

# Analysis of the Consolidation Process of Users' Associations of the Lower Tunuyan River, Mendoza, Argentina

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## ABSTRACT

THIS PAPER AIMS at describing the transformation process that users' associations of the Lower Tunuyan River Irrigation System have undergone since their consolidation.

Conditions prevailing at the time the changes took place and the actions taken by the General Irrigation Department are described in this paper. Mention should be made of the importance that the election of canal inspectors with managerial skills had on the process — a key factor in interpreting the users' proposals and in implementing a policy consistent with their needs.

Finally, the advantages and disadvantages of the new consolidated associations are discussed and some considerations on their future activities are made.

## INTRODUCTION

The General Irrigation Department (DGI) is the agency responsible for all matters pertaining to irrigation in the Mendoza Province.

Its present organization consists of the headquarters office, which is the seat of the Superintendence and the Advisory Council, and the Water Subdelegations, which are responsible for managing each of the provincial rivers on whose waters irrigation rights have been granted.

The irrigation system of the Lower Tunuyan River comprises 94,000 hectares in the northeastern region of the province.

Water is managed at two levels. At the first level, the DGI through its Water Subdelegations, controls dams and primary canals; at the second level, the users' associations, distribute water to the individual farm intakes.

By 1984, there were 194 canal inspections in the Lower Tunuyan River System with serious administrative and operational difficulties. Based on a new philosophy that would lead to a decentralized management, the DGI undertook their consolidation in 1985.

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<sup>44</sup> General Irrigation Department, Mendoza, Argentina (1991).

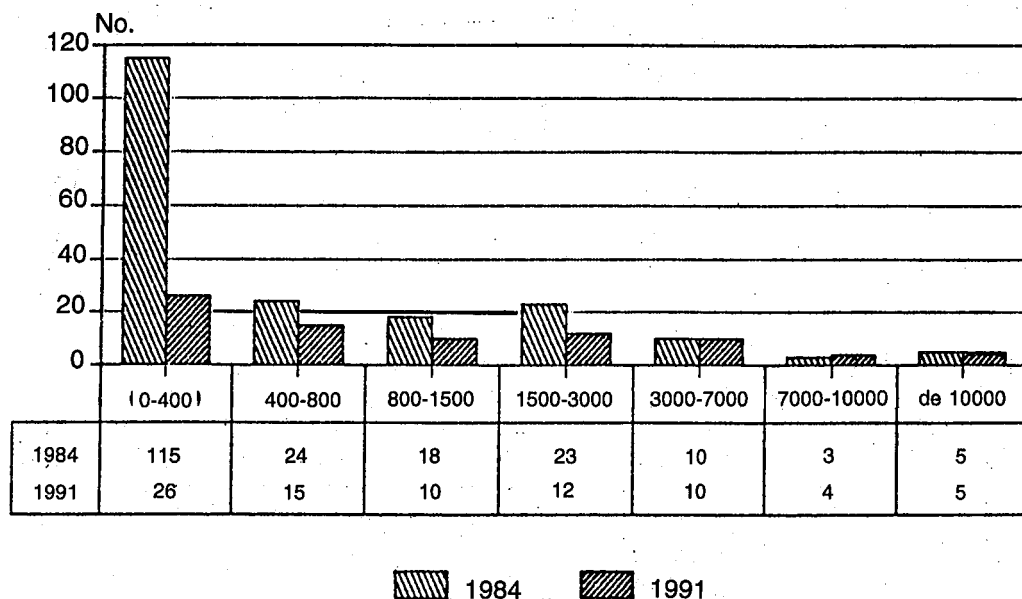
## THE TRADITIONAL MODEL

Figure 1 shows the 194 canal inspections existing in 1984 in the Lower Tunuyan River command area, classified according to size.

It might appear that the large number of small canal inspections could be explained by the users' interest in managing their own organizations. This, however, was not the case. The excessive atomization of the inspections left little decision-making authority to the administrators.

Often a farmer accepted the responsibility of heading a users' association merely because of tradition and because of the incentive of additional benefits accruing from his authority to decide on water distribution.

Figure 1. Variation in the number of canal inspections between 1984 and 1991.



Furthermore, the regular meetings summoned by the DGI for the discussion of matters pertaining to the operation of the associations were often attended by as few as 10 percent of the inspectors.

The inspections were in a permanent state of isolation. In many cases, nobody knew who the inspector was. The DGI did not know how inspections were being administratively or operationally managed. As the inspections were unable to solve the users' problems, their demands were submitted to the DGI.

It was impossible to work on or to improve the irrigation system either because of the large payments a small number of beneficiaries would have to make, or because the small users' associations did not have the technical capacity to undertake such works.

The lack of participation and the prevailing disorganization impaired the accounting and financial condition of the inspections' accounts, which was made worse by the failure to collect irrigation water rates from defaulting debtors.

The above problems, inherent in small users' associations, called for a change in the size of the traditional canal inspections.

## THE NEW MODEL

A new structure of users' associations was devised in 1985. Chambouleyron (1985) proposed a transformation of the traditional inspections into irrigation companies, with command areas ranging between 10,000 and 15,000 ha instead of the traditional 100 to 500 ha.

The organizational structure would be similar; i.e., they would be autonomous, they would prepare their own budgets and they would issue their own regulations in accordance with the powers granted them by the Water Law.

These companies would be headed by a "manager," who would be the highest authority in the users' association, assisted by an accountant, some employees and the gate operators who are in charge of distributing water.

Management responsibilities could be assigned to a company, e.g., an electric, fruit-growing or viticultural cooperative, which — apart from being a canal user — was organized in such a way as to be able to discharge the duties of a manager.

It was considered most important that the manager be a person with management training so that he could cope with the complex tasks assigned to him, such as:

- \* To administer the area under his control; establish water delivery turns, supervise the irrigation network, organize canal maintenance and determine which works should be executed.
- \* To undertake afforestation along the canals in order to obtain the highest possible returns from the timber, maximizing income and thus permitting the setting of low irrigation water rates.
- \* To purchase or rent the machinery needed for irrigation and drainage system maintenance. Alternatively, machines could be borrowed from the DGI.
- \* To set up workshops and purchase tools to keep the machinery in working order.
- \* To purchase vehicles, two-way radios, and any other technical equipment needed for the efficient management of the facilities.
- \* To bill users and to collect the irrigation water rates by checking the list of debtors, reporting abandoned farms, visiting and sending reminders to users who are in arrears of payment, and reporting annual variations in irrigated area to the DGI.

- \* Since the manager is a paid person, he would have to be in close contact with the DGI to implement the most appropriate water policies.
- \* To actively participate in cooperative movements and to organize meetings in irrigators' communities in order to accumulate experience on water management and administration.

This, in brief, was the new structure devised for the users' associations.

## IMPLEMENTING THE UNIFICATION OF CANAL INSPECTIONS

The activities performed by the DGI to unify users' associations were of two types: a) promotion and b) implementation. Promotion activities were carried out at headquarters by an interdisciplinary team that provided logistic support through the organization of meetings addressed to the technicians of the Water Subdelegations. Policies and objectives were discussed and methodologies were suggested. Training courses on different techniques, such as group dynamics, were also held.

An evaluation of the results obtained in the course of promotion was performed by this promoting group, who always saw to the requirements of the Water Subdelegations.

The second group of activities, i.e., implementation, was carried out by the Water Subdelegations themselves. In the case of the Lower Tunuyan River, it was deemed necessary to hire a professional — as a facilitator — to speed up activities and to avoid delays in the unification process.

In order to define the areas comprising the new canal inspections, the area irrigated by the secondary canal was the factor considered.

The first attempt was carried out on the "Reduccion" Main Canal, where the twelve existing associations were consolidated into one inspection. The traditional associations all suffered similar problems despite the large area (some 14,000 ha) over which they were spread. The methodology applied consisted in explaining the proposal at a general irrigators' assembly.

It was necessary to hold several meetings. The original proposal improved with suggestions put forward by the users themselves, who began to realize the importance of the new opportunity they were given to manage their own organization. Finally, the incorporation papers of the new inspection were signed and approved by all the inspectors.

A new list of authorities was submitted for approval to the DGI by the resigning inspectors, who were organized into an advisory committee.

Curiously enough, the main obstacle to the reorganization of the canal inspections was the organization of the DGI itself, whose legal and administrative requirements made it difficult to achieve the objective.

In January 1986, the inspection of the "Reduccion" Main Canal was set up — a milestone in the process of reorganization.

## **CONSOLIDATION OF THE NEW ADMINISTRATION**

The "Reduccion" Main Canal Inspection was the first to be unified in the Mendoza Province. The first steps of the new administration were firm and unflagging. One of its most significant achievements was the fact that there was money in its bank account from the transfer of funds of the former associations. This made it possible to allocate funds to meet the most urgent requirements in the area served by the new inspection. In the past, the funds remained idle and isolated in each small inspection.

After a short time, the new administration hired an agricultural engineer to advise the users on irrigation matters, to organize and improve water distribution and to identify the required works.

The gate operators' work areas were reorganized on a more rational basis and a reduction in labor costs was attained. Later on, two jeeps were purchased to drive along the service roads close to the canals.

A contract was signed in which the Water Subdelegation lent a pick-up to the inspection, which undertook to repair the vehicle in order to use it in matters pertaining to the management of the users' associations. Soon after, the service rendered to users improved substantially.

The disappearance of complaints presented to the Water Subdelegation is evidence of the improved service, as all problems were sent to and solved by the inspection itself.

Another important activity was the reforestation of the margins of earthen canals in the area served by the association. More than 8,000 poplars were planted, which increased the economic potential (timber use) of the association in the area.

The annual canal cleaning was organized more efficiently. The inspection hired a crew of workers to desilt the canals and to restore them to their original shape, paint the sluice gates with antioxidant, and repair their mechanisms.

The example set by this new users' association soon aroused the interest of neighboring organizations. Despite some doubts and fears, they became enthusiastic about the innovations introduced, which brought about concrete and real improvements.

The consolidation of the "Constitucion" Main Canal (command area: 10,000 ha) a few months later came as no surprise. Soon after there followed the consolidations of the Montecaseros Canal inspections and of the Middle Section Canals, with command areas of 9,000 and 10,000 ha, respectively.

Three additional associations in the Lower Tunuyan River have recently been consolidated: the San Martin Canal, the Norte Alto Verde Canal and the Sur Alto Verde Canal. The objective pursued is to have this irrigated area managed by no more than 15 or 20 users' associations.

## **GROWTH SYMPTOMS OF THE NEW INSPECTIONS**

The principle of equality before the law took root in the inspections. They launched an aggressive campaign to collect irrigation water rates with the intention of rewarding the farmers who pay on time and of collecting old debts. Up to that time, it had not been possible to cutoff the water supply to overdue users because the system was not properly organized. The new associations have cutoff the water supply to defaulters. This procedure is still in force and has proved to be highly effective.

Another important activity carried out by the new associations was the construction of works. Upon the request of the Lower Tunuyan River inspections, works have been constructed with the

technical assistance of the Water Subdelegation. This type of small constructions, with individual costs under US\$10,000 are undertaken by the inspections themselves, which purchase the materials and hire the necessary labor.

In the last two years, it has been possible to construct an important number of minor works, such as gauging stations, sluice gates, dividers, lining, etc., at a cost lower than if public tenders had been invited.

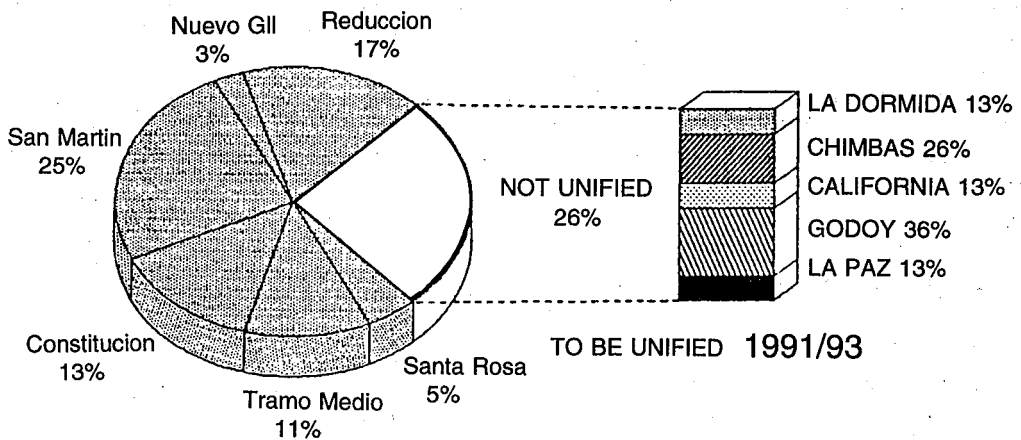
The adoption of opportune measures, such as switching from permanent flow in the main canals to the rotation system became possible thanks to the new structure. This is what happened in 1990 when water was very scarce. The decision, endorsed by the inspectors, represented a change that had not been made in thirty years. This would not have been possible with the traditional associations.

The percentage of DGI funds lent to the former Lower Tunuyan River inspections, which paid them back from the collection of irrigation water rates, used to be in the order of 22 percent. Pressure exerted by the new associations increased that percentage to 28 percent which, in relative terms, represents an increase of 27 percent in fund availability.

### WHAT REMAINS TO BE DONE

At present there are two types of structures on the Lower Tunuyan River: consolidated canal inspections and traditional canal inspections. Figure 2 below describes the situation at present.

Figure 2. The process of unification of the inspections.



The objective is to complete the consolidation of inspections in two years' time. With this consolidation it will be possible to have an integrated and rational river management with no more than 20 organized inspections.

The progress made in the reorganization of canal inspections is irreversible, but it is evident that changes in the organization of the DGI itself are required for the consolidated inspections to have more economic and operational autonomy.

Often, an important fact is the great distance between the area where irrigation service is rendered and the seat of the DGI. An effective economic decentralization will help strengthen users' management.

Up to now, the administration of funds has been centralized in the Superintendence, which deposits the corresponding funds in the inspections' accounts. The associations of the Lower Tunuyan River have requested that their funds be automatically credited to their accounts by the banks as soon as the irrigation rates are collected. This would ensure a secure and real flow of money and would encourage overdue users to pay their debts.

Another aspect that should be promoted is the construction of works. The consolidated inspections have proved to be effective in performing this task with local skilled labor.

The growth of both users' associations and Water Subdelegations should be accompanied by a reduction in the central organization. If such a reduction is to be achieved, it will be necessary to transfer human and material resources to avoid overlapping structures.

The role of each organizational level must be defined. At the users' level — the first level — the inspection should operate the system with all the necessary human and material resources that help to ensure a direct and prompt service. At the second level, the Water Subdelegations would advise the inspections under their jurisdiction on technical and accounting matters. To this end, they should have a staff consisting of engineers, accountants, land surveyors, water gauging employees, etc., with modern means of communication and computers.

At the third level, the Superintendence would be responsible for the general management of all Water Subdelegations. It would perform permanent administrative, technical and accounting evaluations and controls of the Subdelegations. It would also devise the overall water policy in keeping with the provincial policy.

## CONCLUSIONS

The authors of Mendoza's Water Law were wise men. The norms drafted 107 years ago are still relevant. Furthermore, it can be said that it is necessary to "return to the original sources" and adhere to the original philosophy of the law — albeit with the logical modifications that physical, social, environmental and technical changes demand.

The users' organizations of the Lower Tunuyan River accept the challenge, and what is more, they demand it. They realize that the significance of the activities carried out so far cannot be ignored and that the policy devised should be followed; otherwise, a state of anarchy would arise that would lead to the loss of the system and to an inevitable deterioration of the irrigation network.

The Lower Tunuyan River System has a capital represented by its users' associations. The implementation of the measures set forth in this paper — increase the number of consolidated inspections and achieve an economic and operational decentralization — will improve their performance and will make it possible to lay the foundations for a new General Irrigation Department.

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