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The Water Connection: Irrigation, Water Grabbing and Politics in Southern Morocco

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ABSTRACT: Water and land grabbing is often an indication of growing control by an elite group over natural resources for agricultural production, marginalising their previous users. It may drive and exacerbate social, economic and political disparities and so increase the potential for conflict. In Southern Morocco's Souss valley, the overuse of water resources is causing aquifer levels to sink and agricultural land to be abandoned. At the same time, irrigated agriculture is still expanding, often permitting the growing of lucrative citrus fruits. This export-oriented agriculture mostly benefits the economic elite, increasing their political influence. Small farmers, on the other hand, face growing threats to their livelihoods. A public-private partnership (PPP) project reallocating water through a 90 km pipeline from a mountain region to plantations in the valley has been implemented to enhance water supply and save dying citrus plantations. However, it is accentuating disparities between farmers. We trace the dynamics of marginalisation linked to this PPP and use emerging water conflicts as a lens to analyse the appropriation of water resources and the underlying political and economic relationships and strategies. On the basis of the case study, we show that water conflicts are as much struggles over political influence as over the resource itself and, consequently, that the related phenomenon of 'water grabbing' is not only driven by economic interests but also determined by a political agenda of regime stability and economic control. However, we also point to the opportunities presented by recent social and political changes in Morocco, including the influence of the 'Arab Spring', and argue that such processes as increasing transparency, decentralisation and the empowerment of local civil society support, the re-appropriation of water, livelihoods and power. We conclude by examining the limits of this PPP model, which has been internationally praised by financial institutions, and calling for a careful evaluation of its ecological and social impacts before such experience is replicated elsewhere.

KEYWORDS: Water conflicts, water management, water grabbing, rural development, irrigated agriculture, public-private partnership (PPP), El Guerdane, Arab Spring, Morocco

INTRODUCTION

The sentiment expressed in the 2006 World Water Development Report that "[t]here is enough water today. The problem we face is largely one of governance" (UNESCO/WWAP, 2006) is widely shared. However, institutional reorganisation in the context of Integrated Water Resources Management (IWRM) has produced mixed results (see, among others, Merrey, 2008; Swatuk, 2004), and it is becoming clear that the problem of governance, in water management as elsewhere, cannot be limited to institutional structures alone. Instead, water management is deeply rooted in established social and political relationships at national and local levels, facilitating or hindering, but always affecting governance. In many cases, new institutional structures are not endowed with sufficient authority (among other things, they lack recognition, financial, administrative and technical resources and legal status) or legitimacy to fulfil their duties. Furthermore, inefficient water management or water conflicts are often considered to be primarily technical problems to be solved by increasing supply or improving networks. Underlying social and political dynamics, however, which are often at the heart of distribution problems and related conflicts, are frequently neglected (Houdret, 2008). As Mutin (2001)

points out, "water narrates society". Social and political structures determine the priorities and orientations of water management in virtually every country. However, this becomes particularly visible in regions where water is scarce: its allocation leads to controversy and conflicts between sectors (e.g. tourism versus agriculture), regions (e.g. coastal versus inland regions), communities or individuals (e.g. nomads versus farmers). In dry regions water and land policies also have immediate impacts on income and livelihoods and are therefore often highly sensitive topics. Socio-political relations and power-plays thus increasingly determine water allocation, and water management becomes a question of marginalisation, social (in)equity and political legitimacy. This, in turn, often leads to greater potential for conflict, especially when such adaptive capacities as alternative income generation are weak (Houdret, 2010). However, the politicisation of both water and its allocation is also linked to the socio-economic inequalities or to other polarisation processes. As Mukherji (2006), for example, shows for two regions in India, politicisation can even occur when there is enough water for all demands. Scarcity is always defined in relation to a certain level of demand and mostly as a result of allocation and policy choices. In this sense, as Mehta (2010) and others rightly point out, scarcity is just one of various possible views of the problem, often suggesting simplistic, technically oriented responses.

The present paper is a contribution to the growing research on the links between water management, socio-political relations and power. It introduces a specific focus by tracing the dynamics of water and land grabbing and uses related conflicts as a lens to study this phenomenon. Several researchers have pointed to the links between socio-political relations and water management, starting with Wittfogel's famous work (Wittfogel, 1957) and including power-plays in irrigation policies (e.g. Theesfeld, 2008; Kaptijn, 2011), as well as more general research on the links between decision-making processes in the water sector and underlying larger social processes (Mollinga, 2008a). The political ecology approaches to the environment and natural resources management in general (e.g. Forsyth, 2003; Mukherji, 2006) and, more specifically, to the role of social power in water allocation have been most useful in providing a better understanding of the links between social and political struggles over the control of water resources (Swyngedouw, 1997). As Mollinga rightly puts it, water control should be conceived as a politically contested area (Mollinga, 2008b).

This paper seeks a better understanding of these issues and their interrelationships. As conflicts crystallise power relations, their emergence and escalation, and also mediation and prevention, provide useful insights into the dynamics of social relationships and political interests. The study of water conflicts has therefore proved to be a helpful starting point for an insight into broader processes of marginalisation, political influence and legitimacy in the context of 'water grabbing'.

A second aim of this paper is to draw attention to the potential effects of privatisation and public-private partnerships (PPPs) in the irrigation sector. While most of the research on PPPs has been concerned with the drinking and sanitation water sector, PPPs are still relatively new in the irrigation sector. In 2005, the World Bank advocated a "shift toward a new public-private paradigm for irrigation, in which government progressively becomes more the facilitator and regulator, and users and markets play a growing role in management and finance" (World Bank, 2005). After the implementation of a few pilot projects (including the one analysed below), such international institutions as the World Bank are increasingly advocating such models worldwide. Arguments for the involvement of the private sector in irrigation are similar to those in the drinking water sector: a shortage of public funds for investment in, and the maintenance of, infrastructure and assumed improved cost efficiency and water productivity[1] (see also Molle and Berkoff, 2006). Partnerships between public and private players can take different forms, with differing degrees of responsibility taken by each side for finance and construction and different levels of ownership, operation and maintenance of the infrastructure. A very common agreement, and one that has also been signed in the case under study, is the 'build-operate-transfer'

[1] In the drinking and sanitation water sectors, these hopes were dashed mainly because private-sector involvement often led to restrictions for low-income groups and did not, as a rule, result in the necessary investment in the maintenance and expansion of infrastructure (Allouche and Finger, 2002; Balanya et al., 2005).

(BOT) contract, meaning that the private partner relinquishes the infrastructure and operation after a certain time. PPPs are also playing a growing role in land and water 'grabbing' (von Braun and Meinzen-Dick, 2009) and are likely to receive further support in the context of the 'green economy' (European Commission, 2011). However, most PPPs entail higher prices for water use although, as different evaluations have shown, improved demand management has more effectively contributed to increasing water savings than higher prices (Molle and Berkoff, 2007). One of the aims of this case study is to contribute to the analysis of the social and environmental sustainability of such partnerships. It focuses on water conflicts in the Souss valley of southern Morocco, where water is scarce and a PPP has been set up to secure irrigation water for citrus fruit plantations. However, the project is being accompanied by the marginalisation of small-scale farmers and by conflicts. The first section of the case study briefly introduces the framework for analysing local water conflicts, their root causes and the opportunities for mediation and transformation. The second section analyses the land and water grabbing resulting in marginalisation and conflicts in the region. The third points out that struggles for water reflect more complex struggles for power and asks how far water management plays a role in Morocco's political (in)stability. The conclusion comprises a short summary of the findings and interprets them in a broader political and developmental context, while also suggesting further research on land and water grabbing and the role of PPPs in this context.

ANALYSING LOCAL WATER CONFLICTS

Although research on transboundary water conflicts is well established (Wolf, 2004; Brochmann and Gleditsch, 2006) problems associated with water governance and related conflicts occur today mostly *within* states – between sectors, provinces, communities or water users – as Wolf concludes after his extensive studies (Wolf, 1998; see also Lonergan, 2001; Houdret et al., 2010). At this level, however, the role of socio-political relations and the links to political stability have been researched less systematically – even though case studies of local water conflicts have been conducted in the drinking water sector (Balanya et al., 2005) and in the irrigation sector (Mathieu et al., 2001; Ravnborg et al., 2012).

While important work has been done on natural resources management at local level, including related power issues and conflicts (e.g. Korf and Engel, 2005), little of this sheds light specifically on water resources. Common pool resource theories, for instance, often argue at a highly abstract level, applying, inter alia, the logic of game theories. As Cleaver rightly points out, many of these approaches neglect social and symbolic meanings connected to the resource and its uses (Cleaver, 2000), which are highly important in the case of water management and related conflicts. Moreover, variables that explain social behaviour are often taken into account only at the local level, while the important influence of national or regional policies and power relations is neglected (Houdret, 2010). Another relevant branch of research deals with environmental change and security. In the context of the growing interest in climate change and related impacts on conflict potential, environmental security research is now becoming known to the wider public and features in international reports. Empirical research on the links between environmental change and conflicts has been undertaken since the 1990s (e.g. Bächler, 1994, 1998; Homer-Dixon, 1999). Researchers point out that environmentally induced conflicts result from a complex interaction of both physical and socio-political factors. However, the findings of these studies are of only limited value for water research. First, researchers use different definitions of 'environmental conflict', which do not allow a rigorous comparison of results (Biermann et al., 1998). Nor do these definitions apply fully to water resource conflicts: many studies consider only highly advanced conflicts and take no account of non-violent conflicts. Furthermore, many research projects tend to neglect important socio-political variables, define them inadequately, or fail to consider adaptability to environmental stress.

In this paper, we define water conflicts as *situations of incompatible or opposing interests among water users relating to forms of access, and/or resource quantity and/or quality* (Houdret et al., 2010).

The way these conflicts find expression may vary from verbal disagreement through sabotage to violent confrontation.[2] Power is mainly analysed as a structural difference in, and marginalisation from, access to resources, comprising not only natural resources and means of agricultural production but also political participation and social networks. As Bächler et al. (2002) and others have shown, these structural differences play an important part in the emergence of conflicts. This paper also presents findings on mediators in water conflicts. On the basis of assessments in the region and the views of people affected by water conflicts, the legitimacy of these mediators and the chances of successful intervention have been evaluated with respect to their perceived ability to solve technical and socio-political problems associated with water management and conflict. The perceived success of intervention was also assessed. This paper presents the results of an in-depth study of the root causes of water-related conflicts, their escalation and the potential for mediation, prevention and transformation (Houdret, 2010). The methodological approach can be described as follows: in 2006, an initial analysis of structural changes in the research area, including field studies, provided an overview of relevant factors that might influence the distribution of social power and the marginalisation of population groups. Changing ecological conditions in agricultural production, socio-economic transformations and shifts in political power relations were considered. Several water conflicts with different constellations of actors were also analysed in depth through extensive interviews. An initial typology of both water-related conflicts and their possible root causes was compiled on this basis. It revealed two crucial types of marginalisation processes: marginalisation in access to such natural resources as land and water, and socio-economic marginalisation. It also became apparent that *perceived* inequalities in resource access or social inclusion were at least as relevant to conflict dynamics as *objectively measurable* differences. In 2006 and 2007, the author and research assistants conducted over one hundred interviews with farmers in and around the area of the PPP irrigation scheme (in the valley as well as in the hills) as a means of studying marginalisation processes and related conflicts further. As the review of the literature and interviews with experts suggested that the area of cultivated land per farmer had major implications for production and, consequently, for income, interviewees were selected on this basis. With further reference to local statistics on the area of cultivated land per farmer and to the key challenges mentioned below, four categories of farmers were defined: those cultivating less than 1 to 3 ha; those with land between 3 and 10 ha; those with land between 10 and 20 ha and those cultivating more than 20 ha (often but not exclusively companies).[3] Considerable qualitative research in the study area and beyond, involving interviews with local leaders and representatives of local administrations, civil society organisations, universities and international organisations also helped the evaluation of these findings.

WATER AND LAND GRABBING: THE CASE OF EL GUERDANE

Royal water alliances, or the story of an unusual PPP

Southern Morocco's Souss valley is famous for its citrus fruits – 60% of national production is grown here, accounting for half of the country's exports of these fruits. However, over-exploitation of soils and water, coupled with frequent droughts and decreasing rainfall, has led to increasingly severe water scarcity since the beginning of large-scale agricultural exploitation in the 1960s. Since then the water

[2] For a more detailed view on the various forms of escalation, see Houdret, 2008.

[3] Further explanation of the choice of these categories: the economic survival of farms cultivating land between 1 and 3 ha is particularly at risk because of rising production costs and declining yields, increasing water scarcity and the impact of free-trade agreements. At the same time, 70% of the farms cultivate less than 2 ha (MADPRM, 2008). As most farms of between 3 and 10 ha cannot afford the high initial investment in drip irrigation, their future is uncertain (Akesbi, 2005). Farms between 10 and 20 ha usually earn enough for a farmer and his family, and if production conditions are favourable, they can grow lucrative crops. Farms of more than 20 ha form the last category; their size may vary, but most engage in export-oriented, large-scale farming.

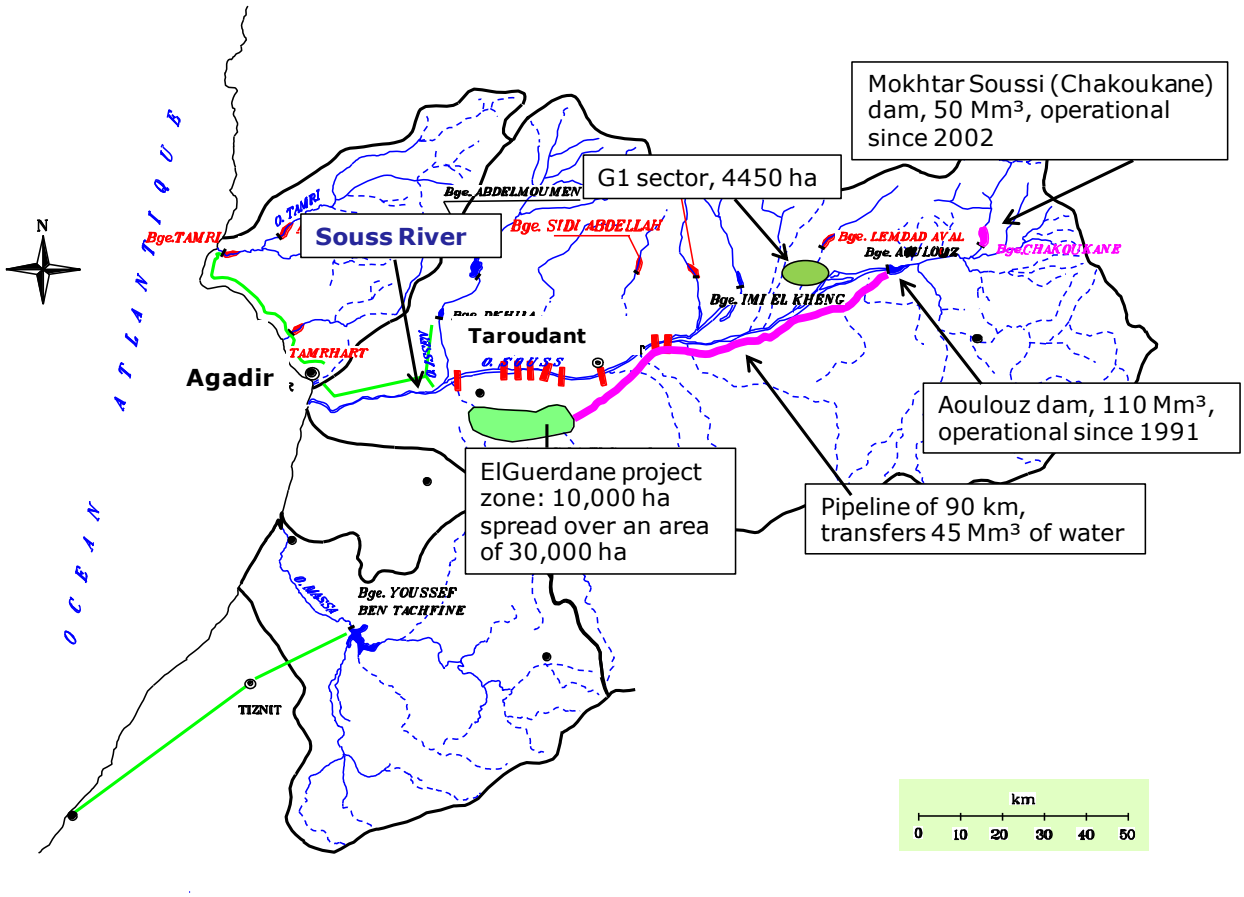
table has dropped in the valley by between 30 and 75 m (ABHSM, 2011). In spite of a prohibition imposed by the water authority, irrigated areas are still expanding and the use of private tube wells has risen dramatically. Large areas of formerly fertile land have been abandoned and huge greenhouses are left unattended, as the depletion of the aquifer is drying out wells, often leaving entire villages without a supply of drinking water. The annual water deficit with regard to water use is estimated at 233 million m^3 in the Souss valley alone (ABHSM, 2011). The regional River Basin Agency (Agence de Bassin Hydraulique du Souss-Massa, ABHSM) is responsible for allocating water to a population of 1.7 million in the region, to roughly 140,000 ha of cultivated land (mostly via the agency responsible for public irrigation, the *Office Régional de Mise en Valeur Agricole, ORMVA*) and to the tourism sector (mostly along the coast and in the city of Agadir). Given the strategic importance of both the tourism sector (30% of all tourism in the country) and local export-oriented agricultural production, water allocation is constantly haggled over in this water scarce area. Several attempts to restore the aquifers and for improved regulation of water use have been made since the 1990s, including at least two innovative approaches: the negotiation of an 'aquifer contract' and the implementation of a PPP. In 2009, the regional council and the basin agency developed a participatory and voluntary aquifer management contract mobilising water users in various sectors. The initiative is still too recent for its impact to be assessed but it has succeeded in raising awareness and including a large spectrum of stakeholders into the process. However, it appears that the monitoring of the agreed code of conduct, which entails, for example, a prohibition of any increase in irrigated land, will be crucial for the aquifer contract's success.

Another unusual response to increasing water demand and overuse of the resource was the establishment of a PPP project. In 1995 the government, backed by King Mohamed VI and the World Bank's International Finance Corporation (IFC), decided to engage the private sector in irrigation. The project was the first of its kind in Morocco or anywhere in the world (IFC, 2004), since the private sector is responsible for mobilising and distributing water, including the building, financing and management of the infrastructure. A few words on the geographical setting and timeline will help understanding the scheme as shown in figure 1. In 1991, the Aoulouz dam with a total capacity of 110 million cubic metres (Mm^3) was built in the foothills of the Anti-Atlas mountains, a region mainly used by small farmers for olive, almond and wheat cropping. The dam was built for three purposes: securing drinking water supply to the city of Taroudant, providing water to the public irrigation schemes in the foothills and partly in the valley, and contributing to recharging the aquifer. However, due to increasing water demand and decreasing supply, the Aoulouz dam was not sufficient for providing water. In the context of the approved public-private partnership project mentioned above, a second dam called Mokhtar Soussi was built in 1998/1999. A wave of protest against insufficient compensation for the resettlement of local inhabitants delayed the dam's construction, which was finally operational in 2002. The Mokhtar Soussi dam was built for providing water to the El Guerdane area, one of the spots in the valley most affected by the declining aquifer and known for its (deteriorating) citrus fruit production. Water stored in this dam is released to the Aoulouz dam situated some 20 km below, and then conveyed through a 90 km pipeline to the project area to supply 45 Mm^3 of water to a gravity-pressurized network (see figure 1). This 300 km network irrigates 10,000 ha of plantation spread over an area of 30,000 ha. 670 local farmers and companies owning plots of land within the 30,000 ha project zone were admitted in the project. The beneficiaries of the project were to finance the procurement and installation of drip irrigation equipment in their fields, 60% of the cost being refunded by the basin agency. The costs of the dam, partially those of the pipe, and the subsidies for drip irrigation were thus financed via the public budget (see below). The farmers were also to pay the branch connections, subscription fees and water consumption at some €17,000 for a field of 15 ha. However, given the very dry climate, the water provided by the new project or that from rainfall would not be enough to irrigate the whole plantations, and farmers would still need to abstract from deep wells about as much water as they would receive through the irrigation project.

The process of selecting the beneficiaries was highly contentious. Many farmers reported that they were informed too late or did not receive any help with meeting the significant investment costs

related to project membership (as research interviews in the project area revealed). The list of project beneficiaries shows that farmers owning large plots of land are favoured by the project compared to those owning small plots. Our interviews revealed that financially strong farmers were using any means possible to acquire further land in the vicinity of the project area (including harassment and breaching trade agreements with small farmers) in the hope of increasing the area of their land irrigated by the project.

Figure 1. Schematic presentation of the El Guerdane project in its regional setting.



In 2004, the government called for tenders, and one of the two consortia that responded won the project. A BOT concession contract stipulating the 30-year management of the distribution of water and maintenance of the transfer and distribution infrastructure was awarded to the Omnium Nord Africain (ONA; that was merged in 2010 with the Société Nationale d'Investissement, SNI).[4] This group is structured around areas of strategic activity such as mining, agribusiness, distribution, financial services, telecommunications and renewable energies. The main shareholder of this key national economic actor – accounting for 30% of the national stock market – is the Moroccan royal family (Iraqi and Michbal, 2010). All important infrastructure and operational works are the responsibility of the ONA company, *Amensouss,* created for this purpose. A study of the PPP's financial structure shows that 42% of the

[4] Other members of the consortium financing the project are Morocco's Caisse de Dépôt et Gestion, France's Compagnie Nationale d'Aménagement de la Région du Bas-Rhône et du Languedoc, and the Saudi-Arabian branch of the Austrian firm InfraMan (Infrastructure Development and Management). For further details on the partnership agreement and its implications see Houdret, 2010.

US$80 million investment costs have been met by the royal 'Fondation Hassan II', which was set up for charity and development purposes. While the foundation's initial capital stemmed from the sale of mobile phone licences in the country, it now administers public funds under the supervision of King Mohamed VI without any parliamentary control. Hibou and Tozy (2002) show that similar methods are applied in various sectors of the Moroccan economy, enabling the King to control significant investments in politically and economically strategic sectors. In the present case, public money obtained from the selling of licences was thus invested for the private benefit of a company largely owned by the royal family. Another critical aspect of the financial scheme is the sharing of risks associated with the project. Interviewees, including representatives of governmental agencies, estimated that the volume of water obtained from the reservoir forming part of the project and stipulated in the concession contract is far too high, given the expected average storage. The risk of water shortage is therefore highly probable and poses a severe threat to the project – even if rainfall has increased and thus alleviated pressure on water resources in the valley in recent years. The concession contract stipulates that this risk is shared by the concessionaire (the company carries the costs for a revenue loss of up to 15%) and the farmers (who pay an extra water fee for losses between 15.0 and 22.75%). The public partner in turn is to compensate the company for losses of over 22.75%.

No serious evaluation of El Guerdane's real ecologic and socio-economic impacts in and around the project area has yet been undertaken. As farmers will need to supplement the water they obtain from the project by private drillings, the depletion of the aquifer will most probably continue. The sustainable use of the resource – a key objective of the regional basin agency – thus becomes questionable. Water savings achieved in the valley through the successful expansion of micro-irrigation will not help to alleviate resource stress as long as the water saved is used to irrigate new farms or plantations on existing irrigated land that consume yet more water. Moreover, the project implicitly legalises private tube wells drilled by its members, even without prior approval. The following section considers how farmers outside the El Guerdane project area (such as those living along the canal, or in the vicinity of the project in the valley) are affected by the initiative.

The dynamics of marginalisation: Increasing disparities in access to water, income and livelihoods

Since the very beginning of export-oriented and water intensive agriculture in the Souss valley during the colonial period, a process of land concentration has been observed in the region. Dijon (1969), for instance, has already mentioned that "in the valley, the sale of small landowners' irrigated land and gardens slowly leads to an increase of the land owned by a few local *notables*" (own translation). Increasing water scarcity with respect to the demand for irrigation in the Souss valley contributed to the marginalisation of farmers who could not invest in expensive drip irrigation or deeper tube wells, or whose fields were too small for such an investment. As elsewhere, access to groundwater tended to benefit larger farms and to worsen disparities (Mukherji, 2006; Shah, 2009; Kuper et al., 2012). The mostly small-scale farmers relying mainly on rain-fed agriculture to grow olive trees, wheat or fodder had comparatively modest incomes, while owners of large plantations who invested in drip irrigation and tube wells quickly expanded the area they were cultivating. These local farmers as well as new investors from urban areas often bought land from small-scale farmers and invested in large agribusiness firms exporting mainly tomatoes and citrus fruits, which further accentuated the existing inequality of land distribution (as demonstrated by this field study, and others in Bouchelkha and El Madani, 1996, and ElMahdad, 2003). While small-scale farmers were thus already marginalised before the implementation of the PPP project, the latter reinforced the inequalities. The project imposed new restrictions on local small-scale farmers by reducing the availability of underground and surface water. The PPP, moreover, restricts access to land as speculation has tremendously increased the prices of land in the area. Furthermore, the large pipe was built on land of many small-scale farmers whose plantations were even partly destroyed. In the uphills, the construction of the Mokhtar Soussi dam and the pipeline close to the small city of Aoulouz denied thousands of small farmers (who formerly relied

on water from the hills) access to the resource. Moreover, during the construction phase, the public drinking water system was severely damaged several times. Unable to secure their livelihoods entirely depending on irrigation water, many villagers left the area to seek work in urban areas or abroad. Only some farmers in the vicinity of the Mokhtar Soussi dam were able to officially register their traditional water rights (see sector G1 in figure 1). They successfully negotiated their access to water and will benefit from 18 Mm^3 of water yearly from the Aoulouz dam for irrigating 4450 ha. However, this will only be sufficient for irrigation if farmers equip their fields with drip irrigation – a costly and often complicated change for the traditional farmers of this area. Besides these significant socio-economic impacts, the abandonment of land has also contributed to the desertification of formerly cultivated land and has reduced the area of pastureland. The farmers were either inadequately or not compensated for the land confiscated for the construction of the two dams and the PPP water pipeline. While the expansion of export-oriented agriculture increased employment in the region, working conditions in large agribusiness companies are far from satisfactory: high rates of informal employment, low salaries, no social security and dangerous work with toxic products are typical of this sector. Of its 70,000 employees, 70% are women, and only 15,000 workers are formally registered (Raimbeau, 2009).

Empirical evidence shows that water scarcity affects farmers in the Souss valley very differently: while they had all suffered losses of previously fertile land, small-scale farmers (owning plots between 0.1 and 3 ha) were particularly hard hit (for this and the following figures see Houdret, 2010). Within 10 years, they were forced to transform 36% of their irrigated land into rain-fed land, whereas farmers owning 20 ha and more lost only 20% of their irrigated land. Difficult access to water for small-scale farmers affected crop yields and revenues, since their inability to invest in tube wells[5] and drip irrigation forced them to increase the proportion of rain-fed land[6] and so to shift to less lucrative crops. These results confirm a trend observed in the same region by ElMahdad (2003), who concluded that large landowners account for only 6% of the farmers in the Souss valley, but control 32% of underground water resources. Small-scale farmers, accounting for 62% of all farmers, but cultivating only one third of the land, control barely 13% of the underground water resources (ElMahdad, 2003). Further results of the research in the Souss valley show that small farmers also suffer from more difficult access to credit and to lucrative marketing structures. Both factors further weaken their capacity to cope with increasing water scarcity (also related to climate change) and declining soil fertility. In the area studied, very few small farmers had access to off-farm sources of income, such as small jobs in services, taxi driving, trade or remittances from migrant relatives (Houdret, 2010). At the same time, the growing involvement of these farmers in milk production and livestock-farming may provide alternative sources of income.

Finally, neither the government nor the private company initiated measures to compensate farmers affected by water restrictions due to the project. According to the project rules, even farmers who have secured their water supply and will be supplied by an additional canal from the dam must invest in costly drip irrigation and change their production accordingly. In spite of subsidies of 60%, many are finding it difficult to switch to the new type of irrigation, because they must first find the whole amount and pay for the branch connection, and often have less than 5 ha of land, the minimum size for such an investment to be cost-effective. In addition, unclear ownership structures or the absence of land property titles often obstruct small farmers' access to credits and subsidies.

The El Guerdane project is an example of *water grabbing* through reallocation, causing increased ecological and socio-economic marginalisation (Houdret, 2010). Water grabbing is happening here because of the reallocation to citrus plantations in the valley of water formerly used by small farmers and drinking-water users in the hills. The project also prioritises its members in groundwater use as it

[5] Given their greater depth, tube wells are far more expensive to drill and maintain than normal wells. In the Souss Valley, however, tube wells reach depths of around 200 m, compared to the 40-100 m for conventional types.

[6] While farmers relying on public irrigation supply or simple wells had either to abandon their land or to change over 62% of their irrigated land back to rain-fed agriculture, those owning boreholes lost only 33% of their irrigated area.

legalises existing drills and allows for new ones. At the administrative level, reallocation entails an allotment of a fixed volume of water to the project and its private operator by the basin agency at the expense of the volume administered by the irrigation authority, ORMVA, whose mission is to develop and administer the land used for agriculture, including rain-fed land. Consequently, statements by ORMVA staff show that they see this as questioning their institution's legitimacy and competence (Houdret, 2010). Furthermore, the expansion of irrigation systems has also reduced the opportunities for cattle-breeding, a traditional form of investment and financial security for farmers in the region (Malouki, 1996). The reallocation of water therefore also entails a reallocation of land.

The water reallocation or grabbing has a major influence on land use, even though 'land grabbing' in the proper sense of the term is limited, since most land is still owned and cultivated by the farmers. While some cases of forced land acquisition by influential farmers have been reported in the project area, the more common phenomenon is indirect influence on land use (forced extension of rain-fed agriculture or the abandoning of land in previously irrigated areas now short of water) and control over land use (the obligation on farmers in the PPP area to cultivate citrus fruits). However, this phenomenon is certainly embedded in a longer-term process of arable land concentration in the valley: with the increasing economic importance of the valley as a strategic area for lucrative export agriculture, many small farmers have left the region, since unclear property titles, a lack of capital, and overly complex administrative procedures for obtaining credits or subsidies have not allowed them to access money for the required investment in irrigation (Bouchelkha and El Madani, 1996). While regional rainfall has increased in recent years and helped to fill the reservoirs, it has apparently not been enough to replenish the aquifers. Extreme weather events, such as violent rainfall and late, cold winters, have also had adverse effects on local agriculture. In the winter of 2011/2012, not enough rain fell anywhere in the country (until April).

A detailed analysis of these dynamics shows that the king and his entourage have supported the PPP and benefit from its financial return and its strategic position on the market. International financial institutions have encouraged and facilitated the project. At the political level, the project implementation process was inconsistent with the principles of the 1995 water code (Water Code 10-95), which requires the efficient and participatory integration of water users in water management, whereas local water users and people affected by the project had no say in either its approval or its implementation. A key aim of this participatory principle of the water law was, however, to help prevent conflicts between users during the dry season – an issue that might also be relevant in the project case. Economic control of the country's key sectors plays an important role in the royal family's political agenda and increases its power over the political apparatus (see below). The PPP project also shows how the allocation of financial and natural resources, or the failure to allocate them equitably, and the related risks lead to water grabbing and influence land use. The key developmental objectives of irrigated agriculture – to create and maintain income opportunities and livelihoods in rural areas – are at serious risk in the Souss valley. The creation of jobs in agribusiness does not, as described above, provide credible alternatives to small farmers. The erosion of income and livelihoods, often coupled with the loss of landed property and migration, is a significant contributory factor in socio-economic destabilisation. The following section addresses related conflict potentials.

Conflicts over water and their resolution

An indirect consequence of the reallocation of finite water resources, and sometimes not readily perceived as such, is the growth of water-related conflicts. Marginalisation processes are the root causes of these conflicts and have existed prior the PPP implementation. However, as our study reveals, the project further compounded these trends by restricting access to land and water for the majority of the farmers. This section looks at different types of conflicts observed in the Souss basin and often linked to the PPP project. The four types of conflict analysed here are those between drinking-water users, those between drinking- and irrigation-water users, those over irrigation water between small-

scale and large-scale farmers, and conflicts between farmers and the irrigation authority. However, not all findings can be detailed here; the in-depth survey is available in Houdret, 2010. The analysis reveals that farmers marginalised in terms of access to land or water, or of socio-economic well-being, are more often involved in water conflicts than others. As explained in the introduction, all water conflicts – ranging from verbal disagreements through sabotage to violent confrontation – are considered here. As very few of them are brought to the attention of formal bodies, a local survey like the one conducted in this research is the only way to assess their frequency and background.

Precarious access to groundwater or surface water resources, or lack of it, is the most common reason for water conflicts in the Souss valley. While few of these conflicts involve water users in the same user group, many more arise between large- and small-scale farmers (see above for sizes of plots). Deep drilling by agricultural investors and the use of modern technology for abstracting water cause shallower wells used by small farmers and villagers to dry up. More than 60% of small farmers claim to be involved in a water conflict with owners of large farms at least once a month.[7] Small farmers are far more dependent on public irrigation infrastructure in the valley and in the foothills, and often suffer from insufficient supply leading to competition over access to the resource. Poorly performing wells further affect water supply and these factors may explain why this group is frequently involved in conflicts. Empirical evidence shows that 75% of the farmers who have access only to public water supply or wells are involved in a water conflict at least once a month. The conflicts may involve violence or find expression in a non-violent disagreement over the distribution of, and access to, water. Conversely, as large-scale farmers benefit from private water supply through tube wells as well as improved water mobilisation and distribution, they are less dependent on other farmers and public agencies. Owners of tube wells are thus far less frequently involved in water conflicts: between once and ten times a year.

The survey also shows that farmers who have been forced by scarcity of water to convert large proportions of their land from irrigated to rain-fed agriculture are more often involved in conflicts than those who have been able to secure their irrigation supply. This confirms the key importance of irrigation in the region, rain-fed agriculture in most years being unable to ensure a livelihood. Another likely reason for this is that any further water restriction immediately threatens farmers' livelihoods and therefore prompts them to engage in conflicts. This observation again confirms that growing marginalisation also increases the risk of conflicts where adaptive capacities or compensatory measures are inadequate.

The monopolisation of water resources by the Guerdane transfer pipeline and the construction of the two upstream dams at Chakoukane and Aoulouz have further increased the risk of conflicts and have partly provoked a violent escalation of tensions. During the construction of the first dam, Aoulouz, in 1998-99, violent confrontations broke out between the police and local farmers refusing to quit their land. Since then, soldiers have been stationed in army barracks adjacent to the dam to safeguard the site. In 2007, the construction of the transfer pipeline for the El Guerdane project again led to protests. The insufficiency or the absence of compensation for the loss of land, the severely restricted availability of water, and the destruction of olive and fruit trees on farmers' land have fuelled tensions. This resulted in the sabotage of project facilities, blockades of the construction work, and violent confrontations among farmers. Following the restriction of water availability after the dam had been constructed and the pipeline laid, conflicts between members of irrigation user groups have also increased. Conflicts have also occurred between the operator of the PPP, the *Amensouss* company, and farmers within the project area. Disagreements over the proportion of land to be included in the project area, the lack of transparency of water allocation, and land inclusion processes, as well as the compulsory introduction of drip irrigation within a certain period have led to often heated debates and

[7] In contrast, in the categories of owners of *larger* plots (10-20 and over 20 ha) only 36% of the interviewees are involved in such conflicts every month, the majority far less frequently. This and all the following figures are derived from Houdret, 2010.

protests. Finally, the public irrigation authority ORMVA has had to deal with further restrictions of water supply for its clients, since the PPP is privileged by the basin agency in terms of allocation priority.

As this brief overview above shows, many different actors are involved in water conflicts in the Souss valley. Consequently, resolving these conflicts is not always easy. Our survey revealed that approximately one third of all water conflicts remain unresolved and regularly flare up again. The success or failure of, and intervention in, these conflicts largely depend on the legitimacy of the mediator. While local notables and non-governmental organisations (NGO) have relatively good prospects of mediating successfully in conflicts, the local irrigation water authority and local politicians have seldom succeeded in settling disputes. However, while local notables find durable solutions for 25% of irrigation water conflicts, they are accused of deciding in favour of large landowners. How far the various mediators are trusted therefore largely depends on the type of farmer: while large landowners trust public authorities or notables, smaller farmers' interests are best represented by local NGOs that also engage in conflict resolution. While the local *caid* (local representative of the Ministry of Internal Affairs) is formally responsible for resolving local conflicts, mainly through informal intervention, our survey shows that he often fails to enjoy the necessary trust of small farmers and so seldom contributes to the lasting resolution of conflicts in which they are involved. The study of water conflicts and their resolution further reveals that vertical conflicts, that is, conflicts involving actors at different administrative levels or between richer and poorer farmers, are much more difficult to resolve and often re-emerge after attempts at mediation. Small-scale local farmers, in particular, express very little confidence in local public authorities or politicians, but trust notables and NGOs more, suggesting that informal governance and conflict resolution play an important role. It also confirms that the legitimacy of elected leaders is poor. It appears that alliances between financially strong farmers and national politicians or public authorities have considerable influence on these water conflicts and hamper their resolution. However, conflicts between more homogeneous groups, such as irrigation- or drinking-water user groups, are more often successfully mediated. Despite the success of different mediators, the generally very weak success rate in the sustainable resolution of the different types of water conflicts is alarming. In our survey of the El Guerdane region, 32% of conflicts between drinking-water users, 58% of those between drinking- and irrigation-water users, 61% of those between small- and large-scale farmers and as many as 98% of the conflicts between farmers and the irrigation authority remain unresolved.

While the results of these surveys indicate that various state actors enjoy little trust, these responses are also a sign of greater freedom of expression in Morocco. Under the late King Hassan II, open criticism of political leaders or public policies and even disappointment at the lack of support from the King for small farmers' concerns of the kind we encountered during our interviews would have been inconceivable.

STRUGGLES OVER WATER, STRUGGLES OVER POWER: WATER MANAGEMENT AS A FACTOR OF POLITICAL (DE)STABILISATION IN MOROCCO

A few words on the role of the agricultural sector in Morocco will make for a better understanding of the links between land, water and power and of the struggles over their control. While Morocco is a water-scarce country (917 m³ of renewable water resources per capita per year; FAO, 2008), the social, economic and political role of the agricultural sector is very important: 46% of the active population work in this sector (80% in rural areas) contributing 14% of GDP (MEF, 2010). The sector's serious exposure to climate variability causes fluctuations in its economic contribution: its share of GDP ranges from 11% in water-scarce years to over 20% in years when the climate is favourable (Akesbi, 2005). Small farmers form a large majority of Morocco's growers: 70% of the plots of land have an area of less than 2 ha (MADRPM, 2008). After the country gained its independence in 1956, King Hassan II decided to increase the construction of dams and irrigated areas significantly. The agricultural sector was

dominated by central planning and far-reaching protection measures for the local market, leaving little scope for the individual farmer. National self-sufficiency in food production was a key goal at that time. Besides the agricultural development of his country, the King's political interest was to retain control of the often rebellious rural population (Pascon, 1980). An elaborate system for allocating arable land and access to water to local notables in exchange for their support and control services allowed him to build a strong network, securing loyalty and keeping the rest of the rural population under surveillance (Hammoudi, 1997; El Jihad, 2001). The agrarian reform and the redistribution of the former colonial settlers' land, for instance, served this purpose. Local notables also controlled state-initiated farmers' organisations responsible for irrigation or marketing. King Hassan II's policy of 'one million ha of irrigated land' raised agricultural production further, but clearly served to privilege a certain elite group, who benefitted not only from access to land and water but also from considerable investments in infrastructure. However, other parts of the country remained neglected (Pérennes, 1993; Akesbi, 1996). A number of authors have shown that the political legitimacy and the stability of King Hassan II's regime depended heavily on these political alliances between the royal family, local notables and large landowners (Leveau, 1985; Pérennes, 1993). A closer look at the system of 'give and take' between the elites and the royal family reveals how these often technical processes are embedded in daily social behaviour and relationships (see Hammoudi, 1997; El Maoula El Iraki, 2003). As Destremau has shown, these observations are also valid for other processes in Morocco (and surely in other countries, too), such as the fight against poverty: "[i]t should be added that the conflict also concerns the political content of this agenda, technocratic measures often being proposed as part of the scientific and modern welfare machinery, in an attempt to disconnect it from acknowledged political interplay" (Destremau, 2005).

While self-sufficiency in wheat and sugar was a key goal after independence, the liberalisation of agricultural policies since the 1980s has led to considerable changes in the sector. By liberalising the sector and cutting subsidies and public expenditure, the structural adjustment programmes initiated by the international financial institutions caused major difficulties for numerous small farmers, who found their livelihoods under threat (Desrues and Moyano, 2001). Rapid urbanisation was one of the results, but the population in urban areas already suffered from decreasing investments, growing unemployment, and a doubling of the poverty rate (Gouitaa, 2006). In the countryside, the growing of lucrative export products such as citrus fruits and vegetables led to the rapid development of companies to handle them and favoured the expansion of large farms. However, throughout the transformation of the agricultural sector, its political relevance and the close ties between the rural elite, large landowners and the royal family remained intact – even if the composition of the elite and the 'carrot and stick' have changed. Today, the 'Green Morocco Plan' determines agricultural policy. Launched in 2008, it values the importance of the agricultural sector for the country and places its modernisation high on the national and international agendas (ADA, 2009). Its aim is to support the sector in two ways: by developing large-scale agriculture with high value-added production and by assisting vulnerable actors and combating rural poverty through the improvement of small-farm incomes. However, the plan has been harshly criticised. A foreign consultancy was commissioned to draw up the plan, and it has not been published in its entirety or publicly discussed, or endorsed by independent experts. Consequently, adherence to the plan leaves much to be desired (Le Cercle, 2010). One of the key criticisms, moreover, is that the €50 million or so to be invested between 2008 and 2018 is largely earmarked for the 'First Pillar' of the project and favours large-scale agriculture at the expense of the majority of Moroccan farmers cultivating small plots of land. The plan also states that agricultural incomes are exempt from all taxation until 2013, which mostly benefits large investors. Privileging the 'First Pillar' is also likely to make the country even more dependent on import of staple foods (Akesbi, 2011). The proposed leasing of more land to private investors may also have adverse effects on pastoralism, rangeland and livestock production and further destabilise the vulnerable nomadic population.

Since the post-colonial period and the structural adjustment programmes, Morocco has undergone immense changes. Especially since King Mohamed VI succeeded to the throne in 1999, political pluralism and democratisation have led to greater transparency (despite the problems that remain, especially with respect to anything related to the royal family) and a very active civil society. The rapid development of infrastructure, economic growth, the high rate of urbanisation, and the emergence of a new, well-educated generation creating new businesses have also contributed to these changes. Major development programmes have contributed to a substantial improvement in access to water and electricity infrastructure in rural areas, and the absolute poverty rate fell from 35.4% in 2000 to 23.2% in 2007 (Bibi et al., 2011). In the agricultural sector, technical innovations such as tube wells and drip irrigation have helped to reduce dependence on public irrigation schemes, especially in dry areas and of financially stronger farmers.

Political alliances of rural elites and the royal family have also changed but they are as important for political stability now as they have ever been. However, the allocation of water and land has changed and is no longer the only instrument used in forging these alliances. The expansion of private agribusinesses, for example, also depends on export licences, the tolerance of illegal drilling, the approval of property expansion, subsidies and the overall agricultural policy. Even today, therefore, the agricultural sector provides enough opportunities for a system of 'give and take'. Moreover, several large landowners are now members of parliament or hold key positions in the food industry, which adds even more weight to these social networks. Rather than being just growers, many of them now control entire production chains. Given the political and economic roles of these individuals and the progress of the democratisation and decentralisation processes, it can be said that the role of rural notables as key pillars of the monarchy's power in rural areas is slowly shrinking. Their place in the agricultural sector and elsewhere is being taken by a new economic elite operating at local, national and even, in many cases, international level (for a historical view, see also Brahimi, 1992 and Hammoudi, 1997; for the urban areas, see El Maoula El Iraki, 2002; for civil society, see Bono, 2012). These past and current trends, briefly summarised here but analysed in depth by the authors cited, reflect the links between the development of infrastructure, resource allocation, and political alliances. Placing our study of the El Guerdane project in this broader context enables four key observations on the links between water management or 'grabbing' and socio-political relations to be highlighted:

- First, the study of the PPP shows that the control of water resources, especially in a water-scarce and strategically relevant region like the Souss valley, is still important for the exercise of political power, perhaps more so now than before. This is also because agriculture has become a lucrative business – not only for exporters but also for those producing for the internal market, and especially such actors as the ONA that controls entire production and marketing chains. Although water governance is today more decentralised (through the creation of basin agencies) and to some extent directly managed by its users (through the implementation of water user groups and private drilling), key decisions on the allocation and use of water continue to benefit the influential elite.

- Second, the case study highlights that mobilising and allocating water through a private actor is not less, and maybe even more, political than public water management – and not more sustainable. Moreover, it makes access to water for the most vulnerable more difficult and leads to new forms of water and land grabbing and social conflicts. This political and social evidence is however often hidden by a technocratic discourse on water scarcity and the supposed benefits of private-sector involvement. Water scarcity, even though clearly caused by overexploitation, is therefore often discussed as a 'malfunction' of nature, and the concession to the private sector as the only appropriate solution. In this context, as Mehta (2011) points out for another case, "scarcity is not seen as the result of powerful actors getting away with resource appropriation and thus enhancing degradation".

- Third, the PPP exemplifies the rise of new economic elites partly comprising existing landlords in rural areas and often other economic actors in the agricultural sector, including foreign investors. The composition of the rural elite is thus undergoing major changes – traditional notables in many cases lose influence while investors increase their economic and political scope of action. Nevertheless, most of these actors are still close to the royal family and its networks. Several large landowners with property in the El Guerdane project area, for example, are also shareholders in ONA, which owns the *Amensouss* company, the operator of the PPP.
- Last, the the PPP is evidence of the critical role of public institutions, currently relegated to acting as observers and insurers. On the one hand, the slowly improving legitimacy of those institutions, the progress of decentralisation, and the growing role played by civil society all suggest improvements in overall democratisation, and on the other, projects such as this PPP clearly restrict the role of public and democratic institutions in related to the project and reveal the predominance of the King's influence. The consultation of public institutions at local and national levels has remained very limited, while, at the same time, public funds are being used to partly fund the PPP and, when the need arises, to compensate the private (royal) company. At the local level, despite the general democratisation of the country, projects such as this PPP are contributing to exclude water users from political decision making and democratised water management. Small farmers and villagers who depend on wells for their drinking water supply, for instance, did not have a say in the project and have to bear its consequences.

It appears that current political and economic transformations in Morocco are still determined by political alliances; however, these may change over time. The civil society and the independent private sector carry little political weight in this context. Yet recent socio-political changes during the 'Arab Spring', together with other, less recent developments, indicate new opportunities for previously marginalised actors to regain control over water, their livelihoods and some power.

The 'Arab Spring' has not been very violent in Morocco, which may be due to the comparative welfare, the less autocratic system and the King's timely (though limited) reactions. Since the 1990s, for example, civil society has gained significant room for manoeuvre, even if political restrictions, as imposed on the media and human rights organisations, persist (Amnesty International, 2011). The number of local associations has increased spectacularly, and they are working to improve living conditions, often benefitting from public grants from such sources as the National Human Development Initiative.[8] At the national level, while Morocco's constitutional monarchy has many deficiencies progress towards improved human development and democratisation is tangible. However, the King's control of the country's key economic sectors remains intact and continues to grow (Tel Quel, 2004; Iraqi, 2010). Morocco's current economic situation is difficult, and many observers warn of the possibility of adverse effects on social cohesion and political stability. With an economy heavily involved in international trade, Morocco has been particularly hard hit by the economic crisis in Europe: declining remittances from Moroccan migrants, a fall in the number of tourists, declining exports to Europe and higher prices paid for imports, mainly affecting primary goods such as wheat, sugar and cooking gas (Najar, 2012; Shem, 2012).

While much could be said about recent protest movements and subsequent (limited) reforms, the aim of this paper is to focus on rural areas and the farmers affected by water and land grabbing. As stated above, changes in the agricultural sector and in Morocco's political system are having major impacts on farmers' living and production conditions. Given the current dynamics of political change in sectors such as agriculture, previously marginalised farmers have new opportunities to regain control

[8] However, as researchers point out, this is also creating new opportunities for local elites to monopolise funding and its distribution within their networks, and some 'NGOs' have been set up by civil servants, while others, established by members of the opposition, have never been approved and/or permitted to receive funds (as the author was personally informed by persons affected by the process).

over water, their livelihoods and potentially some (political) power. The state's partial retreat from the irrigation schemes, the emergence of a vibrant civil society, the number and success of decentralised development projects, and the valorisation of local products in some regions have helped to increase the autonomy of small and medium-sized farmers and to enable them to acquire a new image of themselves. Although top-down management still prevails in most irrigation schemes and in the water and agricultural sectors as a whole, opportunities to negotiate on individual interests and to set up new and effective cooperatives are being seized. Faysse and others describe this process of farmers "voicing their opinion" and the development of political capabilities at local level. They also point to the opportunities for farmers, large and small, associated with the transformation of agricultural production processes and the increasing relevance of professional organisations (Faysse et al., 2010). However, the future will also depend on the overall political situation and any further concessions made by the country's political and economic powerhouse.

CONCLUSION

This study of the El Guerdane PPP project confirms that water and land management express socio-political relations, and that the 'grabbing' phenomenon has a potentially significant impact on these relations. Using water conflicts as a lens allowed us to gain a better understanding of the 'grabbing' phenomenon and related socio-political, economic and ecological dynamics. The analysis of the financial and political architecture of the PPP project has revealed the royal family's influence and the strategic use of water reallocation to oblige elites and to strengthen a private sector dominated by the King. The unequal sharing of benefits and risks at the expense of the public sector further supports this analysis. The case study revealed that the socio-economic marginalisation of local farmers is closely linked to insufficient and unequal access to natural resources. The resulting conflicts clearly stem from structural inequalities, further accentuated by the increasing scarcity of water faced by small-scale farmers and general political discontent.

Affected farmers and villagers, whose already vulnerable sources of income are further threatened by the project, have not, as a rule, found competent and legitimate mediators capable of resolving conflicts; nor do they trust formal authorities or previously influential informal institutions. The study indicates that the legitimacy of local political leaders is limited and that formal institutions are not trusted to deal with the growing threats to livelihoods or to manage related conflicts. While, in recent years, financial support for local development initiatives, increased scope for action by the civil society, and timid reforms of the political system may have helped to weaken opposition movements triggered by worsening living conditions, these changes have left the fundamental inequalities as they were. As the case study shows, alliances between financially strong farmers, politicians and the royal family often exclude small farmers from decision-making processes related, for example, to water management, local infrastructure and economic or agricultural policies. The PPP established in the Souss basin has even exacerbated these trends for the majority of the local population, resulting in some violent conflict.

However, opportunities for local empowerment are also emerging as new forms of collective water management and marketing emerge and as the decentralisation of water governance progresses. Furthermore, marginalised farmers are now increasingly voicing their concerns and occupying larger social and political platforms by joining other protest movements. The voicing of farmers' concerns by human rights organisations in the Souss valley and the claims of broader protest movements, such as the Movement Against High Living Costs and the 20th February Movement, show that many of the marginalised farmers' concerns are shared by other population groups. The embedding of the farmer's concerns into a wider context of political discontent with high living costs, high rates of unemployment, especially among young and often well-educated Moroccans, and inadequate political reforms may further strengthen the convergence among different protest movements, even if no influential farmers' organisations exist as they do in other countries. The evolution of this potential for conflicts is likely to

depend on three main factors: the government's ability to strengthen vulnerable farmers by improving alternative income opportunities and giving them sustainable access to natural resources; progress towards improved political participation and social equity, countering the impression that the elites live at the expense of the majority; and an improvement in the King's and political leaders' legitimacy and credibility in providing the two above-mentioned types of opportunities.

El Guerdane also reveals the potentially harmful effects of a PPP on local livelihoods and political stability. The initiative is promoted as a technical, financial and managerial innovation by local and international actors but is, in fact, no more than a new form of political control over the allocation of natural resources and related profits. This may not have a major impact on social stability in years when the weather is favourable, but will certainly lead to increased tension in dry seasons, when competition over water is high. Nevertheless, the case increasingly seems to serve as a blueprint in international debates (see Darghouth et al., 2007; Jagannathan et al., 2009; GWP, 2010). In Morocco alone, several other PPPs in the agricultural sector are being implemented, including one supported by the World Bank's IFC in the Chtouka area (also part of the Souss Massa region) and entailing the construction of a desalination and irrigation plant. El Guerdane suggests, however, that more attention should be paid to the sharing of benefits and risks between the public and the private partner and to social and environmental concerns about ensuring the durability of such initiatives and precluding any potential for conflicts or destabilisation. So far, the comments made by international development banks and the IFC on the El Guerdane experience have been largely positive, although no independent impact assessment, especially with regard to the medium- to long-term ecological and social costs and the population affected outside the project area, has been undertaken.[9] The social risks considered are limited to potential problems between water management institutions and stakeholders, and problems associated with capacity-building, but effects on non-beneficiaries and the risk of conflict are not considered (see the World Bank's assessment in Darghouth et al., 2007). Since the 2000s, international development banks have advocated an increase in the number of PPPs, since they expect them to increase water efficiency and relieve the state of financial and administrative burdens (Winpenny et al., 2006). However, a systematic assessment of the environmental and social sustainability of PPP projects in the irrigation sector would certainly help to redefine these forms of cooperation. This is even more important in the context of the current hyperbole surrounding the 'green economy' and the calls for the private sector to play a greater role in the management of natural resources.

The case study has made it clear that 'water grabbing' and the reallocation of natural resources also reflect a political and social process. It shows that the agenda underlying the 'grabbing' phenomenon is much broader than mere economic interest in exploiting land or selling water. Instead, these activities express and support the interests of the political elite and the stability of the regime. Benefits of the 'grabbing' phenomenon are therefore manifold and can be of an economic, material, social or political nature. Research on water and land grabbing therefore needs to consider the underlying political agendas, socio-political relations as well as structural causes of marginalisation. Further research is also needed to have the 'grabbing' phenomenon systematically analysed, ideally from a comparative perspective, in terms of the potential (de)stabilisation of political regimes. Furthermore, the Moroccan case reveals how the control over water allocation is a strategic element of a national (royal) agenda and is – whether deliberately or not – embedded in international policies. The context of recent transformations in the Arab world and subsequent changes in the water sector are fascinating entry points for further studies of these issues.[10]

[9] Existing impact assessments include those by the project's operating company, Amensouss, which cannot be considered independent. International donors and policy-makers outline the limits to their observations with such statements as the following: "[i]n Jordan as in Morocco PPP projects resulted in decreases in government expenditures and improvements in the water utility performance, reductions in unaccounted for water, higher water revenues, and lower operating costs, coupled with extensive staff training and use of geographic information systems and information technology" (GWP, 2010).

[10] In Tunisia, for example, many presidents of the irrigation water user associations were replaced in the aftermath of the revolution. These changes have usually brought power to people who were not close to the previous political regime.

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