

Large-Scale FMIS in Morocco

Farmer-managed irrigation systems in the Tessaout Plain of Morocco are among the largest in the world, with command areas ranging up to 12,000 ha. Today these large-scale diversion systems, built and operated by farmers for many centuries, are being incorporated into still larger agency-managed irrigation systems administered by regional development authorities (ORMVAs -- "Organizations Regionaux pour le Mise en Valeur Agricole").

The indigenous organizations that have operated and maintained the existing systems are a resource which can play an important role in managing the new, enlarged systems. How to facilitate the transition from pure farmer-management to a situation of joint management, is the subject of a new study being undertaken by A. Herzenni of the Institut Agronomique et Veterinaire - Hassan II.

Since the establishment of an ORMVA in the Haouz Plateau in 1966, it has grown in two stages. First, the original command area around the city of Marrakech was developed. Next, a 40,000 ha section of the Tessaout Plateau, called the Tessaout Amont, was added. This section included a number of large-scale FMIS, some of which retained their basic identity after incorporation, while others were thoroughly reconstructed. Today, work is starting on a third phase of expansion, into the Tessaout Aval, an area of roughly the same size and features (e.g., many large existing FMISs) as the Tessaout Amont. Research on how best to build upon the organizational resources of the new T-Aval area will begin by documenting and understanding the experience of the past decade in T-Amont.

The need for new physical structures in the T-Aval region stems from the diversion of the previous water source. The river formerly supplying water to the T-Aval has been tapped further upstream by a new, largely automated canal which carries water 70 km to the west, to supplement the original Haouz Central command area. The water rights of farmers in the T-Aval will now be met by another new canal from the East. At the same time, the small seasonal rivers (Oueds) in the T-Aval catchment are being harnessed more thoroughly, by building small dams.

About 90% of the land in T-Aval is owned collectively, and nearly all cultivable land is already in production, a good portion of it (ca. 25%) in irrigated olives. Water is often "celibataire" (not tied to the land) so trading of water and land can be done separately. As part of the work to prepare the area for improvements, ORMVA staff are preparing lists of individual water and land rights, so that existing water rights can be ensured under the new project. Physical improvements will be limited to secondary and some of the tertiary canals; in general, the improved canals will follow their existing channels. The standard construction will be elevated semi-circular concrete channels, which are ubiquitous in Moroccan irrigation systems. Existing land tenure patterns will not be directly affected by the project; most of the collectives have land in 2 or 3 different locations, and each member of that collective has land in each place. This situation will remain the same, along with the organizational structure of the collectives. Thus, the ORMVA staff will interact with local leaders who occupy traditional positions of authority within their respective collectives. Other existing organizations, in addition to traditional water associations, include Associations Syndicats Priviliges (ASP) established during the days of the Protectorate (pre-1956). These play

an intermediary role between farmers and the ORMVA.

Diversification is taking place from grains into orchards, and particularly olive orchards, which require smaller quantities of water over the entire year. Each of the 13 existing FMIS in the T-Aval area takes water from an intake along a 40 km stretch of the main Oued Tessaout, and commands an area of 300 - 12,000 ha. There are 28 sectors (some systems comprise more than one sector), each of which has water rights which must be respected under the new project. Each system's annual water debit has been calculated based on 30 years data, to see how much water is diverted into the main canal, and then how much water is actually delivered into the outlets. The difference between the two can be great; in one case, the water delivered to the outlets was calculated as 26% the amount diverted at the head of the canal.

The new management structure of T-Aval will rely on the participation of farmers, but the existing organizational structure will need to be adapted to new needs, e.g., water rotations. A 15-day rotational schedule is envisaged in T-Aval, to be implemented with the help of a 2-tier committee structure which would cross-cut existing organizations and would include both farmers and agency officials. Since farmers are generally more willing to take agricultural risks than are the agency field staff, some compromises will have to be made regarding timing of deliveries and extent of irrigated areas. National legislation governing the rights and duties of water user organizations is currently being implemented and will help strengthen the role of these committees. The Tessaout Plain is not the only area in Morocco where large indigenous canal systems are found, but it is one of the few places where these systems have thus far remained under farmer-management. That

situation is fast changing; the irrigation traditions of the Tessaout are being transformed, but important elements-- both physical and organizational -- will contribute to the working of the new expanded irrigation system.

- David Groenfeldt (based on a recent visit hosted by Rachid Abdellaoui and Abdellah Herzenni)