

Going uphill: design of an alternative narrative of family farmers' collective action in large-scale irrigation schemes in Morocco

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Abstract: Family farmers have limited voice in the decision-making process regarding water services and agro-industrial production in large-scale irrigation schemes in Morocco. Scheme level organizations provide little support for farmer participation, one major reason being a commonly-held narrative of structural weaknesses of farmer-led collective action. This article presents and discusses an approach involving communication activities, development actions and research on farmer-led collective action in these schemes. Firstly, farmer-led collective action was identified and made more visible, especially through the production of videos. Secondly, communication between local farmers' organizations was supported and led to the creation of a nationwide network of these organizations. Thirdly, research was undertaken on farmer-led initiatives and farmer-led collective action. These intertwined activities led to an alternative narrative that emphasizes the potentialities of farmer-led collective action, and more broadly, the willingness and capabilities of farmers to become actors in their own development. Such a narrative may support the "uphill" task of opening the debate on the possible role of farmers' organizations in these schemes. Moreover, it supports the idea of more direct relations between research institutions and farmers' organizations.

Keywords: Collective action, Farmers' organizations, Large-scale irrigation scheme, Morocco, Narrative

Introduction

In large-scale irrigation schemes in Morocco, farmers have to deal with many issues that cannot be addressed at local level, but involve coordination and negotiation at scheme level. These issues concern both water access, which has to be negotiated with the irrigation authority, and the production of commodities that are processed industrially, such as milk and sugar. However, there is currently almost no space for genuine dialogue between farmers and scheme-level organizations (Faysse et al., 2010). One major reason for not including farmers in the decision-making process is the widely shared assessment by public and private organizations at scheme-level of structural limitations in farmer-led collective action. This judgment also leads to public policies that make no effort to reinforce farmers' organizations. The assessment of structural weaknesses of farmers' organizations is common in many ex-socialist countries in which the state set up farmers organizations that often did not meet farmers' and the state's expectations. This failure had a lasting effect on the way public institutions and the farmers themselves see farmers' ability to (and interest in) undertake collective actions (Theesfeld, 2004; Upton, 2008).

Such judgments can be described as a "narrative", here defined as perspectives, images or theories that "are woven together, become widely shared and dominate behaviour" (Röling and Maarleveld, 1999). The notion of "double hermeneutics" (Giddens, 1987) clarifies the way this process takes place. It refers to "the fact that sense-making by some can affect the sense-making and behaviour of others" (Röling and Maarleveld, 1999). Development policies and social sciences are influenced by narratives but also participate in shaping them. Research may in particular unveil, analyse and

possibly challenge the narratives that underpin discourses on rural areas, which in turn influence the formulation of public policies (Scott, 2008). To call into question a narrative may involve focusing on facts, i.e., “there is no story to tell until the facts are in”, and in particular may involve designing and communicating a “counter-narrative” (Roe, 1991). Videos are useful tools to capture and convey narratives, as “narrators are not separated from context, nor words from narrators” (Pieroni et al., 2003).

This article presents and discusses an approach that involved research, development actions and communication activities regarding farmer-led collective actions in large-scale irrigation schemes in Morocco. The approach was developed in the course of the Wademed and Sirma projects on water management in large-scale irrigation schemes in North Africa. The Wademed (Water Demand Management in the Mediterranean) project took place from 2003 to 2007 and was prolonged by the Sirma (Modernisation of Irrigation Systems in North Africa) project (2004-2009). Both projects studied the dynamics at play in irrigation schemes in Morocco, Algeria, Tunisia, and France and aimed at improving networking amongst researchers, farmers and irrigation authorities in those areas.¹ Within the two projects, one research axis aimed at understanding institutional dynamics and farmers’ collective action in large-scale irrigation schemes. In Morocco, the approach described here was implemented in the Gharb, Tadla, Doukkala and Souss schemes by a team of social scientists and a facilitator. The present article presents an ex-post analysis of the two project pathways and of their outputs (mainly videos and articles), made by members of this team. It argues that the approach used enabled the construction of an alternative narrative regarding the potentialities of farmer-led collective action in large-scale irrigation schemes, and more broadly, regarding the willingness and capabilities of family farmers to become actors in their own development.

The article first presents Moroccan large-scale irrigation schemes and describes the commonly-held narrative concerning the structural limitations of farmer-led collective action. The activities undertaken are then presented followed by a description of the alternative narrative that resulted, along with its uses and implications.

Large-scale irrigation schemes in Morocco

Reaffirmed option for centralized management

In Morocco, the setting up of large-scale irrigation schemes dates back to the beginning of the 20th century during the colonial period. After independence, the Moroccan state decided to invest in a major infrastructure development program with the target of one million ha under irrigation. From 1967 to 2004, the area under large-scale irrigation increased from 133,000 ha to 682,000 ha, and nine large-scale irrigation schemes were set up (Akesbi, 2006). The aim was to modernize the farms of the Moroccan peasantry by introducing irrigation, agricultural machinery, new farming practices, and progressively industrial crops. From the 1960s to the 1980s, the Moroccan state kept strict control of these large-scale irrigation schemes, mainly by means of the Code for Agricultural Investments, set up in 1969, which catered for the day-to-day running of the schemes (Doukkali, 2005). Farmers had to grow the crop chosen by the administration, and the state implemented several plans to launch and organize the production of a number of industrial agricultural products, such as sugar in 1974 and milk in 1975. In the early 1990s, farmers were officially allowed to choose their own cropping patterns (some farmers were already choosing them before in an informal way). Today, these schemes are all managed by an autonomous administrative agency, the Regional Agricultural Development Authority (in French the *Office Régional de Mise en Valeur Agricole* hereafter referred to as ORMVA), which is responsible for two main activities: it carries out the irrigation service, from the day-to-day management of sluice gates and water fee recovery to maintenance; and it is in charge of extension and supporting agricultural activities. However, ORMVAs have decreased their extension budget so that limited numbers of farmers now benefit from extension activities.

¹ See www.eau-sirma.net.

In these schemes, the bulk of farms are family farms, which can be defined by: i) production activities organised around the family, which provides the bulk of the workforce; and ii) the importance given to the continuity of family ownership and management of the farm from one generation to the next (adapted from Mercoiret, 2007). Such a definition covers a wide range of farms, in particular in terms of the size of the farm and access to capital. In these schemes, these family farms clearly differ from large-scale capital-based farms.

Originally, the ORMVAs supported the setting up of farmers' organizations in three main domains: water, land, and agricultural production for the agro-industrial sector. First, in 1990, in line with worldwide policies at that time, the Moroccan state enacted a law that created Water User Associations (WUAs). The ORMVAs then created almost all the currently existing WUAs in the large-scale irrigation schemes. The planned activities of a WUA were: i) facilitating communication between farmers and the authority; ii) the maintenance of canals located within its perimeter; and iii) collecting fees on behalf of the authority. Today however, these WUAs are either inactive or undertake only very limited activities when they are located in such large-scale irrigation schemes (Faysse et al., 2010) (WUAs have been more successful in traditional community-based schemes in the mountains and in the Souss region, where they manage one borehole and the scheme irrigated with the groundwater pumped from the borehole).

Faced with these limited results, the ORMVAs have not tried to reactivate and reinforce existing WUAs. Instead, two other options involving centralized management have recently been put forward to solve management problems related to irrigation delivery. First, the administration set up a public-private partnership that built a pipeline to bring water from an upstream dam to the Guerdane area in the Souss region. The pipeline was co-funded by the Moroccan state and a private company, and managed by the latter, which sells water to farmers (Houdret, 2008). The administration considers the Guerdane project as a pilot project, which, if successful, could be expanded to other parts of Morocco. Studies are already underway with the aim of privatizing the management of other large-scale irrigation schemes. The second initiative is a shift to drip irrigation. The Moroccan state hoped that a shift to drip irrigation would solve the country's increasing imbalance between water resources and uses. The state provided incentives for farmers to individually equip their farm with drip irrigation (60% of the cost was reimbursed). However, only a minority of family farmers decided to adopt this technique. The state consequently decided to start converting whole irrigation blocks to drip irrigation. In the long term, a National Programme for Water Economy plans to shift 450,000 ha to centrally-managed drip irrigation systems, mainly in large-scale irrigation schemes. It is also hoped that these centrally-managed systems will ease coordination problems for water delivery, in particular in the Gharb scheme. In these two upcoming policies, discourse calling for improved efficiency (in management and water use) have superseded earlier discourse centred on farmers' participation in the management of the schemes.

The second type of farmers' organizations that the state supported were agrarian reform cooperatives, set up from 1966 onwards. These cooperatives group beneficiaries who share a single land title. In the past, these cooperatives supported farming activities, such as management of agricultural equipment. In most large-scale irrigation schemes, the activities of these cooperatives have been drastically reduced. Most of the cooperatives are disappearing, due to an on-going process of delivery of individual propriety titles. Finally, farmers' organizations were created in the agro-industry sectors, mainly dairy products and sugar. In the sugar industry, there is no community-level organization and regional level organizations are managed by the rural elite, with very poor accountability mechanisms. In contrast, in the milk sector, many milk-collection cooperatives have been set up at the community level, are active and provide services to their communities (Faysse et al., 2010). Such milk collection cooperatives are functional farmers' organizations that provide a basis for collective action for other activities, such as providing support for dairy production (e.g., supplying milking machines) and services (e.g., grocery shops). Moreover, some cooperatives are involved in local development activities, such as medical insurance, credit for farmers, support for pilgrimages to Mecca, or grants to local development associations (Kuper et al., 2009a). The ORMVAs reduced their involvement in the management of both the sugar and milk sectors, which has been

taken over by the agro-industry. Neither industry nor the authorities undertake many actions to support farmers' organizations in the two sectors.

In 2008, the government launched the "Green Morocco" Plan that put agriculture back at the top of the political agenda. This plan schedules the reform of public institutions responsible for supporting agriculture and major increases in investments in the sector (Moroccan Ministry of Agriculture and Fishery, 2008). It divides agriculture into the First Pillar comprising large-scale agriculture, which is capital intensive and which is thought to have promising potential to increase production; and the Second Pillar, referred to as "solidarity agriculture", which comprises smallholder farming where more importance is given to its social role in rural areas than to its economic role. For both pillars, the plan intends to link small-scale farmers with "aggregators", i.e. economic actors who will be an intermediary between the farmers and the market. However, the focus is on economic and logistic issues, and less attention is paid to the way smallholder farmers will be involved in the decision-making process and the way their relations with the aggregators will take place. While a dairy production and industrialization cooperative in the Souss region is held up as an example of success to inspire such plans (Tandia and Calas, 2009), this is due to its economic success and its capacity to aggregate thousands of small-scale farmers more than to its original governance and the way it integrates the voices of these farmers in the decision-making process.

A narrative of structural limitations of farmers' collective action

In the Gharb, Tadla and Doukkala irrigation schemes, the opinion of farmers' organizations' performance commonly held by the staff of the ORMVAs and by the central administration of the Ministry of Agriculture is generally grim, with the exception of dairy collection cooperatives. The first reason put forward is the farmers' limited capacity to undertake collective action, which is presented as being linked to individualism and to the permanent influence of local politics. The second reason given is the farmers' lack of willingness to undertake such collective action: Farmers are said to prefer to remain "beneficiaries" or "clients" and not to want to become involved as a decision-makers. For instance, the staff of the Doukkala ORMVA did not think it was worth trying to re-launch and support WUAs because of: i) farmers' illiteracy and advanced age; ii) lack of professional experience of the WUA managing committee; iii) the large number of farmers in WUAs; iv) lack of motivation for farmers to belong to such associations (Hmimidi, 2004). An engineer from the Gharb ORMVA commented to a member of our team: "In the Gharb scheme, the sprinkler irrigation system did not succeed because everything that is organized on a collective basis is bound to fail, WUAs or anything else, maybe it is a hereditary problem. Anyway, there is a serious lack of confidence among farmers: they never manage to agree among themselves".

In the same way, three main reasons were put forward to explain the lack of actions undertaken by development authorities to support farmers' organizations. First, according to many members of ORMVA staff, very limited learning takes place: the above-mentioned causes of the weaknesses of farmer-led collective action are still as strong as in the past and are likely to continue to prevent any further improvement. Second, some staff members pointed out that the administration is not well equipped to support farmers' organizations, either because of increasing budget constraints or because of lack of adequate methods. As one staff member of an ORMVA commented: "The farmers' organizations that work are those we do not interfere with". Finally, Van Vuren et al. (2005) identified a lack of political will for the real transfer of irrigation management to WUAs. While ORMVA staff do acknowledge the successes of several milk collection cooperatives in the Tadla and Doukkala schemes, they consider farmers' organizations to be isolated "boxes", they do not acknowledge the learning processes that take place in such cooperatives, nor the way such successes may help re-think the design of farmers' organizations for water management and sugar production and how these organizations could be supported.

While the reasons put forward for the weaknesses of farmer-led collective action and lack of support from the administration may differ, they converge towards a narrative that is shared by many of the ORMVA staff and by the central administration of the Ministry of Agriculture, concerning inherent

limitations in farmer-led collective action and limited prospects for supporting their more active involvement in the decision-making process regarding water management and agro-industrial production. The general idea can be summarized as “In these schemes, in the past we tried to develop farmers’ organizations, but it did not work, so now we need to find other alternatives”.

The same narrative is shared by many farmers, particularly in the Gharb irrigation scheme, where past failures of farmers’ cooperatives have had a lasting impact on the way farmers view collective action. Many farmers associate the concept of “farmers’ cooperative” with poor management and with decisions taken by the elite (Bouzidi et al., 2009). They consequently tend to think that collective action by formal farmers’ organizations is doomed to failure or to be controlled by the local elite and they rarely attempt to initiate new forms of collective action.

A progressively built approach

In these large-scale irrigation schemes, the research team jointly undertook three types of activities regarding farmer-led collective action: identifying and making visible such collective actions, supporting farmer networking and conducting research on farmer-led collective action.

Identifying and rendering visible successful farmer-led collective action and farmers’ capacity to argue their point of view

The team first identified and analyzed local farmer-led collective actions. In the large-scale irrigation schemes studied, the WUAs were mostly dormant and farmers usually interacted with the ORMVAs as individuals. For that reason, the team decided to look for other forms of collective action within the perimeter of such schemes.

During the Wademed project, a series of videos was produced on farmers’ organizations and issues such as land access and the role of young people in the Doukkala scheme. One of the videos showed the contrast between the success of a milk collection cooperative and the limitations of farmers’ organizations in the sugar industry. The videos paid special attention to farmers’ points of view and demonstrated the farmers’ ability to argue and propose solutions for the problems they had to face, such as relations with the ORMVA and the sugar industry or access to land. A multi-stakeholder platform was then created, which involved staff from the irrigation agencies, farmers and researchers. Following Habermasian principles of communicative rationality (Fayse, 2006), a leading hypothesis was that lack of adequate communication, and in particular the lack of a space in which farmers could put forward their ideas and be listened to by scheme-level organizations, was one main constraint to solving coordination problems concerning water management. The videos produced were thus projected before the debates started (Kemoun et al., 2004) with the aim of improving the communication process. During the meetings, the farmers talked to the ORMVA staff like professionals talking to other professionals. However, there were no clear outcomes in terms of decisions taken. This was not only due to the fact the farmers had little influence on decision-making processes, but also to the fact that the ORMVAs were going through a difficult period, with the nationwide implementation of plans for voluntary departure in public administrations, and lack of clarity concerning their role and functions in the future.

Later on, other farmers’ organizations that farmers considered to be successful were identified in the Gharb, Tadla and Souss schemes. The analysis was extended to the 6,500 ha Middle Sebou River scheme, which has the same kind of irrigation infrastructure as large-scale irrigation schemes and which is entirely managed by WUAs. Ten other videos were produced that portrayed these experiences of collective action. The videos were based entirely on farmers’ testimonies with no narrator. The videos were shown at agricultural fairs in Morocco and France. The videos were also presented to the North African and French scientific community at the Wademed and Sirma annual seminars. The videos were later made available on the internet in the original Moroccan Arabic language and in French and English translation.

While the videos were originally produced to reveal successful farmers' organizations to public stakeholders, later on they were also used to show such experiences to other farmers' groups. For instance, the video of a young and successful milk collection cooperative was shown to three groups of farmers who wished to set up their own milk cooperatives.

Supporting farmer networking and involvement in development actions

In the course of the activities described above, farmers' organizations that were successful at local level were identified in the Gharb, Tadla, Doukkala and Souss schemes. Leaders of these farmers' organizations were invited to the final Wademed seminar in France in 2006 (Dumora et al., 2010a). In 2007 and 2008, this group, accompanied by the research team, visited the four large-scale irrigation schemes where they lived and farmed. During each trip, farmers visited each others' villages and learned about the local agricultural systems, innovations and collective action. These visits led to the progressive construction of a network, which was formalized in 2007 with the creation of a nationwide association to federate the local farmers' organizations, namely milk collection cooperatives in the Gharb, Doukkala and Tadla schemes, and WUAs in the Souss and Middle Sebou River schemes. The network French name was Raccord, which means connection. The research team accompanied the creation of the network (which had not originally been planned), with a focus on ensuring the autonomy of the network and its capacity to interact independently with external organizations. Later, several training courses were organized in partnership with the network, with priority given to farmer-to-farmer training. Farmers who were members of the network coordinated the organization of two training periods in 2009.

Capacity-building actions enabled farmers to acquire technical knowledge. For instance, farmers who belong to the network introduced silage maize after a trip to another region where farmers successfully use this technique. Impacts included more recognition from public organizations. The existence of Raccord enabled leaders of local farmers' organizations to contact the ORMVAs and negotiate support for the training sessions as fully-fledged professionals who were responsible for the organization of the event (Dumora et al., 2010b).

Action-research was also undertaken with the aim of designing, testing and evaluating innovative forms of interacting with farmers on a partnership basis. A method was developed and tested in the Tadla scheme to accompany a group of farmers in co-designing a common drip irrigation system (Kuper et al., 2009c). A series of workshops on dairy production was organized with a milk collection cooperative in the Gharb scheme to evaluate the potential interest of involving local farmers' organizations as partners in capacity-building activities (Layadi et al., 2010).

Research on farmer-led initiatives and collective action

Based on the initial identification, research was undertaken that focused on farmers' local initiatives and collective action. In that sense, it differed from earlier studies of those schemes, which were mainly focused on the evaluation of public policies (Perennes, 1993). First, a method was developed to identify different forms of collective action at local level (Bouzidi et al., 2009). Collective action within formal farmers' organizations was identified and analyzed (Errahj et al., 2009; Kuper et al., 2009a), as well as informal farmer-to-farmer agreements especially concerning access to groundwater (Bekkar et al., 2009). Second, researchers analyzed coordination between farmers and public organizations in irrigation schemes paying special attention to the way farmers took initiatives in such coordination (Faysse et al., 2010; Kadiri et al., 2009). These studies revealed the important learning process that takes place in local farmers' organizations, where farmers learn internal check and balance procedures and how to interact with external organizations as partners in the decision-making process. Third, the way farmers obtain knowledge through informal networks, in a context of general lack of extension systems was also investigated (Poncet et al., 2010). Finally, action-research initiatives were monitored and evaluated both regarding interactions between researchers and

farmers (Dumora et al., 2010a) and the way farmers and researchers learned from these interactions (Dumora et al., 2010b).

An alternative narrative of potentialities of farmer-led collective action

At the beginning of the team activities, the main aim was to “denarrativize” (Roe, 1991) the existing narrative of structural weaknesses in farmer-led collective action by identifying counter examples. During the course of the two projects, the three intertwined types of activities resulted in an alternative narrative, based on a coherent set of “stories” and analyses. The narrative was built thanks to continuous interaction between practice and theory, which was progressively stabilized and may be described as a praxis (Kuper et al., 2009b). The narrative was not only based on external identification and analysis of existing farmer-led collective actions. The Raccord network itself constituted a successful collective action within the group of farmers, and in that sense contributed the development of the alternative narrative.

The alternative narrative asserts that, even in large-scale irrigation schemes (where until recently, the presence of the state was very strong) family farmers are able and willing to take responsibility for their own development because they are capable of acting together to solve common issues and of being an interlocutor of public and private development institutions. In that sense, farmers are willing to be “partners” in the decision-making process regarding the design and implementation of development actions, and not mere “beneficiaries”. The development referred to above does not only imply improving production techniques, but also human development, in terms of broadening farmers’ horizons and frames of reference.

The new narrative was used in three ways. The first was to show on-going dynamics in rural areas to the Moroccan and North African scientific community and decision makers. However, this alternative narrative does not imply that farmers should suddenly be invited to multi-stakeholder platforms in a way that would fail to take into account power asymmetries (Edmunds and Wollenberg, 2001). The limited results of the multi-stakeholder platform organized during the Wademed project testify to the need to be cautious in implementing such platforms. Instead the narrative stresses opportunities for the reinforcement of farmers’ organizations, i.e., that it is possible to work with farmers’ organizations and to empower them, so that, later, they are considered as partners in the decision-making process. Moreover, we do not assume that merely publicising the new narrative will be sufficient for decision-makers to give more importance to farmers’ organizations: as seen above, there are other reasons than representations of farmers’ capacities that explain the lack of public policies supporting farmers’ organizations in large-scale irrigation schemes. The second role of the new narrative was to support communication within groups of farmers. For instance, although the original intentions was to show the videos to development professionals in multi-stakeholder platforms, they were increasingly also used to show farmers’ experiences to other farmers. The third role of the narrative was to support and legitimize direct relationships between research and farmers’ organizations. At the beginning of the first Wademed project, only the first use of the narrative was considered, but later on the two other uses became increasingly important.

Risks and limits

In interactions between researchers and rural organizations, there is always a risk of the researchers producing a “rose tinted” and self-censored portrait of the reality of farmers’ organizations (Edelman, 2009). While there is indeed reason to be cautious, the research team explicitly dealt with such a risk. First, the new narrative does not claim that all local farmer organizations function satisfactorily, but that at least some do, and that it is possible to learn from these experiences to design support for improving the management of other farmers’ organizations, and more generally, to re-think the role of farmers in the conception and implementation of public policies for rural development. Moreover, the existing problems faced by farmers’ organizations in these schemes (lack of accountability, poor management, etc.) were well known to ORMVA staff, and paying much

importance to assess such elements was thus not considered to be a priority. Second, there was a clear distinction between the “portraits of collective action” in the videos, which were entirely based on farmers’ testimonies, and scientific articles that were written from an analytical standpoint: Faysse et al. (2010) pointed out the weaknesses and strengths of farmers’ organizations in these schemes, while Kadiri (2009) analyzed the political competition among the Middle Sebou River WUAs.

The approach faced two main limits. Firstly, the approach paid limited attention to non-members of farmers’ organizations, such as women, and did not specifically address the poorest members in rural communities. This said, the Moroccan dairy cooperatives include a large proportion of villagers, as often even farmers who only have one cow are members. Secondly, since the design of an alternative narrative was not originally planned, specific monitoring was not set up to assess its impacts, in particular the way public administration’s assessment of farmers’ organizations may have been modified after having participated in one of the project seminars or having seen the videos produced by the two projects.

Conclusion

The approach analyzed here is a reflection of what may be the role of social sciences in knowledge production and communication in situations where there are not only major cognitive differences between farmers, researchers and public organizations but also a lack of communication between them. The approach regarding farmer-led collective action did not propose explicit institutional set-ups that may be able to solve the coordination problems and address the lack of farmers’ presence in the decision-making process in large-scale irrigation schemes. Rather, its main result was an alternative narrative of family farmers’ capacities that may be used as an “uphill task of shifting ideas” when they are “deeply entrenched in bureaucratic structures, educational systems, media representations and political processes” (Scoones, 2005). Elements of this narrative have been also proposed in other farmer-researcher interactions (for instance, Holt-Giménez, 2006).

Another important result was the renewed attention paid to the possible links between research activities and education and development activities. In particular, the research projects enabled the training of many students from the two main colleges of agriculture in Morocco and of three PhD students in the analyses of dynamics in rural areas that do not consider public policies as the only possible entry point. Moreover, in the course of the two research projects, the role of the narrative as a key stepping stone for renewed relations between farmers and scientists became increasingly important. By supporting farmers’ networking and the training of engineers in agronomy who will later be employed in both public and private organizations involved in rural development, the approach worked “both sides of the equation” (Gaventa, 2004) between public organizations and the farmers in these schemes.

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References

- Akesbi, N. (2006) *Evolution et perspectives de l’agriculture marocaine. (Evolution and perspectives of Moroccan agriculture)*. In: Rapport 50 ans de développement humain et perspectives 2025. Casablanca: Editions Maghrébines, pp. 85-198.
- Bekkar, Y., M. Kuper, M. Errahj, N. Faysse and M. Gafsi (2009) On the difficulty of managing an invisible resource: Farmers’ strategies and perceptions of groundwater use. Field evidence from Morocco. *Irrigation and Drainage* 252-263.

- Bouzidi, Z., N. Faysse, M. Errahj, M. and M. Kuper (2009) L'action collective en grande hydraulique au centre d'un nouveau régime d'action Test d'une méthode de repérage et de qualification de l'action collective dans le périmètre du Gharb. In: Hartani, T., Douaoui, A. and M. Kuper (Eds.). *Proceedings of the Fourth Regional Workshop of the SIRMA Project, Mostaganem, Algeria, 26-28 mai 2008.*
- Doukkali, M.R. (2005) Water institutional reforms in Morocco. *Water Policy* 7: 71–88.
- Dumora, C., H. Kemmoun, M. Errahj, M. Kuper and N. Faysse (2010a). Construction d'une narrative alternative d'action collective en grande hydraulique au Maroc. Unpublished paper.
- Dumora, C., N. Faysse, M. Errahj and M. Kuper (2010b) Apprentissages réciproques chemin faisant : coopération une construction collective, entre agriculteurs et chercheurs, pour vers la formation d'un réseau d'Organisations Professionnelles Agricoles au Maroc. Paper to be presented at the Innovation and Sustainable Development in Agriculture and Food, 28 June - 1 July, Montpellier.
- Edelman, M. (2009) Synergies and tensions between rural social movements and professional researchers. *The Journal of Peasant Studies* 36(1): 245-265.
- Edmunds, D. and E. Wollenberg (2001) A strategic approach to multistakeholder negotiations. *Development and Change* 32 (2): 231– 253.
- Errahj M., M. Kuper, N. Faysse and M. Djebbara (2009) Finding a way to legality, local coordination modes and public policies in large-scale irrigation schemes in Algeria and Morocco. *Irrigation and Drainage* 58 (3): S358-S369.
- Faysse N, M. Errahj, M. Kuper and M. Mahdi (2010) Learning to Voice? The evolving roles of family farmers in the coordination of large-scale irrigation schemes in Morocco. *Water Alternatives* 3(1): 48-67.
- Faysse, N. (2006) "Troubles on the way: An analysis of the challenges faced by multi-stakeholder platforms." *Natural Resource Forum* 30: 229–229.
- Gaventa. J. (2004) Towards participatory governance: assessing the transformative possibilities. In: S.Hickey and G. Mohan (eds.) *Participation: From Tyranny to Transformatio*. London: Zed Books, pp. 25-41.
- Giddens, A. (1987) *Social Theory and Modern Sociology*. Cambridge: Polity Press.
- Hmimidi, R. (2004) Contribution à la recherche d'une méthodologie de redynamisation des AUEA dans le périmètre des Doukkala. Master thesis, ENA Meknes, Morocco.
- Holt-Giménez, E. (2006) *Campesino a Campesino. Voices from Latin America's farmer to farmer movement for sustainable agriculture*. Oakland : Foodfirst Books.
- Houdret, A. (2008) The privatisation of irrigation water services: New partnerships and water conflicts in the El Guerdane project, Morocco. Paper presented at the 13th World Water Congress, International Water Resources Association, Montpellier, France, 1-4 September 2008.
- Kadiri, Z., M. Kuper, N. Faysse and M. Errahj (2009) Local transformation of a state-initiated institutional innovation: The example of water users' associations in an irrigation scheme in Morocco. *Irrigation and Drainage* 58(S3): 346-357.
- Kadiri, Z. (2009) L'association des irrigants comme espace de la compétition politique au Moyen Sebou. Paper presented at the seminar on communal elections in Morocco, Centre Marocain des Sciences Sociales, Casablanca, 14 dec.
- Kemmoun, H., M. Kuper and M. Errahj (2006). La vidéo comme support de concertation pour la gestion de l'eau en grande hydraulique au Maroc. In : A. Richard, P. Caron, J.Y Jamin, T. Ruf (Eds). *Coordinations hydrauliques et justices sociales*. Proceedings of the seminar on water coordination and social justice, November 2004, Montpellier, France.
- Kuper, M., M. Errahj, N. Faysse, P. Caron, M. Djebbara and H. Kemmoun (2009a) Autonomie et dépendance des irrigants en grande hydraulique : observations de l'action organisée au Maroc et en Algérie. *Nature Sciences Sociétés* 17 : 248-256.
- Kuper, M., S. Bouarfa., M. Errahj, N. Faysse, A. Hammani, T. Hartani, S. Marlet, A. Zairi, A. Bahri, A. Debarh, P. Garin, J.Y. Jamin and B. Vincent (2009b) A crop needs more than a drop: towards a new praxis in irrigation management in North Africa. *Irrigation and Drainage* 58: 231-239.

- Kuper, M., M. Dionnet, A. Hammani, Y. Bekkar, P. Garin, B. Bluemling. 2009c. Supporting the shift from state water to community water: Lessons from a social learning approach to designing joint irrigation projects in Morocco. *Ecology and society* 14 (1): 19.
- Layadi, A., N. Faysse, C. Dumora (2010) Renforcer le dialogue « entre pairs » : Partenariat avec une organisation professionnelle agricole locale pour l'amélioration de l'élevage bovin au Maroc. Paper submitted to *Cahier d'Agricultures*.
- Mercoiret, M.R. (2007) Les agricultures familiales et leur rôle pour un développement durable: Choix politiques et enjeux. In Caron, P. (Ed), *Agricultures familiales et mondes à venir: Conférence de Paris*, Salon international de l'agriculture, 3 mars 2005, pp. 16-22. Montpellier: CIRAD.
- Moroccan Department of Agriculture and Fishery (2008). Plan Maroc Vert. www.vulgarisation.net/Plan_Maroc_Vert.pdf accessed January, 2010.
- Perennes, J.J. (1993) *L'eau les hommes au Maghreb, contribution à une politique de l'eau en Méditerranée*. Karthala : Paris.
- Pieroni, P., M. Galli and G. Brunori (2003) Montemagno stories: Narratives and videos as tools to facilitate reconstruction of sustainable localities. *Journal of Agricultural Education and Extension* 9(1): 21-31.
- Poncet, J., M. Kuper, J. Chiche (2010) Wandering off the paths of planned innovation: the role of formal and informal intermediaries in a large scale irrigation scheme in Morocco. *Agricultural Systems* 103 (4): 171-179.
- Roe, E. (1991) Development narratives, or making the best of blueprint development. *World Development* 19(4): 287-300.
- Roling, N. and M. Maarleveld (1999) Facing strategic narratives: An argument for interactive effectiveness. *Agriculture and Human Values* 16: 295–308.
- Scoones. I. (2005) *Governing Technology Development: Challenges for Agricultural Research in Africa*. IDS Bulletin, Vol 36, No 2.
- Scott, M. (2008) Managing rural change and competing rationalities: insights from conflicting rural storylines and local policy making in Ireland. *Planning Theory & Practice* 9 (1): 9–32.
- Tandia, A., and H. Calas (2009) Plan Maroc Vert, nouveau départ pour l'agriculture. *Conjoncture* 903 : 25-35.
- Theesfled I. (2004) Constraints on collective action in a transitional economy: The case of Bulgarian's irrigation sector. *World Development*, 32(2): 251-271.
- Upton, C. (2008) Social Capital, Collective Action and Group Formation: Developmental Trajectories in Post-socialist Mongolia. *Human Ecology* 36:175–188.
- Van Vuren, G., C. Papin and N. El Haouari (2005) Participatory irrigation management: Comparing theory with practice, a case study of the Beni Amir irrigation scheme in Morocco. In: Hammani, A.; Kuper, M. and Debbah, A. (Eds), *Proceedings of the First Inco-Wademed Seminar on the Modernisation of Irrigated Agriculture* (April 2004, Rabat), pp. 174-183. Rabat: Institut Agrovétérinaire Hassan II.