

# Operation of Banga River Irrigation System

H.O. BIENES and O.A. TIBANG <sup>1</sup>

## Introduction

Banga River Irrigation System (BARIS) is a run-of-the-river irrigation system designed and constructed to irrigate 3,360 hectares covering nine barangays within the municipalities of Banga, Norala, and Sto. Nino in the province of South Cotabato.

Due to siltation of the irrigation canals the service area of the system has been reduced to 2,110 hectares wherein only 1,600 hectares can be irrigated during the wet season and 1,300 hectares during the dry season. The current service area is divided into three watermasters' divisions. There are nine farmers' irrigators associations (FIAs). The nine FIAs were organized into a federation which was registered with the Securities and Exchange Commission. The federation helps NIA in the operation of the system, especially in planning the schedule of water distribution before each cropping season. It also helps in actual water distribution as well as in settling conflicts between farmers. The FIAs assumed the responsibility of clearing vacant canal sections with due compensation from NIA. At present, there are five FIAs maintaining a 17.695-km long canal.

Heavy siltation of the irrigation canals causes shortage of irrigation water. Only 20% of the Banga river discharge can be diverted at the main canal intake; thus, irrigable area is greatly affected. The volume diverted fluctuates from 0.80 to 1.80 cubic meters per second (cms) in spite of daily desiltation of the settling basin.

## Operations

Prior to each cropping, a cropping calendar on water delivery schedule is prepared by NIA. The cropping calendar is presented for deliberation and finalization during a joint meeting of IA federations, barangay officials, Department of Agricul-

ture, lending institutions and other government and private agencies involved in crop production. This meeting is held one month before the release of irrigation water. The plan includes data on water management, irrigation releases, irrigation diversion requirement, programmed area and cut-off period. After thorough evaluation, deliberation and revision, if any, the IA federation passes a resolution approving the adoption of the cropping calendar. The cropping calendar is implemented by NIA personnel. Farmers in areas not programmed for rice or for water cut-off are encouraged to plant corn and other diversified crops. Usually two to three IA areas are scheduled for water cut-off.

Farmers are informed regarding the approved cropping calendar through meetings and by distributing mimeographed copies of the approved cropping calendar and the IA resolution to concerned individuals.

The area programmed for irrigation is divided into either two or three groups. Each group is provided with water for a specified number of days for landsoaking/land preparation up to crop maintenance. The first group is usually one month ahead of the second group, and the second is one month ahead of the third. In case problems arise during implementation, NIA shall not alter the plan without first consulting the IA federation. Canals and turnouts of areas not programmed for irrigation are closed and all unauthorized checks along the irrigation canals are removed by the NIA personnel with the assistance of the FIA officials. Canals are closed to avoid illegal diversion of irrigation water to the excluded areas. Since this method has been implemented over the last five years, problems on irrigation water and farmer's conflicts had been solved gradually.

However, there are areas scheduled for water closure which are not suitable for other crops like corn due to the area's hydrological and topographical conditions. Since most farmers in these

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<sup>1</sup>Irrigation Superintendent (IS) and Assistant IS, Banga River Irrigation System, National Irrigation Administration, Region XI.

areas insist on planting rice, NIA and IA agree to provide the area with irrigation water provided the programmed rice areas have been irrigated and with the condition that farmers are willing to pay the irrigation service fee. For areas planted to non-rice crops, farmers are allowed to irrigate their crops, especially during drought as long as the water schedule for the programmed areas will not be affected and they pay their irrigation service fees. In some areas, farmers plant corn or other crops adjacent to rice paddies. These crops can be irrigated through seepage. Such areas will not be billed because farmers claim that they are not directly served with irrigation water. In this regard, NIA is not liable to pay for the damaged crop due to seepage since the area is part of the programmed area for irrigation.

Unequal distribution of irrigation water in the

programmed area is also prevalent. Such situation usually occurs either when the river overflows or when the dam's equipment has broke down. Farmers are then forced to make illegal checks along the irrigation canals. During such situation, farmers located downstream are most affected. NIA and the IA officials therefore, meet to solve the problem.

In 1988, farmers planted wider areas than what was programmed resulting in water shortage during the dry and wet seasons. This shows that crop diversification is really needed in BARIS.

In 1989, NIA plans to irrigate 1,300 hectares during the dry season and 1,700 hectares during the wet season. Training of farmers on crop diversification will continue. Training programs are expected to help maximize crop production and solve the problem of water shortage.

*Table 1.* Statistical profile of the Banga River Irrigation System.

Item	Characteristics
Potential Irrigable Area .....	3,360 ha
Canal Capacity .....	10.0 cms
Total Canal Length	
a. Lined .....	10,746 km
b. Unlined .....	39,229 km
Total length of Farmditch .....	148.65 km
Soil Type .....	Sandy loam
Water Requirement .....	3 lps/ha
Present Service Area .....	2,110 ha
Number of Municipalities covered ...	3
Number of Barangays .....	9
Number of Lots .....	450
Number of Landowners .....	404
Number of Farmers .....	1,358
Water Availability (5-year record)	
a. At the River .....	5,026 Ips
b. At the Canal .....	1,202 Ips
Agricultural Support Services	
a. Credit .....	Land Bank, PNB, DBP and Private Lenders
b. Input Supply .....	Land Bank & Private companies
Processing .....	Private millers and driers
Marketing .....	NFA and Private traders
Watershed and Environment	
a. Area .....	324 sq km
b. Physical condition .....	Denuded
Major Problem .....	Water shortage due to heavy siltation