.

The Project is to deliver 16 m³/s water (approximately 210 million m³ a year) to the Portoviejo River from the Daule River by constructing the following three (3) aqueducts:

(1) Daule - Peripa -- La Esperanza Aqueduct

(Gravity flow system; Diversion tunnel: capacity 18 m³/s, length 8.3 km)

(2) La Esperanza -- Poza Honda Aqueduct

(Gravity flow system incorporating pumping stations; Diversion tunnel: capacity 16 m³/s, length 11.4 km; Open aqueduct, length 5.5 km)

(3) Poza Honda -- Mancha Grande Aqueduct

(Gravity flow system; Diversion tunnel: capacity 4 m³/s, length 4.0 km)

Aqueducts (2) and (3), above will be financed by OECF. Aqueduct (1), located upstream, which is not part of the OECF-assisted Project, is currently under construction, financed by the Corporación Andina de Fomento (CAF) and the Government of Spain. The following project benefits are expected: (1) Preservation of water quality of the Portoviejo River, (2) Improvement of living conditions by expanding water supply, (3) Expansion of agricultural land by irrigation, (4) Increased production capacity for the cultured shrimp industry (cultured shrimp production per year will be expanded from 173t to 302t).

The loan is for civil works, procurement of materials and equipment, and consulting services.

The Feasibility Study (1992) and Detail Design (1995) for the Project were carried out with assistance from JICA.

The Executing Agency is the Manabi Rehabilitation Center (CRM) (address: Apartado 81, Portoviejo, Manabi, Ecuador, TEL: 593-5-637-388; FAX: 593-5-638-390).