



**CASE STUDY**

# Morocco and Algeria: Irrigation in the Mediterranean - strengthening small and medium scale farmers



## Summary

In the Maghreb region food security relies mainly on irrigated agriculture. Centralized water management which lack water users' involvement causes problems in the quality and quantity of the resource. Alternative models, which include the management of water by users, have strengthened the innovation of small scale irrigation systems and supported the initiation of cooperatives and networks. This case illustrates the value of small scale solutions, cooperation and training.

## Background

In the Maghreb region, like in other regions of the world where food security relies mainly on irrigated agriculture, managers and users of water are faced with growing problems relating to the quantitative and/or qualitative management of this resource. The governments, through considerable and ambitious programs (Plan Maroc Vert: PMV, Plan National pour le Développement agricole: PNDA, etc.) show a will to support systems that consume less irrigation water in order to save this resource, and to reinforce agricultural value chains (in particular cereals, milk, vegetables and citrus).

However, it should be noted that governments have experienced several failures linked to the centralized management of water, which generally has not involved users. Alternative models, in particular the management of water by users themselves, are being proposed to allow agriculture to keep producing as much or even more, in a context of increasing

population and rising food demand.

Moreover, climate change could impact the availability of irrigation water in the future. Thus, saving irrigation water while in the same time strengthening agricultural value chains is key to improve food security in the Maghreb. Collective action and learning are indispensable and need to innovate continuously to adapt.

In this context, several projects of "research-action" have been jointly designed in a cooperative Europe/Maghreb framework and dedicated to agricultural water management. These projects aim in particular to extend the dialogue, which was previously confined quasi exclusively to exchanges with administrative services, to farmers themselves. This dialogue was created with the use of various tools developed, tested, adopted and institutionalized by researchers and their partners on the field. These tools and this research posture contributed to a mutual knowledge and recognition and to the confidence of a network of researchers and farmers who work in cooperation.

Converting from gravity irrigation systems to drip irrigation, less water-consuming systems, is a favored way in Southern Mediterranean countries. Nevertheless, drip irrigation is an expensive option that requires training, technical support and changes in agricultural practices, and in some cases shifting to higher added value products.

However, the largest share of irrigated farmland is held by small and medium scale family farmers, who have the highest potential for development but do not have the same resources as large farms. In this context, supporting small scale irrigating farmers is a priority to save water and reinforce agricultural value chains.

## **Actions taken**

The Network of Farmers in Mediterranean Irrigated Systems (RIM by its French acronym) is a pilot project that was initiated focusing on farmers' vocational training for water savings. The initiative also focused on the development of agricultural value chains, to the benefit of family farmers' organizations in the Maghreb region. Two phases of the project have been carried out in Morocco (phase 1: 2008- 2009 and phase 2: 2010-2011), while in Algeria, the first phase was between 2010-2011. Innovative training methods have been implemented i.e. participative diagnosis to identify the needs of farmers, validation and partnership with existing networks of farmers and producers' organizations. More so, involvement of trainers from various backgrounds, and setting up of training sessions by farmers themselves.

The RIM methodology relies on:

1. training based on a participative diagnosis allowing to identify and support the formulation of farmers' needs for training;
2. an iterative reflection and a systematic educational evaluation of training sessions;
3. the involvement of trainers from various backgrounds: farmers themselves (training by peers), researchers, private sector, consultancy firms;
4. farmers' organizations progressively taking charge of the setting up of training sessions.

This method is a collective and voluntary construction based on exchanges of knowledge and know-how between peers. It is first a posture that recommends a joint construction of knowledge, an active involvement of existing social, professional, and cultural networks,

and a support adapted to farmer's needs and accepted by them.

The RIM project results from the collaboration of various actors:

1. farmers' organizations in Maghreb. In Morocco, farmers' organizations involved in the training programs are gathered in the association Raccord (Réseau d'accompagnement des coopératives et organisations rurales de développement). French farmers (e.g. the Chambre d'Agriculture du Lot) have also been associated to the project, for exchanging experience with their counterparts from Maghreb;
2. research institutes involved in the water sector in the south and the north of the Mediterranean area: Ecole Nationale d'Agriculture de Meknès (Morocco), Ecole Nationale Supérieure Agronomique d'Alger (Algeria), Cemagref, Cirad, Montpellier SupAgro-Institut des Régions Chaudes, Unité Mixte de Recherche G-eau (France);
3. the FARM foundation and AFEID (French Committee of the International Commission on Irrigation and Drainage), who support the project in terms of coordination, expertise, implementation of pilot projects and dissemination of results;
4. consultancy firms specialised in developing participative approaches for family agriculture: Cap Rural (Morocco), El Itkane (Algeria), Lisode (France).

These institutions combine their fields of competence and their resources, which are complementary, at various steps of the project, in particular for the design and implementation of pilot training sessions, and the dissemination of results.

## **Outcomes**

After a first phase in Morocco in 2008-2009, the training sessions were extended to more farmers in Morocco and in Algeria in 2010-2011. These two phases produced the following results:

1. support to the creation of the Raccord network;
2. training sessions carried out in 5 irrigated regions in Morocco and 2 in Algeria, benefiting about 400 farmers, on the following subjects: drip irrigation, collective water management and agricultural water users' associations, value chains in irrigated systems (cereals, dairy, vegetables, citrus);
3. training sessions targeting both leaders and members of farmers' organizations;
4. training sessions supporting directly farmers' projects about water savings: planning, management, financing;
5. farmers' organizations getting more autonomous in the setting up of training sessions, in order to build capacities within these organizations, and to ensure the durability of the training programs;
6. building networks of cooperatives and agricultural water users' associations at the national level (Morocco and Algeria) and at the regional level (exchanges Morocco-Algeria).

Farmers have acquired: knowledge (« savoir »), know-how (« savoir-faire » - practices), and interpersonal skills (« savoir-être »). The RIM project has also enabled to extend the action scope of associations and networks in training, until then reserved mainly to the State. The project proposes a posture of support to pilot actions that aims to be complementary to national policies. The exchanges between farmers from different regions, or between sub-regions, have enlarged each participant's vision.

This approach, linking research, action and development, has enabled to strengthen the capacity of innovation of small scale irrigating farmers for the collective management of water, to bring a direct support to farmers' practices (like drip irrigation) and to propose tools and reflections to public policies on these issues, which go beyond the local level.

It is proposed to extend this pilot project to various regions in Maghreb.

### **Lessons Learned**

The project has supported the building of networks of cooperatives and agricultural water users' associations at the national level and at the regional level. In Morocco, the project supported the birth of the network "Raccord" which aims to continue trainings.

This experience has allowed to improve the image the farmers have of themselves and of their professional activity, because of the pragmatic look that teachers, researchers, and trainers had on their professional occupation.

The ambition of the RIM project is that farmers' organizations become autonomous for their training and organize as regional or national associations.

### **Corresponding Author**

Girard, Pierre

### **Corresponding Author Contact**

[pierre.girard@fondation-farm.org](mailto:pierre.girard@fondation-farm.org)

### **Organisation**

Fondation pour l'agriculture et la ruralité dans le monde - FARM

### **Year**

2014

### **Country**

Algeria, Jordan, Morocco

### **Region**

Africa Asia

### **Keywords**

Financing , Maghreb , Irrigation , Cooperatives , small scale solutions

### **Thematic Tagging**

Urban , Water services , Gender , Youth , Ecosystems/Nature-based solutions

Language English

### **Supporting Materials**

Morocco and Algeria: Irrigation in the Mediteranean - strengthening small and medium scale farmers

## **Related IWRM Tools**

Water Allocation Regimes, Community-based water supply and management organisations, Multi-Stakeholder Partnerships, Information Gathering and Sharing Networks, Training Water Professionals, Communities of Practice

---

**Source URL:** <https://iwrmaactionhub.org/case-study/morocco-and-algeria-irrigation-mediterranean-strengthening-small-and-medium-scale>