

## BRIEF DESCRIPTION

The project is located at northern most island municipality of Itbayat, Batanes. The irrigation dam is the main component of the Itbayat Integrated Area Development Program (IADP). Other components include reforestation, improved cattle production, and a number of livelihood and institutional activities. The purpose of the structure is to impound water and conserve it for irrigation, particularly during the dry season.

The dam will retain the basic design made by NIA in 1995. It will be zoned earthfill embankment consisting of an impervious core of clay, outer zones of random fill and rock toe drain. In order to improve its physical stability and optimize the use of the impounded water for irrigation, some important revisions to the design of the dam were recently made by Geotecnica Corporation. Specifically, 139 holes totaling 3,620 meters deep were drilled early this year along the axis of the dam. These holes were injected with 2,045 bags of cement grout to seal the reservoir and prevent the water from seeping out of the pond. In case the pond water level does not reach the predicted 65.0 msl design level, a second outlet will be added at a lower dam elevation of 61.0 msl to allow irrigation to continue even during very dry seasons.

An ungated, concrete open spillway will be constructed at the left end of the dam through which the floodwaters will discharge, thus preventing the collapse of the dam. To diver floodwaters during construction, a single 1.22 meter diameter reinforced concrete pipe will be installed along the lowest point of the dam axis. Upon completion of construction, this pipe is planned to be plugged and floodwaters will pass through the open spillway.

Construction of the dam is under the supervision of DPWH Batanes Engineering District, in coordination with the NIA and CARP.

When fully operational, the Itbayat Dam will provide year-round irrigation for about 200-hectares of farm land in Bgy. Raele. This will pave way for the agricultural independence of the island.

## GENERAL INFORMATION

Location of Dam: Barangay. Raele, Itbayat, Batanes

Source of Water: Raele River

Start of Construction: November 2003

### Dam:

Type	Zoned Earthfill Embankment
Height	18.0 meters (m)
Length	360.0 m
Crest Elevation	72.50 meters above sea level (msl)
Max. Flood Elevation	70.7 msl
Normal Water Surface Elevation	69.5 msl
Minimum Water Surface Elevation	65.0 msl
Active Storage Height	4.5 m
Dead Water Storage Height	10.5 m
Streambed Elevation	54.5 msl
Volume of Embankment	150,000 cubic meters

### Diversion Conduit:

Type	Single Reinforced Concrete Type (114m long)
Size	1.22 meter diameter
Discharge	8 cubic meters per second
Crest Elevation	69.5 msl

### Spillway:

Type	Ungated, open concrete chute
Size (width)	10.0 m
Crest Elevation	70.0 msl

### Two Irrigation Outlets

Size	200mm dia. G.I Pipe { @ Elev. 65.0 msl }
Discharge	0.155 cubic meters per second
Control	200mm dia. meter double gate valve
Size	200mm dia. G.I Pipe { @ Elev. 62. 0msl }
Discharge	0.155 cubic meters per second
Control	200mm dia. meter double gate valve

Watershed Area: 0.88 sq. km.

### Reservoir Area

Normal Water Surface	33.0 hectares
Minimal Water Surface	18.6 hectares

### Reservoir Capacity

Dead Water Storage	0.806 million cubic meters
Active Water Storage	1.134 million cubic meters

June 2003