

ROMANIA - STRENGTHENING OF WATER USERS ASSOCIATIONS CASE #154

Institutional changes to increase the efficiency of irrigation through farmer participation and demand management

ABSTRACT

Agriculture is an important sector in Romania's economy, currently providing 14% of GDP and 37% of employment. Prior to the 1989 revolution, agriculture was a strong export sector but today food imports are necessary. The shift from a centralized economy in 1990 to a market-oriented system and the redistribution of land (from state farms to the former owners) disrupted agriculture and the organization and maintenance of irrigation systems. Although the majority of cropped area is rain-fed, droughts are common in the semi-arid climate especially during the summer growing season and yields are uncertain without irrigation. The World Bank has scheduled a loan to Romania for irrigation rehabilitation and reform in the Danube River valley. Complementing this effort, USAID is funding a project to develop and strengthen water users associations (WUAs) to own and operate the equipment for on-farm water distribution. Effective WUAs are a critical component of restructuring Romania's irrigation systems and increasing the efficiency of irrigation through farmer participation and delivery of irrigation water on demand. Through technical assistance and training, USAID is providing institutional strengthening to help farmers organize into WUAs and gradually take charge of managing on-farm irrigation operations.

A Water User Associations Law was recently adopted providing that voluntary, non-profit WUAs should be formed to own and operate the equipment for on-farm water distribution. Typically, WUAs should consist of members owning or leasing adjacent plots of land within the hydraulic area covered by an irrigation pumping station. Government policy is to gradually reduce irrigation subsidies and eventually WUAs should be sustained on water charges and membership fees collected from their members. This requires WUAs capable of providing cost-effective irrigation services and an agricultural system capable of commercial production.

Ongoing training and technical assistance is supporting WUAs and relevant government agencies with the tasks and duties regarding WUA organization, management, financial administration, and operation and maintenance (O&M) of the irrigation system. Training of farmers will explain WUAs and the rights and obligations of WUA members. WUAs need new approaches to O&M and financial administration to achieve more cost-effective irrigation. Farmers must be organized to formulate cropping and irrigation plans and monitor implementation. The ability of WUAs to implement a cropping pattern that yields market returns, covers the cost of irrigation, and increases farmer incomes will be key to their long-term success. Access to credit to obtain capital for repair and replacement of irrigation equipment is also important for sustainable agriculture.

Lessons Learned:

Lessons from the early stages of WUA development include:

Appropriate legislation and regulations are necessary to allow all stakeholders (farmers, WUAs, government agencies) to carry out their respective roles and facilitate farmer participation for demand-driven irrigation water management.

Irrigation subsidies may be needed to support agriculture until farming efficiency improves and returns from the sale of agricultural products can cover costs.

The irrigation subsidies should be targeted directly to water users with transparent linkages between the government agencies and the water users.

Irrigation equipment transferred to WUAs must be in good condition to translate potential into effective demand for irrigation water and support sustainable agriculture.

WUAs and their members need knowledge and experience to make management decisions associated with irrigated farming, such as assessment of crop water requirements and irrigation scheduling.

Importance of Case to IWRM:

Developing a framework to replace a central approach with a participatory, demand-driven approach for more sustainable water resources management is a long and complex process. Local farmers, through participation in water users associations, were identified as the appropriate level to implement cost-effective decisions for on-farm irrigation and to better coordinate regional management of water and the rich agricultural soils of the Danube River valley.

Main Tools Used

- B1.9: Civil Society Institutions and Community Based Organizations
- C3.1: Improved Efficiency of Use
- B2.1: Participatory Capacity and Empowerment
- B2.2: Training to build capacity in water professionals

MAIN TEXT

1 Background of Issues and Problems

Romania's Unique Irrigation System

Romania has fertile soils, with especially rich soils in the Danube River valley, and in the past was a major exporter of agricultural products, especially grains. Over 9 million hectares are arable. Major crops are wheat, maize, barley and oilseeds. The reclaimed area for irrigation covers around 3 million hectares, supplied mainly from the Danube River through huge pumping stations and complex irrigation structures.

Nearly 3 million hectares of irrigation infrastructure were constructed in Romania between 1965-1989. The irrigated area is divided into 104 irrigation schemes that range from 2,000 to 158,500 hectares. Most irrigation schemes are in the Danube River valley. Romania's irrigation system is uniquely different from most countries because it is divided into three terraces. Water is delivered to the first terrace through a distribution canal after a primary pump station lifts water from the Danube (or a tributary) and a main pumping station lifts water to the terrace. Pressure pump stations (SPPs) and buried pipes supply water to the fields. Higher terraces are supplied by successive second and third lift pump stations on the main supply canals. The cost of pumping water to the higher terraces is very high and many of these are currently not irrigated. Within the fields, water from the SPPs is distributed through buried pipes to hydrants located in the fields at fixed intervals. Farmers take water from the hydrants and irrigate their crops by attaching hand-move distribution laterals with overhead sprinklers. Over 2.8 million hectares of the total irrigated area is designed to use sprinklers.

Romania's irrigation system was initially used on state farms and agricultural production cooperatives to produce large quantities of grain with no consideration of the pumping costs or the long-term replacement costs of the pumps and distribution system. The state owned, operated and maintained the main pumping and distribution system. Furthermore, ownership and O&M for the on-farm irrigation pumping and distribution system also rested with state farms and cooperatives.

Land Privatization and Redistribution

Since 1990, agricultural land has been largely privatized and redistributed to 6 million owners in fragmented plots, and it has become difficult to operate the system. The irrigation infrastructure has declined most dramatically on the former large state farms and cooperatives and it does not correspond to the ownership structure and farming methods of small private farmers (1-3 hectares). While most of the land is now private, the ownership of irrigation infrastructure and its operation and maintenance (O&M) remains with the state, under the auspices of the National Society for Land Reclamation.

Once the land was returned to its previous owners in many fragmented plots it became very difficult to operate and maintain the system. In addition, on-farm equipment and mobile pumps were destroyed, stolen or had outlived their effective useful life. After 1991, the irrigated area fell sharply and since then has fluctuated between 250,000 and 700,000 hectares annually. Annual irrigation demand has dropped to around 1,500 cubic meters per hectare applied, on average, in two applications from the previous 2,500-3,000 cubic meters per year.

The Need for Rehabilitation and Institutional Strengthening to Boost Agricultural Productivity

Rehabilitation of Romania's irrigation infrastructure is necessary to fully utilize the potential of the existing irrigation schemes and arable soils. The rehabilitation, however, cannot be implemented without effective institutional changes in irrigation management, through the transfer of on-farm water management to water users and their active participation in the O&M of on-farm equipment and irrigation infrastructure.

To facilitate routine O&M and boost reliability of water delivery systems, a Water Users Associations Law was adopted in October 2001 providing that voluntary, nonprofit WUAs should be formed to own and operate the equipment for on-farm water distribution. Typically, WUAs should consist of members owning or leasing adjacent plots of land within the hydraulic area covered by an irrigation pumping station. On-farm irrigation equipment (usually SPPs, underground pressure pipes with surface hydrants, and movable laterals with sprinklers) would be transferred from the state to registered WUAs. The GOR would then begin to direct irrigation subsidies to water users instead of the National Society for Land Reclamation after establishment of WUAs. Government policy would gradually reduce irrigation subsidies and eventually WUAs would be sustained on water charges and membership fees collected from their members. This requires WUAs capable of providing cost-effective irrigation services and an agricultural system capable of commercial production. Currently, the legal framework does not clearly state the extent of irrigation management transfer so the new ownership structure and responsibilities for the irrigation system are still in transition due to the need to revise and update the WUA law and related statutes.

2 Description of Actions Taken

Rehabilitation of Irrigation Infrastructure

Romania's Ministry of Agriculture, Food and Forests (MAFF) and the National Society for Land Reclamation have committed to an agricultural restructuring program, and the GOR requested the World Bank and other international donors to assist in the rehabilitation and restructuring of the irrigation sector. The World Bank has scheduled a \$50-100 million loan to GOR for the Irrigation Rehabilitation and Reform Project (IRRP). The loan would provide resources to rehabilitate between 150,000-170,000 hectares of irrigated area.

The proposed World Bank loan will include two components 1) to rehabilitate public sector irrigation infrastructure, and 2) to restructure the irrigation sector in a way that draws clear lines between the public and private sectors and assigns clear rights and responsibilities to each. Rehabilitation is planned only for the irrigation schemes where farmers are willing to organize into WUAs. The World Bank loan foresees a continued public responsibility under the auspices of an appropriately restructured National Society for Land Reclamation to ensure water supplies to the SPPs in the irrigation systems. At that point, WUAs are expected to take over the responsibility of coordinating irrigation O&M and cost recovery.

The GOR has selected two irrigation schemes to comprise the Phase 1 area for IRRP. The Sadova-Corabia scheme is located in southern Romania on the Oltenia Plain on the sandy soils along the Jiu River and in the Danube valley. The selected IRRP Phase 1 area consists of 40,310 hectares, divided between the Dolj and Olt Districts on the lowland and on the first terrace of the Danube. Nine legally established WUAs currently exist in Sadova-Corabia, of which the Dabuleni WUA was the first one legally formed in Romania in January 2000. The

Nicoresti-Tecuci scheme is located on the Siret River in the Galati District and the selected IRRP Phase 1 area consists of 11,031 irrigable hectares. Five legally established WUAs currently exist in the Nicoresti-Tecuci scheme.

Development of Water Users Associations

Since the IRRP will focus rehabilitation efforts only on irrigation schemes supported by farmers in WUAs, USAID began funding the 3.5-year Water Users Association Development Project (WUADP) in 2002 to help promote and develop WUAs in the World Bank IRRP areas.

WUADP's goal is to provide technical assistance and training to support development and strengthening of WUAs in Romania. The key objectives include:

- Complementing World Bank investments in irrigation system rehabilitation by systematically promoting and building the capacity of WUAs,
- Supporting the commercialization of Romania's agricultural sector,
- Strengthening the capacity of GOR to provide a legal and regulatory structure that supports the establishment of viable WUAs, and
- Supporting establishment of an advisory service that can provide information and technical support to WUAs on an ongoing basis.

Currently, GOR responsibility for overseeing the creation and support of WUAs is spread among several organizations and offices and is not clearly defined. Roles and responsibilities need to be defined more carefully to ensure that effective support is provided in the long term. In addition, the legal and regulatory framework governing the creation and management of water user associations is still subject to revision. Romania's current WUA law is GEO (Government Emergency Ordinance) No. 147/1999 on Irrigation Water Users Associations approved by Law No. 573/2001. WUADP conducted a review of legal and institutional issues related to the formation and operation of WUAs and developed specific recommendations to address 10 major legal and institutional issues in Romania. WUADP is working with MAFF to develop a plan for making the necessary improvements to the existing regulatory framework.

Both USAID and the World Bank support revision of the current WUA law prior to implementation of IRRP. The World Bank has emphasized the linkages between WUA development and irrigation rehabilitation and has stipulated that WUA formation must reach a threshold level of covering 60% of the area covered by the IRRP Phase I loan before IRRP can begin. Strengthening the capacity of GOR to support the establishment of viable WUAs depends on developing an appropriate legal and regulatory structure.

3 Outcomes

Efforts to Improve Governance

Many of the early WUAs had fundamental weaknesses and did not make a clear distinction between the three main WUA bodies – the General Assembly, the Management Board, and the Executive staff – and their respective roles. In some cases, members of the Management Board were also paid Executive staff. Mixing governance with management creates a clear conflict of interest. Many of the newly formed WUAs are only marginally participatory organizations. Sustainable WUAs must have an organizational structure that clearly separates governance from management. Improved legislation to define roles and responsibilities for all stakeholders associated with WUAs will be necessary to help guide and regulate effective, demand-driven approaches to irrigation water management. WUADP is working with the Management Boards to solve these WUA organizational problems and to ensure that WUAs represent all the water users in the service area.

WUADP is providing ongoing training and technical assistance to support WUAs and relevant government agencies with the tasks and duties regarding WUA organization, management,

financial administration, and O&M of the irrigation system. Training for farmers is being conducted to explain WUAs and the rights and obligations of WUA members. Training will help support WUAs to find new approaches to O&M and financial administration to achieve more cost-effective irrigation. It is also addressing ways to help farmers become better organized to formulate cropping and irrigation plans and monitor implementation.

Linking Irrigation WUAs and Broader Agricultural Associations

One of the major responsibilities in irrigated farming is the assessment of crop water requirements and irrigation scheduling within the entire river valley. However, the current responsibility of WUAs is limited to local management of on-farm irrigation equipment. Broader decisions on other farming operations rest with farmers working individually or through an Agricultural Association. In parallel to and often independently of WUAs, the strengthening of Agricultural Associations is also developing in Romania under Law No. 36/1991. Many farmers have already recognized that land consolidation is critical if they want to increase their yields and pay for irrigation O&M costs. Fragmentation of farmland restricts the ability to use the irrigation system effectively as well as the available agricultural equipment and machinery for cultivation and harvest. Consolidation and joint management through forming agricultural associations will help achieve more efficient commercial farming operations that can generate sufficient income to cover the costs of irrigation.

In the pilot areas, there are a relatively large number of agricultural associations compared to WUAs. Some WUAs have developed with a structure where members of the General Assembly are primarily formal Agricultural Associations and informal agricultural associations along with a few private companies and some individual farmers. Often in these cases, a large percentage of the land is farmed by the associations for absentee landowners (who receive a percentage of gross production) and a smaller percentage of the land belongs to individual associates who cultivate the crop through the harvest after the association prepares the land and plants the crops. WUADP is therefore working to strengthen agricultural associations because the ability of WUAs to implement a cropping pattern that yields market returns, covers the cost of irrigation, and increases farmer incomes will be key to their long-term success.

Advisory Services to Support WUA Development and Management

Currently, no one single entity is responsible for providing ongoing technical assistance to farmers and WUAs. Ensuring that WUAs are viable institutional arrangements over the long term requires a support structure that can provide technical information and training to WUAs on an ongoing basis. WUADP is evaluating options for establishing an advisory service to support both WUA development and irrigation system management. WUADP's recommendations for possible organizational structures for the advisory service, alternative institutional arrangements and types of services this institution would offer WUAs are being discussed with the various stakeholders.

4 Lessons Learned

Conditions for Effective WUAs

Developing a framework to replace a central approach with a participatory, demand-driven approach for more sustainable water resources management is a long and complex process. Farmers were identified as the appropriate level for implementing decisions for on-farm irrigation and to better coordinate management of water and the rich agricultural soils of the Danube River valley.

Lessons from the early stages of WUA development in Romania include:

- Appropriate legislation and regulations are necessary to allow all stakeholders (farmers, WUAs, government agencies) to carry out their respective roles and facilitate farmer participation for demand-driven irrigation water management;
- Irrigation subsidies may be needed to support agriculture until farming efficiency improves and returns from the sale of agricultural products can cover costs;
- The irrigation subsidies should be targeted directly to water users with transparent linkages between the government agencies and the water users;
- Irrigation equipment transferred to WUAs must be in good condition to translate potential into effective demand for irrigation water and support sustainable agriculture;
- WUAs and their members need knowledge and experience to make management decisions associated with irrigated farming, such as assessment of crop water requirements and irrigation scheduling; and
- Access to credit to obtain capital for repair and replacement of irrigation equipment is also important for sustainable agriculture.

Even the best organized and most well trained WUAs will not be sustainable without a means to take water from the hydrants and deliver it to the fields. After WUADP was initiated, farmers, WUA leaders, and staff of the National Society for Land Reclamation stated that there is an acute shortage of on-farm irrigation equipment. Initial estimates were that the area covered by on-farm irrigation equipment is only around 400,000-500,000 hectares. Without additional on-farm equipment, this is the largest area that could be irrigated regardless of the establishment of WUAs and rehabilitation of the irrigation system. The World Bank loan will not be used to finance field irrigation equipment, so farmers must find access to resources to purchase this equipment to encourage commercially viable agriculture within the areas covered by WUAs.

Replicability

It is widely accepted that private farmer-managed irrigation is more effective and economical than systems run by state agencies, particularly at the on-farm level. Transfer of management and ownership from state agencies to water users typically leads to positive impacts on the entire agricultural system. Farmers are motivated by their direct responsibilities and participation in O&M of irrigation infrastructures and the typical results are more efficient and equitable use of water and higher agricultural production.

Under a transition from state farms and cooperatives, it may take much longer for farmers and water users to obtain the knowledge and experience required to make the necessary management decisions. In Romania, farmland was taken over in the 1940s and operated by the personnel of state farms and cooperatives. Now that the land has been redistributed to the former landowners or their heirs, most of the private landowners have no experience in agriculture and the average lot covers less than two hectares – often barely identifiable in the middle of uniform fields covering up to hundreds of hectares. Comprehensive reform in both the agriculture and irrigation sectors will be necessary for Romania to replicate the well-known benefits of participatory irrigation management.

5 Links to Additional Information

Contact:

Ken Rubin, PA Government Services, 1750 Pennsylvania Avenue NW, Suite 1000, Washington DC 20006, USA; 202-442-2377; ken.rubin@paconsulting.com

Larry Nelson, Chief of Party, or Roxana Ionescu, Deputy Chief of Party, Water Users' Associations Development Project, PA Government Services Inc., 4, Corneliu Coposu Blvd., Building 105A, Entrance 3, Floor 7, Apt. 88, Bucharest-3, Romania; +(40.1) 326 82 18; larry.nelson@paconsulting.ro or roxana.ionescu@paconsulting.ro

References and Web Sites

International Network on Participatory Irrigation Management website: <http://www.inpim.org>
or <http://www.paconsulting.ro>

Electronic Handbook on Participatory Irrigation Management, Environment and Natural Resources Division, World Bank Institute, of the World Bank:
<http://www.worldbank.org/wbi/pimelg>

PA Government Services, Water Users Association Development Project web site:
<http://www.wuadp.ro>