

CALAOAAN IRRIGATION SYSTEM

The farms served by the Calaoaan irrigation system are situated in three barrios--Calaoaan, Villa Laurencia, and Gabor--of the municipality of Sta. Cruz in Ilocos Sur. Sta. Cruz may be reached by taking the Ilocos-bound public buses. To get to the dam site, which is located in Calaoaan, one alights at a highway junction where a road, called Calaoaan Road, leads east to the barrio proper. This junction comes before the road leading to Sta. Cruz town proper. The distance between this junction and the barrio is estimated at 2 to 3 kilometers. There are tricycles at this junction which bring passengers to and from the barrio. Before reaching the barrio proper, however, one must get off at the road and hike about 100 to 150 meters to get to the system and the ricelands it services.

The System's Fields

In the wet season, the fields served by the system are planted to rice. The rice varieties planted by the farmers are either the traditional or modern varieties. The modern varieties they favor are the high-yielding ones developed by the IRRI. The wet season crop is planted in July, August, or September and it is harvested in October, November, or December.

In the dry season, when the creek supplying the system with water dries up, the farmers grow tobacco. This is their important nonrice crop which is grown mainly as a source of cash-income.

The total land area irrigated during the wet period is 150 hectares, tilled by 71 farmers. During the dry season, when the system does not have any water supply, the farmers resort to pumps for drawing water for their tobacco crops. The size of the fields ranges from one-third of a hectare, to 2 hectares. The average size is about 1.2 hectares per farmer.

As earlier mentioned, the ricelands served by the Calaoaan system cover portions of three barrios belonging to the town of Sta. Cruz. In Calaoaan, about 75 percent of its total number of households have rice farms to till; in Villa Laurencia and Gabor, the farming households number about 60 percent and 50 percent, respectively. These households grow tobacco during the dry season in the same farms where rice is planted

during the wet season. The nonfarming households in these three barrios derive their income from employment as farm laborers, security guards, and workers in mining firms.

Technical Aspects of the System

Water supply

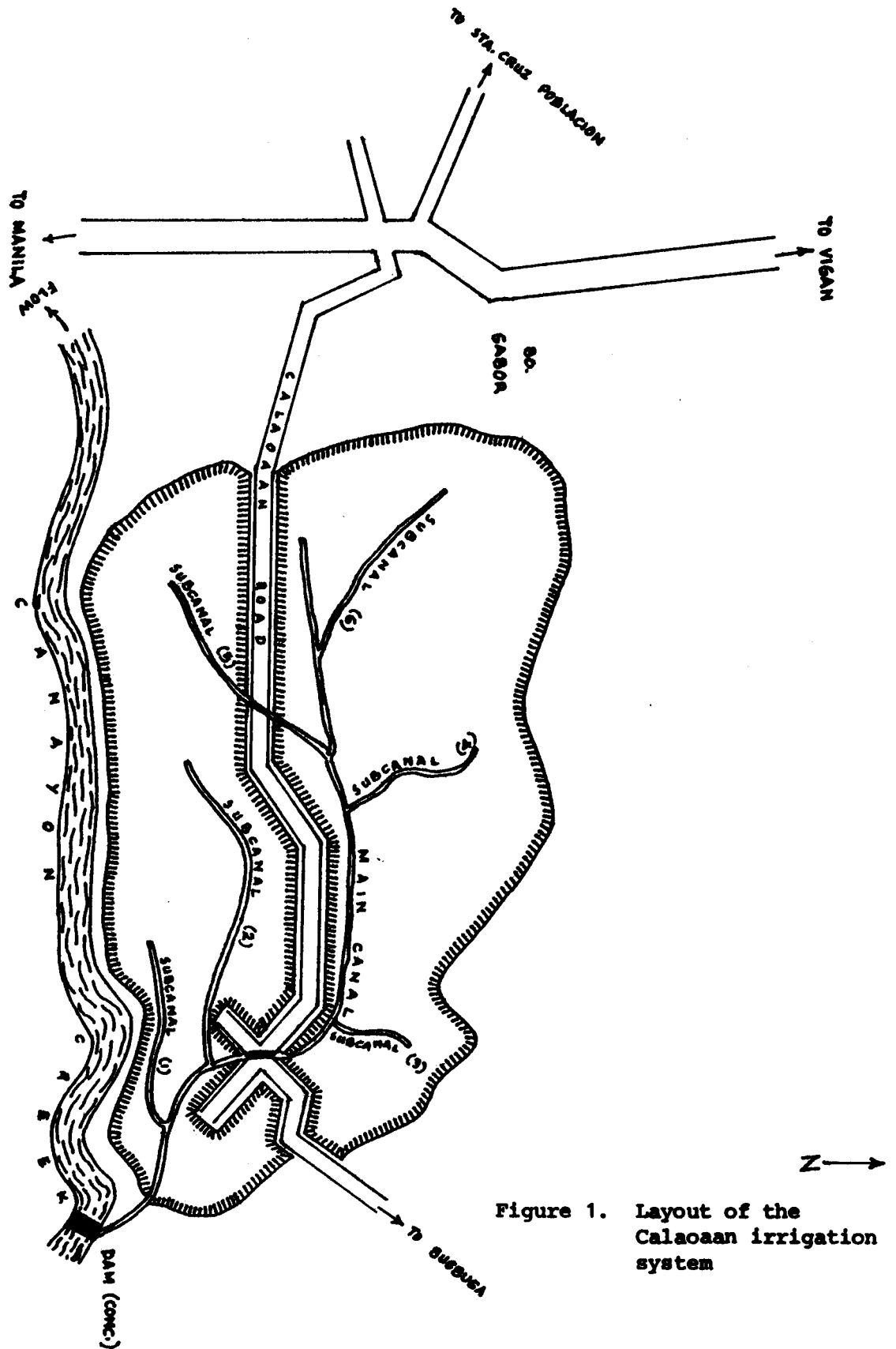
The Calaoaan system depends mainly on the Canayon Creek for its water supply.¹ The Bugbuga irrigation system, located above the Calaoaan system, also makes use of the latter's main source of water. This upstream system has approximately 40 farmer-users. There is no existing water-sharing agreement between these two systems.

Farmers claim that since 1972, the water supply entering the system has decreased because the area has had little rainfall. That is, in the last 5 years, while the system's water supply has been quite abundant during the months of July to November, the water flowing in the creek dries up in December until the onset of rains in June. This is the reason why the farmers observe only one rice cropping season per year.

Rice planting is done in July or August; harvesting takes place in October or November. While there is still water entering the system in December and early January, the farmers utilize the water to initially irrigate their tobacco fields. As water becomes scarce after January, the majority of the farmers use pumps to draw water from open wells for their tobacco crop.

The farmers of the Calaoaan system have no water-right to the Canayon Creek. However, their association has already applied for a permit on 8 October 1976. This application which was submitted to the local NIA, was handed together with the association's incorporation papers which were to be filed with the Securities and Exchange Commission (SEC). To date, however, no certification of approval has been received by the association on either applications.

¹NIA reports that the stream flow in the Canayon Creek in September 1977 was 3,000 liters/second while the flow on the system's main canal was only 125 liters/second. Discharge measurements were not made in the dry season since there was almost no water flowing in the creek nor in the system's canal.



The physical structures

The Calaoaan dam came into existence sometime in the early 1940s. The construction of the earlier temporary dam was initiated by two farmers, who were among the original beneficiaries of the system. The dam was made into concrete sometime between 1964 and 1965, through the assistance of the Presidential Arm on Community Development (PACD). This cemented dam was damaged, however, by a typhoon in 1967. When the association obtained cement from the Green Revolution movement in 1968, the association used the cement to reinforce the damaged dam.

In the early seventies, the association sought the NIA's help in constructing a new cement dam. The NIA responded quickly and in 1972-73, a new concrete dam financed by the NIA was constructed on the site (which has not changed since 1941) where the earlier dam stood. Farmers report that the NIA awarded the right to construct the dam to a Vigan contractor. The farmers were neither required to give their counterpart (free labor) in the construction project, nor were they asked to repay the total amount of ₱65,000 expended for the project.

The dam is in good condition today. It has a concrete headgate that is also in as good a state as the dam. A 2-kilometer main canal originates from this headgate. The main canal has six subcanals. Both the main canal and the subcanals are earthen. Farmers report that there are 71 take-off points on the main canal and subcanals. Sixty of them are made of bamboo tubes, while the rest (11) are made of rubber hoses. In brief, there is one take-off point for every farmer in the Calaoaan system.

Management of the System

The association which manages the Calaoaan system had its beginnings in the early forties. At the time it was founded, the association had 68 members; presently, it has 71. The association is currently headed by a board of directors composed of the chairman, the vice-chairman, the secretary-treasurer, and seven board members. The present chairman has been in office for only a year. He was vice-chairman, when he took over the leadership of the association. The past chairman, who served for 13 years, resigned from the post because of old age. Actually, the two persons simply exchanged positions since the chairman who resigned was asked by the farmers to become the association's vice-chairman.

With the exception of the secretary-treasurer, who is the barrio treasurer of Villa Laurencia, the two other officers do not occupy other positions in their communities nor in some other organizations. Of the

seven board members, on the other hand, one has been an official of the association for 14 years while the other six has been in office for only 4 years. Two of these men are barrio councilmen while the others do not occupy any position other than their irrigation association posts.

The association officials' term of office is unspecified. In other words, the association leaders' tenure ends only when they become incapable of exercising their functions or when they commit wrongdoings. For instance, one of the past chairmen served the association for 20 years and he only retired from his post owing to his failing eyesight. In fact, the farmers expect the present association officials, whom the farmers recognize as good and knowledgeable leaders, to continue holding their positions. These officials serve the association without compensation.

The association does not have an office where its members could meet and conduct important activities pertaining to the association. The lack of office has not hampered the members from holding meetings, however. In 1972 and 1977, the association held two separate general assembly meetings to elect its officials. These meetings were attended by about 90 percent of the association members. Aside from these general assembly-election meetings, the association also hold general meetings after the maintenance activities. In 1977, the meetings were held every Saturday from May to October. Association officials also call a meeting among themselves. They conducted one regular meeting and two special meetings in June and November 1977.

The secretary-treasurer keeps association records, including the minutes of the meetings, membership list, yield of members' farms, records of group work or obras and collection of fines.² These records are available from 1972 up to the present and are complete.

Water allocation and distribution

For the purpose of effecting equal water allocation and distribution, the system is divided into three sectors. These sectors are called East, Center, and West. East sector covers the smallest portion of Calaoaan, with an area of 20 hectares and 18 farmer-users. Center sector (called Calaoaan Centro) covers 60 hectares and 22 farmers-users. The largest sector is West sector, covering Villa Laurencia and Gabor ricelands totaling 70 hectares tilled by 31 farmers.

²There is no record of irrigation fee collections because the association does not require its members to pay an irrigation fee considering that they practice obras.

Each of these sectors is headed by elected officials called directors. These directors, locally referred to as arindador, comprise the board members of the association. East and Center sectors have two directors each, while the West sector which is the largest among the three has three directors. These directors of the different sectors are responsible for allocating and distributing water in their respective areas.

To further ensure equitable distribution of irrigation in the Calaoaan system, water is distributed by rotation. The schedule for rotation is as follows: water is delivered to the East sector every Monday and Tuesday of the week, to the Center sector on Wednesday and Thursday, and to the West sector for the rest of the week, that is Friday, Saturday, and Sunday. Both association leaders and farmers report that this rotation of water use is strictly enforced. Nonetheless, there are quite a number of farmers who disregard the rotation schedule. Farmers who are caught obtaining water when they are not scheduled to receive irrigation are fined (see, section on sanctions).

Maintenance of the system

The maintenance work is supervised by the chairman and vice-chairman, with the help of the latter's son. The son of the vice-chairman is the barrio captain of Calaoaan. He is not an elected association official; nonetheless, the farmers acknowledge him as an association adviser and he actively participates in supervising the conduct of maintenance activities.

In the maintenance of the Calaoaan physical structures, all farmers are required to contribute labor. The maintenance activities are scheduled on Saturdays during the months of May to October. After October, maintenance work ceases because strong typhoons no longer occur to destroy or damage the irrigation structures. Besides, the farmers' rice crop is ready for harvest at the end of October, hence the fields no longer need irrigation.

Sanctions

The actions which are considered against the formal rules of the association and the existing agreement among the farmers are water theft, selling of drainage water, absence from and tardiness during obras, and absence from meetings held after obras.

The farmer who steals water or obtains water when it is not his turn to do so is fined ₱20 for a first offense and ₱30 for a second offense. When he steals for the third time, his case will be brought to

higher authorities, that is, the court. Selling water of the system to an outsider is also against the agreement among the farmer-users. Should this happen, the offender is fined three times the total amount he gets from the sale of water.

Absence from obras or nonparticipation in group maintenance work is another offense that will merit the offender a fine of ₱5 per day of absence if his rice yield is 100 bundles or more.³ The offender is fined ₱3 per day if his yield is 60-99 bundles, or ₱2 per day if yield is less than 60 bundles. Tardiness during obras is also punishable. Latecomers are banned from joining the team and are considered absent. The tardy members must pay the fine applicable to an absentee. Should a meeting be called after maintenance work is done, the farmer who absents himself from this meeting is fined ₱5.⁴

Farmers report that the sanctions are not always strictly imposed. But they also claim that there have been several occasions when the association leaders have enforced the sanctions. These enforcements serve as warning to other farmers that the association leaders will not always allow violations of the existing rules, hence farmers are also careful in observing the present association rules.

³One hundred bundles of palay is about 12.5 cavans.

⁴When a farmer decides to send a representative to work with the maintenance team in his stead, his representative must be from 15-17 years old. A representative who does not fall within this specified age range is not honored. A farmer is excused from attending a scheduled obra when he had been summoned by government authorities, had become sick, or had to attend to a baptism, wedding, or funeral rite, and other important obligations.