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Making small-dams work: everyday politics around irrigation cooperatives in Turkey.

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Studying small-scale irrigation projects: from national goals to the shaping of local arrangements

- 1 In Turkey, many studies have analysed the environmental dimensions of state-led development projects from the perspective of controversies. For example, recent works have focused on conflictual state-led hydraulic projects, in particular on the emblematic case of the south-eastern Anatolian project (Bischoff, Pérouse 2003; Harris 2009, 2012; Lelandais 2014; Bazin, de Tapia 2015). In the fields of political economy and political ecology, large hydraulic programmes have often been used as an entry point to reveal tense state-society relations, the legitimisation strategies of successive Turkish governments and state administrations, as well as the social and environmental impacts of dams or large-scale water transfers (Harris 2008; Hommes *et al.* 2016; Bilgen 2018; Akıncı *et al.* 2020). Recently, a great deal of research has also been carried out on the development of small-scale projects in Turkey, particularly on the '*explosion of investment in SHPs* [small hydropower plants]' (Erensü 2011: 3). It focused on public-private relations in the commodification of water (İslar 2012; Sayan, Kibaroglu 2016; Eren 2017) and local forms of resistance to these projects (Aksu *et al.* 2016; Kavak 2016). Therefore, this research has often analysed the oppositions between state planners and a resistant local society. However, it has also contributed to showing how these relationships can evolve over time in the case of open conflicts, for instance when new allies are found and opposition is broken (Evren 2014).
- 2 This paper builds on and extends the challenging analyses proposed by critical environmental research in Turkey by studying power struggles involving both state agents and local actors during both the implementation and the everyday management

of small-scale irrigation projects that initially seem less controversial. Such projects received much less attention than large-scale projects or openly contested projects. Yet, we argue that in order to better understand the varied ways of governing by the Turkish state, it is necessary to study not only exceptional projects and conflicts, but also ‘ordinary’ and dynamic processes of transactions and arrangements around the operation of public policies (Harris, 2009; Aymes *et al.* 2015; Massicard 2019). Such complementarity further helps counter oversimplified interpretations of the domination of the Turkish State over society, a relationship that is too often considered as stable rather than dynamic (Watts 2009).

- 3 This article focuses on a recent nationwide water resource development programme involving the construction of ‘1000 gölet in 1000 days’ all over the country. *Gölet* are reservoirs with a capacity of 0.5-1.5 million cubic metres of water, stored by small dams generally built in the hills and piedmont for irrigation at the village level (Le Visage *et al.* 2018). The former minister of Forest and Water Affairs Veysel Eroğlu launched this programme in 2012 to facilitate a rapid transition to irrigation in rural areas which were not part of the state-build large-scale irrigation schemes. This article demonstrates the value of studying the implementation of such a top-down programme at the local level¹ to shed light on the everyday politics that occur around *gölet*, as their management must be transferred from state planners to local takers across a thousand scattered villages. It reveals the networks of actors involved in irrigation development and their ‘ways of doing’ to make small-scale projects work according to their own interests (de Certeau 1990). It focuses more specifically on the shaping of local water institutions (here understood as social arrangements, Cleaver 2012), which mirrors the ordinary practices of both the irrigators and the engineers of the hydraulic administration. We hypothesise that despite their tense relations, they sometimes share similar viewpoints regarding the importance of irrigation for rural areas, thus helping to facilitate the implementation of these projects. More generally, while highlighting the scale of the *gölet* programme – one grand programme, but with many small local projects – this study seeks to enrich the debate on the co-production of public action by questioning the spaces and spatialities of the socio-state dialectic.
- 4 This article first brings together the literature that helps rethink the shaping of state-society relations in Turkey and research dealing more specifically with the planning of water resources in rural areas. We highlight the highly political dimension of the ‘1000 *gölet* in 1000 days’ programme and the ways in which small-scale infrastructure materialises the idea of a powerful state in rural areas. We then argue that the scalar specificity of the *gölet* nevertheless compels agents of the hydraulic administration to negotiate the transfer of the management of these reservoirs to local actors in order to implement this programme and make the projects work. Taking the irrigation cooperatives in the Izmir region as a starting point, we show how their shaping reveals broader power relations, especially when already powerful local actors try to obtain the management of the *gölet* and new actors appear in negotiations with administrations as well as in the political sphere. Finally, as social arrangements are embedded in broader social and political contexts, we argue that the study of relational configurations at the very local level challenges visions of a monolithic state disconnected from homogeneous local communities and helps unravel the complex and varied ways of governing in Turkey.

Approaching everyday politics in irrigation development projects

Water studies and the shaping of state-society relations

- 5 To better understand the role of social dynamics in the definition and implementation of state policies, this article analyses the everyday politics that occur during irrigation projects. Everyday politics are understood as dynamic processes with an interpenetration of the administrative, political and social spheres (Gourisse 2015). Considering the porosity of the frontier between “State” and “society” and elusiveness in their interactions (Mitchell 1991), it is necessary to study how the state - not considered as a homogeneous and discrete entity - fits into a society in constant evolution (Migdal 2001; White 2013). This question has been studied in the field of history, in the sociology of public action and in political anthropology in Turkey (Navaro-Yashin 1998; Alexander 2002; Secor 2007; White 2018; Massicard 2015, 2019). The challenge is to renew ways of understanding the Turkish state without smoothing over or ignoring existing social and political issues (Erensü, Alemdaroğlu 2018; Adaman, Akbulut, 2020). To this end, Aymes, Gourisse and Massicard (2015) insist on soft ways of governing which, although less visible, are sometimes no less violent: “Institutions everywhere adjust to the social forces they are seeking to manage or mobilise, rather than imposing themselves upon these forces” (ibid: 23). We have identified three threads of theoretical discussion in water studies that can complement this perspective.
- 6 First, the last decade saw calls to strengthen emerging research on political ecologies of the state (Robbins 2008; Harris 2017). Indeed, political ecologists not only analyse the impacts of state-led programs on the environment, but increasingly highlight how resource government contributes to the very constitution of “states” (Meehan 2014; Loftus 2018; Menga, Swyngedouw 2018; Nightingale 2018). Some noted the influence of J. Scott’s analysis of the ways in which states tend to favour ecological simplification and legibility (Scott 1998). For example, building on Mitchell’s concept of the “state as effect” (1991), L. Harris demonstrated the role of large centralized programmes in shaping the state through infrastructure, as they transform the way the very idea of the ‘state’ is experienced. The large scale of water infrastructure in southeastern Anatolia *‘extends and solidifies the influence of the Turkish state in this contested border region’* (Harris 2012: 29). However, she also agrees that research paying attention to micropower and banal experiences of the state is useful in countering theories that merely emphasize the repressive dimension of states (Harris 2017: 2). Indeed, only a few researchers have described the everyday interactions in large-scale irrigation schemes and the way farmers and local employees of agricultural and water administrations adapt to contexts not foreseen by national laws and central planning of irrigation schemes (Lees 1986; Gilmartin 1994; Poncet *et al.* 2010).
- 7 Secondly, research on the shaping of institutions for natural resource management also helps moving beyond the state-society dichotomy. For instance, critical institutionalism refutes economic models which oversimplify natural resource governance by unpacking the microprocesses of negotiations for local access to and distribution of these resources. However, in doing so, there is a risk of “obscuring significant patterns of social and political change” and there is therefore a need “to

place local arrangements within wider frames of governance” (Cleaver 2012: 19). In his study on the rehabilitation of water tanks in India, D. Mosse (1999) showed that community organizations, although often idealised as traditional and local, were historically shaped by interests beyond the village as they were mobilised over time when local governments needed relays to implement new projects or policies. Moreover, the creation by the state of new formal water user associations for the rehabilitation of reservoirs offered some individuals opportunities to take on new positions of power (Aubriot, Prabhakar 2011). This is in line with the idea that “bringing the state back in to analyses of community-level collective action could usefully broaden and deepen institutional analysis. [...] Local negotiations over resource access relate both to the workings of the ‘informal’ or the ‘everyday’ state and to wider processes of state formation and institutional formalization” (Cleaver 2012: 19).

- 8 Thirdly, the ‘francophone’ understanding of the water territory provides complementary keys to read the state-society interactions. Irrigation development can be interpreted as the pursuit of productive irrigation (for economic development) or strategic irrigation relying on various procedures of materialization (by infrastructures) and control (by new norms and management rules) of the territory (Béthemont *et al.* 2003). However, in a Foucauldian perspective of power, territoriality is considered relational (Raffestin 1980). Rather than fixed and strictly delimited, territory constitutes an ever-changing space of negotiation at the interface between collective and public action, between local development dynamics and public policies (Caron 2017). Besides, planners and irrigators sometimes even share a sense of place, understood as a set of common meanings towards a locality. The implementation of irrigation policies at the local level can favour new articulations or new forms of embeddedness between the public sphere, the private sphere and the community sphere of water resource management (Ghiotti 2007).
- 9 These three theoretical perspectives respectively support our objectives of analysing:
 - i) the “ways of doing” of the hydraulic administration through the ways irrigators encounter state agents while appropriating the *gölet* (de Certeau 1990),
 - ii) how social arrangements are shaped by everyday practices and political logics beyond the local level,
 - iii) how street-level bureaucrats and irrigators adapt norms, circumvent rules and find arrangements to make projects work.

Irrigation cooperatives at the heart of the strategies for the implementation of *gölet*

- 10 In line with the official policy of participatory management of irrigation in Turkey, the hydraulic administration (State Hydraulic Works, hereafter DSI) transferred the newly constructed *gölet* to local takers, with particular emphasis on irrigation cooperatives. There is indeed a legacy of past water policies, notably the accelerated transfer of irrigation management to local users from 1993 onwards. This programme aimed at transferring the operation and maintenance of irrigation schemes to freeze the hiring in public administrations (Yercan 2003; Yercan *et al.* 2004; Dorsan *et al.* 2004; Koç 2007; Uysal, Atış 2010; Kibaroglu *et al.* 2012), and participation was “confined to contributing to costs and following the suggestions provided by the more capable actors” (Özerol *et al.* 2013:144). Ninety percent of the irrigated areas concerned were transferred to large

irrigation associations newly created for this purpose and the DSI remained involved in their supervision. Therefore, illuminating research focused on these associations, examining the involvement of local stakeholders and power dynamics within them (Harris, Işlar 2014; Kadirbeyoğlu, Özertan 2015; Kadirbeyoğlu 2017; Kibaroglu 2020). In comparison, the functioning of cooperatives has remained much less studied (Yercan *et al.* 2009; Okan, Okan 2013).

- 11 This study takes these irrigation cooperatives as an entry point to study how various actors participated, directly or not, in shaping local institutions for the management of *gölet* in the Izmir region². Indeed, while the state could legally transfer their management to district municipalities, irrigation cooperatives and village authorities (only outside metropolitan areas for the latter³), it rapidly became apparent that irrigation cooperatives were frequently involved by the DSI in *gölet* projects. These cooperatives are interesting intermediaries between actors at different levels. Organised at the village level (500 to 1000 ha; dozens to hundreds of members), they manage collective boreholes, distributing groundwater to farmers and collecting fees⁴. They often provide water not only to their members but also to farmers outside the irrigation schemes, helping them avoid investment in expensive individual boreholes. Irrigation cooperatives also act as intermediaries between the communities of farmers and actors outside the village, such as state representatives, municipalities or companies providing electricity for groundwater extraction. For instance, although irrigation cooperatives function in a more bottom-up way than irrigation associations (Yercan *et al.* 2009), collective boreholes are drilled with authorisation from the DSI and are generally equipped with its technical or financial help (Le Visage, Kuper 2019). Long established at the local level, irrigation cooperatives often served as relays for small irrigation projects. Therefore, this article studies the way actors create or transform irrigation cooperatives for the management of *gölet* in order to reveal the everyday politics of water irrigation development in rural areas.

Case studies and research approach

- 12 Irrigation cooperatives were sometimes presented by interviewees as a model to replicate for the management of the *gölet*, but three points are noteworthy in this respect. First, and interestingly, before the *gölet* programme, irrigation cooperatives were often considered small and to be failing by DSI staff, as many cooperatives fell into debt due to the high cost of the energy needed for groundwater extraction. Why, despite this negative perception, DSI engineers relied on existing or newly created irrigation cooperatives for the management of *gölet*, remains to be explained. Second, cooperatives were very diverse in terms of age, size and operating rules. We conducted in-depth studies in various villages to get a detailed understanding of their functioning and evolution over time and their engagement in the negotiations on *gölet* management. Fieldwork was carried out between 2016 and 2018 to get a broad view of the economic and agricultural context and the irrigation trajectory of each village, although we do not present this in detail here (see table 1 for elements of context). Third, while in the majority of cases irrigation cooperatives figured prominently in the negotiation processes, other local actors were also involved, such as the *muhtar*, the chamber of agriculture, municipalities and private companies.

Table 1. Agriculture and irrigation in the selected case studies.

Village (district)	Agricultural production	Irrigation (groundwater, surface water)	Irrigation cooperative: date of creation / official scheme / official members	Gölet project		Main local actors involved (officially or not) in discussions concerning gölet management
				Water (million m ³)	Irrigation scheme (ha)	
Bağyurdu (Kemalpaşa)	Arboriculture (mainly cherries & peaches)	GW (+ SW): IC	1972 / 700 ha / 800 mb	0.43	115	IC, Kemalpaşa district municipality
Yukarıkızılca (Kemalpaşa)	Arboriculture (idem) (+grapes)	GW: IC + individually	2004 / 400 ha (100 à 200 irrigated in 2017) / 330 mb (120 in 2017)	1.97	319	IC, Kemalpaşa district municipality
Savanda/ Nazarköy (Kemalpaşa)	Arboriculture (cherries, olive trees)	GW: individually	/	1.03	163	Development cooperative, Kemalpaşa district municipality
Emiralem (Menemen)	High-value horticulture (vegetables + strawberries)	GW: individually	/	1.37	210	Muhtar, irrigation associations, chamber of agriculture, big land owner
Süleymanlı (Menemen)	High-value horticulture (vegetables)	GW: IC	1970s-1980s + revived in 2015 / 153 ha / 220 mb	1.18	153	New muhtar and president of the IC, Menemen district municipality
Harpultu/ Kocaoba (Dikili)	Sheep (+ limited sunflower and horticulture)	No irrigation (very few wells)	2015 / 90 ha / 13 mb	0.5	90	Muhtar, big agrobusiness company
Yenişakran (Aliağa)	Olive trees (more industry than agriculture)	No irrigation (very few wells)	2015 / 61 ha / 34 mb	0.44	62	Muhtar, former local municipality, chamber of agriculture, retired bank employee
Aliağa, merkez (Aliağa)*	Cereals + horticulture	No irrigation (very few wells)	2011 / 418 ha (+162 in 2017) / 368 mb	158 (domestic)	418	Petrochemical company, chamber of agriculture, municipality
Ürkmez (Seferihisar)*	Arboriculture (tangerines)	GW (sea water intrusion)	1972 / - / 248 mb	7	550	IC, muhtar
Seferihisar merkez (Seferihisar)*	Arboriculture (tangerines)	Limited GW; individually	1994 (municipality: operation & maintenance) / 550 ha / -	29.1	1574	District municipality

IC: irrigation cooperative; GW: groundwater; SW: surface water; mb: member; *: additional case studies

- 13 Seven villages were selected in the Izmir region where gölet were implemented within the framework of the '1000 gölet in 1000 days' programme, involving different local actors and entities in the negotiations to obtain responsibility for the management of this new resource (figure 1). Indeed, these actors had various reasons for engaging with irrigation cooperatives (table 1). Three other villages, where reservoirs were created before the national programme, were added to put past relations between the actors involved into perspective: farmers, muhtar (i.e. village authorities), district municipalities, and irrigation cooperatives.

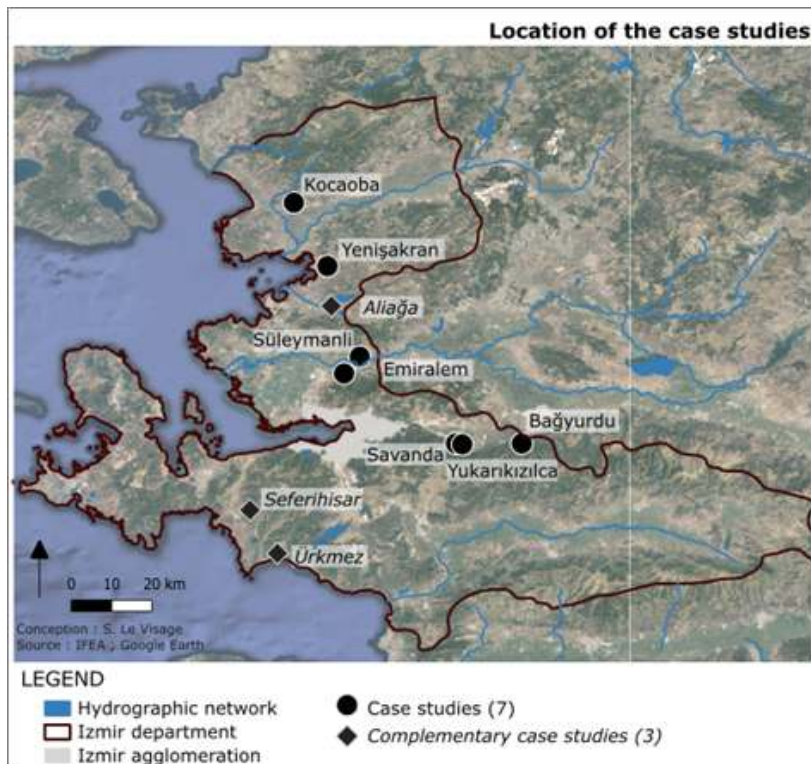


Figure 1. Location of the case studies.

- 14 In each case study, open and semi-structured interviews were conducted with farmers (both members and non-members of irrigation cooperatives) and board members of cooperatives, complemented by interviews with local representatives of the former Ministry of Food, Agriculture and Livestock, of the chambers of agriculture, of municipalities and of *muhtar*. Agents of the DSI both in Izmir and in Ankara were also interviewed to obtain general information about the *gölet* programme, along with their own views on these technical, political and symbolic objects.

Grand programme, small objects: entering the political domain

- 15 The following section highlights the scalar specificity of the *gölet*, as small objects implemented at the local level but part of an important national water resources development programme. It shows the highly political dimension of such a programme before stressing that despite the top-down planning and design of these small dams, DSI engineers at the operational level in the operating and maintenance departments in regional delegations faced a great variety of local situations when trying to transfer their management. This analysis relies on brochures and documents provided by the DSI, for external communication or internal use, and on interviews with agents of DSI both in Ankara and in the regional delegation of Izmir during 2017 and 2018.

Developing the nation, interfering with the local

- 16 The aim of the “1000 *gölet* in 1000 days” national programme was to cope with the high rainfall variability and to irrigate an additional 170,000 ha by increasing existing water

storage by 750 Mm³. This programme was presented as a “locomotive for the development of rural areas” (*kırsal alanda kalkınmanın lokomotifi*, DSI, 2014). It was supposed to encourage a shift from rain-fed agriculture to irrigated agriculture, then from gravity-fed irrigation to pressure irrigation, and thus to increase agricultural yields. This programme resulted in the dissemination of small irrigation projects over the national territory and new infrastructure appeared in a thousand villages (see figure 2). It has therefore made state action visible even in rural areas, obtaining rapid results and a wide geographical coverage (Le Visage *et al.* 2018).

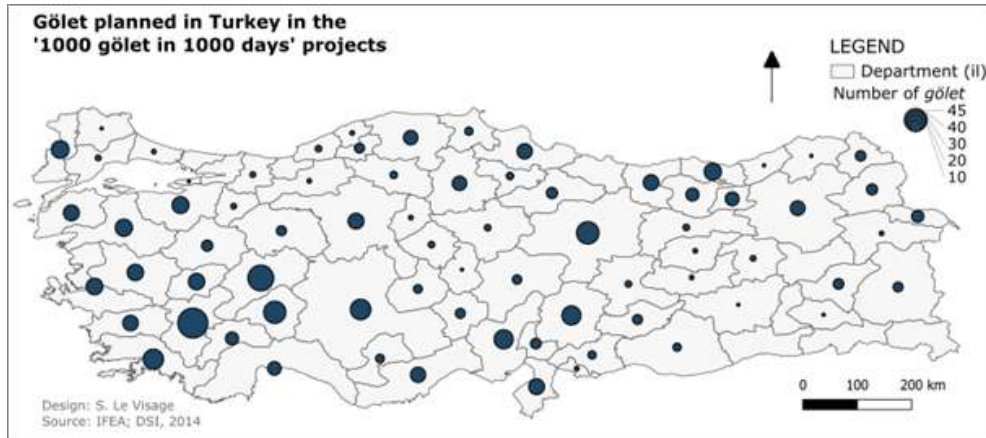


Figure 2. Map of the *gölet* planned in Turkey as part of the '1000 *gölet* in 1000 days' programme (according to information published by the DSI in 2014).

- 17 In the discourse of the planners we met, ideas of development and modernisation were closely interlinked, and the terms were often used interchangeably. Existing agricultural land cultivated by farmers, who should be “taught” good “modern” practices, was considered as waste land or underproductive (Mehta *et al.* 2012). Rural development was seen as an issue with a technologically-driven solution. “Once this image [farmers acting ‘below their potential’] is portrayed, it automatically follows that there is a place for ‘modern’ interventions” (Bossenbroek *et al.* 2017). Interestingly, the *gölet* imply a basic technology, not new and well mastered by the DSI. However, building 1000 projects in only 1000 days makes it part of an ambitious new programme because of its national scale and speed of implementation. As strong criticism was leveled at the state’s disengagement from the agricultural sector, inflation of food prices or import of products normally cultivated in Turkey, this demonstration of power through new infrastructure made all the more sense as a process of legitimising the action of the government and the ruling party (AKP, Justice and Development Party) in rural areas. In the introduction to a report on DSI dams (2014), R.T. Erdoğan, then Prime Minister and President from 2014, said: “We have replaced the understanding of ‘Water flows, Turks look’ with ‘Water flows, Turks build’. [...] In this day and age, Turkish contractors and engineers are able to achieve any kind of prestigious projects all over the world”. Presented as continuing the spirit of the construction of large dams, *gölet* thus became a subject of national pride and the engineering skills to build them offered for export. Moreover, the report on the first World Irrigation Forum, which took place in Mardin in 2013, states that the Turkish Minister of Forestry and Water Affairs “informed that Turkey has completed 232 big dams and is also giving due importance to small and big ponds for meeting the water need of animals, villages and towns. He informed that a project of constructing 1000

[*gölet*] in 1000 days, which might seem crazy, has been initiated and it is expected that 334 of the ponds would be opened for operation by this yearend” (ICID, 2014). The *gölet* programme was thus placed in the continuity of other projects described as “crazy” (*çılgın*) and spectacular (such as the third bridge in Istanbul, the third airport or the Kanal Istanbul). The fetishism of numbers that accompanies these projects thus places them within the broader narrative of a government capable of carrying out the ambitious development policies that the country needs (Pérouse 2013).

- 18 As small local objects implemented in the context of a national programme, *gölet* “left the technosphere” to enter the political domain (Kuper *et al.* 2017). The combination ‘small object, grand programme’ fulfils the political goals of the central government to get closer to the local level. Engineers from the DSI in Izmir mentioned injunctions from their hierarchy to finish as many projects as possible for 2014, a big election year: *gölet* are visible markers of government action, rapidly involving a thousand villages. This trend of replicating small-scale projects on a national scale can also be observed in small hydropower plants (Akbulut *et al.* 2018), forest village projects and in the multiplication of standardised urban parks (Karaman 2016), local symbols of the AKP’s social project according to Montabone (2013). Such small-scale projects are often disseminated by the central government and related communication materials emphasise the huge number of projects and the total amount of money invested. This reveals a form of recentralization in that interventions are made increasingly visible at all levels down to the very local level, despite recent policies presented as decentralising (Bayraktar 2018; Yıldızcan 2018). However, a reading based solely on centralisation requires a more nuanced interpretation (Massicard 2015).

Making small-dams work

- 19 When examining the rather hererogenous ‘planning’ category, we noticed nuanced differences in the discourses of actors at various levels in the way they presented the *gölet*, as shown in figure 3 – they either placed more emphasis on the local scale of the object, or on the national dimension of the programme. Differences in state discourses on the *gölet* indeed appeared:
- 1) the former Ministry of Forest and Water Affairs insisted on the national goals of a grand programme, in line with Turkey’s national domestic policy;
 - 2) the DSI staff at the Ankara national office presented them as small-scale projects with low environmental and social impacts that could be adapted to the local context, in line with international paradigms: “With small dams, no villages end up under water, and there are no problems for the environment” (interview, DSI in Ankara, 2017);
 - 3) the DSI engineers at the operational level defined *gölet* as small objects intended to further extend irrigated areas once the “true big dams” were built. The particular role of the latter, who are DSI’s staff most in contact with actors in the field even if based in Izmir, should be outlined in more detail.

Scale (underlining ...)	Main goals (continuing in the same line as large dams or the reverse)	Criteria for achievement
<ul style="list-style-type: none"> • The national scale of the programme • The small objects 	<ul style="list-style-type: none"> • Rural development and/or economic development • Other goals than irrigation 	<ul style="list-style-type: none"> • Planning/building of the 1000 <i>gölet</i> • Transferring their management in ways that make them work

Figure 3. Aspects of *gölet* emphasised in the discourse of different groups of actors such as the government (Ministry of Forest and Water Affairs), the DSI in Ankara, the DSI in Izmir.

- 20 DSI's regional delegations were indeed responsible for the planning and construction of as many *gölet* as possible. The materiality and scale of *gölet* impacted the implementation of the projects and the local practices, negotiations and arrangements surrounding them. While the multitude of *gölet* shaped state-society relations by bringing the very idea of strong planning right to the local level in a thousand villages, it also involved a multitude of management transfers that the DSI staff must manage in very different, scattered contexts, providing a multitude of opportunities for farmers to engage with planners. Moreover, *gölet* were often built where farmers already had experience of irrigation through access to groundwater and were therefore willing to negotiate or bend the terms of this management transfer.
- 21 The historical core activity of the Turkish hydraulic administration focused on planning and building large-scale hydraulic projects in a context of development policies. Irrigation management transfer to irrigation associations has already been mentioned above, as well as the way DSI provided technical and financial help to small irrigation cooperatives established at farmers' initiative for groundwater development at the village level. This means that the DSI was used to implementing top-down projects by building and transferring large infrastructure to farmers' organisations, and also to helping existing local organizations develop and manage water resources. However, in the case of the *gölet*, the administration had to implement a large-scale national programme by overseeing numerous small-scale projects. There is a difference between transferring the management of a few large dams to large-scale irrigation associations and transferring a multitude of small reservoirs scattered in various contexts to numerous stakeholders. This was even more so due to the tight deadline imposed by the programme. In this context, it was interesting to see how DSI engineers at the operational level managed to find local takers quickly, where in theory only cooperatives and municipalities could manage the *gölet*, and how the management of this new resource was negotiated locally. It relates to Moore's (1987) analysis of "street-level bureaucracy", which adapts the rules and policies it must implement in ways that best suit its interests and local realities, or to Lees' analysis of how low-level government agents, and family farmers, "cope with bureaucracy". In the following sections, we will therefore analyse how the administration and the local population negotiate, make arrangements and adapt their practices (de Certeau 1990) around the new *gölet*.

Everyday politics: shaping institutions for water management

- 22 Below we will focus on how various actors found solutions at the local level to shape institutions for water management, and how some of the actors seized opportunities to get new positions of power in the process. Although *gölet* were coveted by various actors, DSI's employees in charge of their transfer clearly preferred to engage with partners with whom they were used to working. On the other hand, farmers engaged differently with this infrastructural development, i.e. in ways that "best suit their local context, needs and interests" (Le Visage *et al.* 2018). In all cases, the new *gölet* were appreciated: water was cheaper than pumped groundwater and of better quality than the surface water in large-scale irrigation schemes.

Engaging with well-known partners: the model of irrigation cooperatives

- 23 In the villages selected for this study, whether or not an irrigation cooperative already existed prior to the project, this option clearly was the preference of DSI's engineers over other options for managing the *gölet*, in particular over transfer to municipalities. Several configurations were indeed identified, linked to the interests and coalitions of actors involved in the *gölet* project (figure 4). When a former irrigation cooperative had been disbanded prior to the project, there was a need to understand which actors wanted to reactivate it and if so, why. When a new cooperative was created to manage the *gölet*, it was necessary to see to whom DSI's engineers were turning to take on this responsibility and who would benefit from leading this organisation.

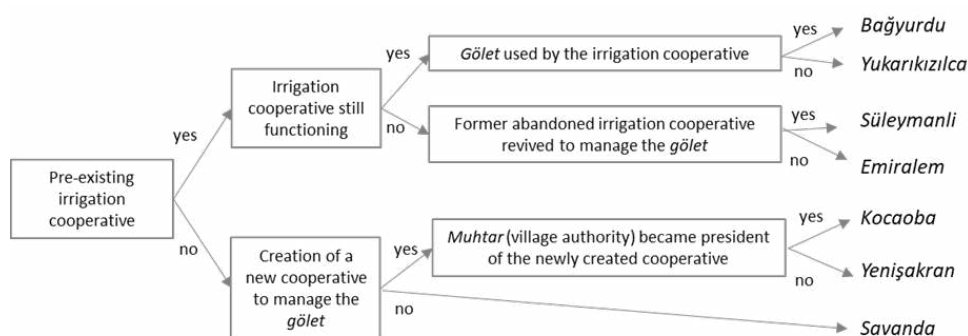


Figure 4. Configurations around the new *gölet* in the villages selected for this study (status of management transfer in 2017).

- 24 Our recurrent encounters with the DSI engineers in charge of planning agricultural projects and with the ones in charge of their operation and maintenance revealed that they considered cooperatives to be problematic organisations – small, not well-managed and indebted – but also easier to deal with thanks to the pre-existing vertical relations between them. This explains why agents of the hydraulic administration in Izmir preferred, whenever possible, to transfer the management of the *gölet* to irrigation cooperatives with whom they had had frequent interactions in the past rather than to municipalities, which they considered politicised. These vertical relations were based on administrative, technical and financial support from the DSI to cooperatives. Moreover, the DSI dominates the technical water expertise⁵ in Turkey

and has gained a high level of autonomy over time. Indeed, DSI does not answer to local administrations but depends directly on the central government. The engineers we met at the operational level, therefore, did not want to engage with district municipalities as they would thus engage with local authorities considered politicized and not particularly competent in technical matters. For instance, one employee explained that it was their job “to give the management of water” to farmers, representing them as local beneficiaries of “state projects”. He did not see why municipalities should become new intermediaries as they “are always changing and know nothing about irrigation” (interview in Izmir, 2016). To illustrate this point, we will focus on the DSI agents’ strategies in villages where irrigation cooperatives had existed prior to the *gölet* projects (Bağyurdu and Emiralem) and in villages where irrigators created new cooperatives for their management (Kocaoba and Yenişakran).

- 25 In Bağyurdu (Kemalpaşa district), a *gölet* was built between 2012 and 2014. Although no official public meeting was held in the village to discuss the implementation of the infrastructure, DSI engineers met the existing groundwater irrigation cooperative several times. Board members of the cooperative soon expressed their interest in using this new resource as it was an opportunity to obtain clean cheap surface water to offset the high energy cost of groundwater extraction in a context of declining water tables. However, the official transfer of *gölet* management to Bağyurdu irrigation cooperative remained on hold for some time, because the Kemalpaşa district municipality had expressed interest in managing the *gölet*. According to the DSI engineers, this followed meetings between upper levels of their hierarchy and local political figures. About this pending situation, an employee from the DSI said: “If you ask me, the cooperative should manage the *gölet*. At least they know how to irrigate! And the municipality is so far away... In your opinion, do you think it’s possible to manage a *gölet* when you’re so far away? What can I say...” (interview in Izmir, 2017). It should be noted that this notion of being far away was often mentioned during interviews, referring to both geographical distance (compared to the local implementation of cooperatives or *muhtar*, physically close to its members or the village, as *in the village*) and to the symbolic distance (stressing the differences between actors concerning their representation, know-how and interest in agriculture and irrigation). Finally, once the small dam was built, the Bağyurdu cooperative got *de facto* use of this new resource despite the fact that the official transfer was still pending. With no objection from the DSI, the cooperative even connected the water distribution network of the *gölet* to its own groundwater distribution system. Thanks to this connexion, it has since then been using the surface water as part of and outside the official *gölet* project, in ways that best suit its needs for irrigation in the local context of expensive groundwater extraction. In the case of Bağyurdu, the management of the *gölet* was incorporated in the existing irrigation infrastructure and existing water institutions based on collective access and distribution of groundwater. Functioning rules of the long-standing cooperative had gradually been shaped over a period of more than forty years and were therefore easily adapted – to reduce the price of water for instance – when it included the distribution of this new cheap water.
- 26 The case of Emiralem, located in Menemen district, is diametrically opposed to the case of Bağyurdu, but equally informative about the role of irrigation cooperatives and municipalities in *gölet* projects. The production of high-value horticultural crops in Emiralem, including strawberries, has been based on intensive use of groundwater

accessed individually by the farmers over the past 40 years. When the *gölet* was built, DSI employees first asked farmers to group together in an irrigation cooperative. However, no one accepted to take on such a responsibility due to past failures of collective irrigation projects in the village, including an irrigation cooperative that collapsed in the 1990s. DSI looked for other takers including the neighbouring irrigation association of the large-scale Menemen irrigation system, which also refused. In fact, this association already had tense relationships with Emiralem farmers. Indeed, these horticultural farmers had individually invested in groundwater access and were consequently independent from the large-scale irrigation scheme. For this reason, the association even removed its canals from the village in 2012. To further complicate matters, for the DSI engineers, the district municipality was not an option: “if we can, we prefer cooperatives. It is always complicated with municipalities... And Menemen municipality was not interested in any case [...] they could lose votes in the elections” (DSI employee, Izmir, 2017). Emiralem had its own small municipality before it became a neighbourhood of the Menemen district municipality as a result of the 2008 and 2013 administrative reforms on metropolises. This explains why the district municipality, located in Menemen, did not get involved in what it considered local rural issues. Consequently, between 2014 and 2018, the administration met the *muhtar* several times to ask, in vain, for the revival of the former irrigation cooperative to manage the *gölet*. It then offered the possibility to farmers to irrigate from it individually cost free before getting organised officially: “the small dam was full; we were not going to waste the water. At least they [the farmers] will see it is good water. Next year they will need a cooperative” (DSI employee, Izmir, 2016). In 2018, farmers continued to use this water informally. The case of Emiralem shows the pragmatic search for takers by the DSI in the field. It also highlights how the arrival of a new water resources development project reveals the local trajectory of the irrigation model: individual access to groundwater to irrigate intensive horticulture and a complicated relationship with ‘state-led’ or ‘community-based’ collective modes of irrigation (Le Visage, Kuper 2019). Even though in the meantime farmers have inquired about the management conditions of the reservoir by a – still to be created – irrigation cooperative, they have preferred using this water informally without one since then. They shared the costs of some repairs through the intermediary of the *muhtar* when some pipes broke down and also started to criticise some (individual) practices of overirrigation that led to this equipment breakage. However, they brought the water to their plots independently to reduce their costs of groundwater extraction and were irrigating individually, in the same way as their previous agricultural practices. This shows how the shaping of new forms of social arrangements around water are built on past arrangements concerning water according to the interests of local actors. Even though no official rules related to water management were established, irrigators in Emiralem began to shape a kind of irrigation scheme that was very different from the original project. Yet, they never broke contact with the administration while waiting to see if the situation would change. This means that the potential evolution of water institutions still depends on the everyday, invisible but always present power relations with state representatives, but also shows that farmers managed to circumvent the rules, override the conditions imposed for irrigation and more importantly retained the possibility to negotiate.

- 27 When there was no existing irrigation organisation to which the management of the *gölet* could be transferred, which was the case in Kocaoba (Dikili district) and Yenişakran (Aliağa), the DSI promoted the creation of cooperatives by mobilizing

reliable well-known intermediaries such as the *muhtar*. In Kocaoba, a pastoral and livestock village, the *muhtar* had occupied his function for over 15 years and immediately agreed to create a cooperative and become its president. He considered it to be “just the logical extension” of his function, “a new way for the development of the village” and was not presenting himself as the president of the cooperative but as the *muhtar*, the “messenger between the village and the outside” (interview in Kocaoba, 2017). As a result, with the opportunity of this new position, he again extended his network of relationships outside the village, thus reinforcing his social and political position within it. His position as an intermediary was also apparent in his intention to have the cooperative rapidly adopt the irrigation rules and technology promoted by the DSI, such as the installation of water meters using prepaid cards. Moreover, a key private actor strongly supported local initiatives linked to the arrival of the *gölet*. Agrobay, a huge agricultural company belonging to the Bayburt group based in the Black Sea region, had progressively purchased more than 200 ha in the village for the production of tomatoes and arboriculture for export and had two types of deep boreholes, one type for geothermal heating of its greenhouses and the other for irrigation. The irrigated area of the *gölet* project included some of the company’s land, giving it the right to be part of the board of the cooperative. However, it decided not to use the water of the *gölet*, but leave it for use by small-scale farmers. The *muhtar*, whose son worked for the company, explained that he had borrowed machines cost free to install additional pipes in the water distribution network. Similarly, he explained that the company had paid for carpets for the mosque. Strongly linked to the village by the land it had purchased, the groundwater it pumped, and the jobs it provided, the company was playing on different registers to maintain its position there, to the benefit of the *muhtar*. This example highlights the way that DSI engineers relied on actors who were already well-situated with powerful economic and social positions in the daily life of the village to facilitate the transfer of the management of the *gölet*.

- 28 Conversely, in Yenişakran the main activity was no longer agriculture or livestock breeding. Most inhabitants worked in petrochemical industries in Aliğa but still owned olive trees. Influential people at the local level, i.e. the *muhtar*, the former mayor of Yenişakran and the president of the chamber of agriculture, met informally to discuss the cooperative option proposed by the DSI to manage its newly-built *gölet*. Engineers relied on the influential position of these actors and on their local knowledge to find someone suitable to launch and lead a new cooperative. The *muhtar*’s and the former mayor’s activities were indeed anchored locally and the president of the chamber of agriculture often worked informally from his small restaurant (*lokanta*) located in Yenişakran rather than from the office in Aliğa. Based on their local knowledge and connections, they approached a former banker to ask if he would assume the presidency of the cooperative. The president of the agricultural chamber described the banker as someone who “chose to return to the land, is more educated than anyone else here, and always wants to do things for others” (interview in Yenişakran, 2017). The *muhtar* and the president of the chamber of agriculture also suggested the other founding members: the cooperative was created in 2015 and water was distributed from 2016 onwards. The president of the cooperative explained that he was already involved in rotaries in Kazakhstan and described the *gölet* and the irrigation cooperative as a “social project” (a term he used several times): “Irrigation will only be the first step. I did a lot of research before starting, I read reports, academic papers. But I see things in a bigger way, in the long term, not only for

irrigation. If we have enough money, we'll buy modern machines that we will share, for instance for cutting and shredding branches on site rather than burning and dirtying the air... We can think of other shared machines. What I want is local development. We're already going to lose olive trees in the highway project... We must favour continuity, but we must look far ahead. It really is a social project" (in Yenişakran, after the General Assembly of the cooperative, 2017). To create a fund to pay for children's schooling, he also got the cooperative to manage the common olive trees that had belonged to the former local municipality which ceased to exist after the metropolis reforms. Many irrigators explained they were not much involved in the daily running of the cooperative and some people did not want to irrigate their plots. In the case of Yenişakran, as irrigation was new and not relevant to their daily life, members of the cooperative voted for the collective irrigation rules by following the initiatives and decisions of the president. Even though he was not a native of the village, he acquired legitimacy thanks to the support of the influential local actors cited above and of the small number of people who still made a living from agriculture. Moreover, he could also rely on the relationships the *muhtar* and the president of the chamber of agriculture had beyond the local level, with the district and the metropolitan municipalities, to prepare new projects for the cooperative. Despite the low level of involvement of its members, an agent of DSI in Izmir considered it "a problem-free cooperative, and there aren't many! He is a good manager" (Izmir, 2017). This shows that DSI agents had an easy relationship with the new president as they were quite alike, sharing the same language and professional competencies.

- 29 The evidence provided in these different case studies show, first, that at the operational level, representatives of the DSI favoured irrigation cooperatives when this formal structure already existed in the village (Bağyurdu and Emiralem cases), and that in the absence of an irrigation cooperative, it turned to reliable affiliates to create one (Kocaoba and Yenişakran cases). Second, the arrival of a new *gölet* revealed the trajectory of irrigation in the different villages, and the importance of everyday social life in the establishment or development of water institutions (table 2). Irrigation cooperatives can be integrated within broader social and political relations at the local and regional levels. Their embeddedness in such networks consolidated the idea of reliable intermediaries at the local level for the hydraulic administration.

Table 2. Cases studies with a focus on the model of irrigation cooperatives as reliable partners.

Case studies	Everyday politics: actors and their relationships concerning the <i>gölet</i> (in addition to DSI employees at the local delegation)	Shaping water institutions: dynamic processes of arrangements and negotiations
Bağyurdu	Longstanding cooperative with a board already in contact with various state administrations, local authorities, neighbouring cooperatives, private energy companies, etc. / Political influence in municipalities and state administrative entities	Cooperative developed for decades with rules progressively adapted over time, facilitating the collective use and management of the <i>gölet</i>
Emiralem	Irrigation associations, former local and current district municipalities, farmers who had already invested in their own irrigation system, <i>muhtar</i>	Unofficial and individual use of the <i>gölet</i> , following on individual use of groundwater. Possible beginning of the shaping of informal arrangements due to overirrigation from the <i>gölet</i>
Kocaoba	<i>Muhtar</i> as an intermediary between the village and the outside, big agricultural company	<i>Muhtar</i> /president relays the DSI's wish for an 'ideal' way of managing the cooperative (e.g. prepayment with water meters)
Yenişakran	<i>Muhtar</i> , the former mayor of Yenişakran, president of the chamber of agriculture, president of the cooperative	Members not really involved in the new cooperative, which depends on the initiatives taken by a president who wants 'modern' 'water-saving' irrigation

Emergence of new takers: pressure from above and opportunities for local positions of power

- 30 Despite the preference of the DSI for irrigation cooperatives over politicised municipalities on the one hand, and the engagement of existing powerful actors in new *gölet* projects on the other, the arrival of new projects and new water resource at the local level also offered new takers a lever to seize opportunities of legitimation and positions of power. In Kemalpaşa district, for instance, the Savanda *gölet* was built in Nazarköy village where no irrigation cooperative existed. In Yukarıkızılca village, where another *gölet* was built, a recent cooperative had been irrigating with groundwater since 2015. However, the cooperative was already in debt and the board was not optimistic about obtaining the management of the new water resource. The *gölet* in the two neighbouring villages were built next to each other, and were geographically close to Kemalpaşa town, the urban and industrial center of the district. DSI engineers explained that they could not be sure Yukarıkızılca cooperative would get the *gölet*: “some politicians came up there, and we were told these *gölet* are for the municipality. This is why we are waiting” (interview in Izmir, 2017). According to interviews with the DSI, with different irrigation cooperatives and with representatives of the Ministry of Food, Alimentation and Livestock, the district municipality of Kemalpaşa was especially interested in the Savanda *gölet*. On the one hand, communication materials from the DSI highlighted the official irrigation purposes of these projects, noting that “this project, which will put a smile on the faces of Kemalpaşa farmers, will cost almost 10 million liras” (DSI, 2017). But on the other hand, on its website, the district municipality announced Savanda *gölet* as *its* own project and presented it as a new recreational area for Kemalpaşa inhabitants (see figure 5). The mayor accompanied several official inaugurations of hydraulic projects in the district by the Minister of Forestry and Water Affairs in March-April 2017, before the national referendum on the reform of the Constitution. This example clearly shows how political purposes and pressure at interrelated regional and national levels can prevent the usual model for water management from becoming effective at the local level – and in this case, even transform the original irrigation project into a project of landscape and leisure.



Figure 5. Savanda project, from the website of Kemalpaşa municipality (December 2016). The article from which this figure was extracted presented ‘one of the most prestigious projects of Kemalpaşa municipality’ and ‘one of Izmir’s exemplary projects’ including playgrounds for children, green spaces, fish restaurants, small shops (*büfe*), an amphitheatre, and a 3.5 km walkway.

- 31 The arrival of new hydraulic infrastructure in rural areas also enabled some individuals to seize power opportunities through new symbolic positions in the local social networks. For instance, even if no cooperative had been revived or created in Emiralem (a case mentioned above), some farmers prepared themselves for such a scenario. Among them was the biggest horticultural farmer in the village, also selling agricultural and construction equipment, and who owned several plots inside the irrigation scheme originally planned in the *gölet* project. He met the hydraulic administration in Izmir to get details on conditions for management of the *gölet*. “If [farmers of Emiralem were] compelled to be in a cooperative”, he was ready to lead one, with the support of the mayor of Menemen if needed (interview in Emiralem, 2018). However, the *gölet* also offered opportunities to actors with less power in the same village, as shown by two smaller horticulture farmers who were also thinking of launching a cooperative. They explained that they personally knew the president of the chamber of agriculture and tried to get advice through his intermediary. Discouraged when the irrigation association was considered as a possible taker by the DSI, they kept an eye on what was happening in the village, hoping to get the support from their neighbourhood if a cooperative was to be created one day, at least to join the management committee.
- 32 In the neighbouring village of Süleymanlı, an irrigation cooperative collapsed in the 1980s, so when the *gölet* was built in 2014 there was no readily available management solution. However, this new irrigation project motivated a retired truck driver, who was also a landowner, to present himself as the new *muhtar* the same year. Elected in March, he relaunched the former cooperative and became its president in June, after convincing the village to collect money to reimburse the remaining debt of the former cooperative. He also found another source of funding to install water meters for irrigation: a recreational park with a picnic area and a paying entrance had been created next to Emiralem regulator, at the entrance of Süleymanlı village. In his opinion, the park management was supposed to go to the Menemen irrigation association in charge of the canals from the regulator. However, by going directly to Ankara and arguing that he was with the ruling party and going to manage irrigation from the *gölet*, he succeeded in obtaining management of this profitable park for the cooperative (his interview in 2017).
- 33 The comparison of Emiralem and Süleymanlı reveals a particular aspect of everyday politics as new potential takers seized opportunities presented by the arrival of the new *gölet* to mobilise their social and political relations in and outside the village and gain new positions of power locally. Their own interests influenced the choice of irrigation cooperatives as an option for the management of the *gölet*, and thus the possible pathways for new water institutions (table 3).

Table 3. Cases studies with a focus on supra-local opportunities and constraints for shaping local water institutions.

Case studies	Everyday politics: actors and their relationships around the <i>gölet</i> (in addition to DSI employees at the local delegation)	Shaping water institutions: depending on the opportunities for legitimization and positions of power seized by new takers
Savanda/ Yukarıkızılca	Recent irrigation cooperative in one of the two villages / mayor of the district municipality, government representatives	Transfer of management to irrigation cooperative on hold, potential change in the purpose of the project.
Emiralem	Major landowner and district municipality, small-scale farmers and president of the chamber of agriculture	Farmers looking for a key role in the potential cooperative which will be in charge of collective management of irrigation
Süleymanlı	The new <i>muhtar</i> and president of the revived cooperative, irrigation association, political figures in Ankara	Conditions for the management of the <i>gölet</i> irrigation cooperative changed with the involvement of this new president (indebted cooperative revived and costly water meters to be installed thanks to the management of the profitable recreational park)

Governing at all scales: from Power to power in the shaping of water institutions

- 34 The arrival of new irrigation infrastructures revealed the ‘ways of doing’ of irrigators who were trying to appropriate the new projects, but also of the administration employees who had to transfer the management of the *gölet* and wanted to ensure that the projects were successful (de Certeau 1990). First, this article showed how the *gölet* - ‘small’ objects part of a ‘large’ program - relayed the image of a strong and modernising state down to the local level, thus shaping the way the very idea of “state” was experienced (Harris 2012). Conversely, DSI engineers identified farmers as direct ‘beneficiaries’ of the state projects. This distinction between ‘planners’/‘beneficiaries’ contributes to the shaping of reciprocal perceptions, illustrating how the boundary between these categories is not fixed but continuously reconstructed (Mitchell 1991; Harris 2009). Secondly, the scale of the *gölet* programme highlighted the constraints involved in the dissemination of many small projects for agents in charge of transferring their management at the village level. In order to make the *gölet* work for irrigation purposes, they were prepared to adapt to local contexts not foreseen by the national regulations drawn up for the planning and control of irrigation schemes. The use of coveted water was *de facto* granted to the irrigators whenever possible, while officially waiting for a formal allocation decision (Bağyurdu and Emiralem). DSI agents pragmatically found arrangements that best served their interests according to each local context (Lees 1986; Gilmartin 1994; Poncet *et al.* 2010). The irrigation cooperatives with which they were used to working thus strengthened their position as intermediaries in state-society relations (Mosse 1999; Massicard 2015). Thirdly, this study highlighted the role of factors beyond the local level in shaping local water institutions, understood here as social arrangements around irrigation. As DSI engineers relied on them, actors already well positioned at the local level strengthened their position of power through these new water institutions (Kocaoba and Yenişakran), sometimes facilitating continuity in the local management of irrigation (Bağyurdu). Nevertheless, new actors also mobilised their political networks outside the village to obtain more legitimacy and power within it (Emiralem, Süleymanlı; for other contexts see also Aubriot, Prabhakar 2011), and the intervention of municipalities to shift the use of the *gölet* for recreational purposes illustrated how supralocal political constraints can upset the arrangements found for implementing the projects and thus the way water is managed (Savanda and Yukarıkızılca).

- 35 To sum up, the shaping of social arrangements around water highlighted existing forms of everyday politics. “Institution must be analysed as arenas of social relations, and public action as a result of these relations” (Gourisse 2015). However, this research highlights several issues for the study of public action around the governance of natural resources in Turkey.
- 36 First, it highlights the issue of scale in the study of public action. As F. Cleaver explained: “there is no easily determined link between macro-level ‘good governance’ and effective local action. Good or bad governance does not simply trickle down through intermediary layers to state and the people. Local-level arrangements do not simply mirror those at national level on a micro-scale. Rather, macro-level governance arrangements shape local institutional life in less obvious ways, by reconfiguring the institutional stock from which local arrangements can be drawn” (2012: 191-192). Circumvention of rules and arrangements found at the local level for the *gölet* use or management were constrained by national frameworks inherited from the water policies implemented in the 1990s to meet the expectations of international donors, and from recent plans to intensify national agricultural production. Thus, looking at the complexity of relational configurations at the local level contradicts the perception of a strong state disconnected from communities (Migdal 2001; White 2013). At the same time, it requires an understanding of these social arrangements as embedded in broader social and political contexts.
- 37 A second issue raised relates to the spatial dimension of the socio-state dialectic. Territoriality is often understood as a strategy to control space and resources (Sack 1986): the pursuit of state interventions to develop and control rural areas within the national territory is materialised through new infrastructure. However, territoriality can also be seen in a relational perspective with a more diffuse understanding of power (Raffestin 1980): new irrigation projects reveal never-fixed spaces of negotiation and entanglement between national policies and local development dynamics (Ghiotti 2007; Caron 2017). Negotiating the conditions for *gölet* management through cooperatives opens up new opportunities for ‘contact zones’ between state representatives and rural inhabitants (Harris 2009). Through interactions in these contact zones, common sets of meanings on their relationship can emerge. DSI engineers and other local actors sometimes came to share viewpoints on the importance of irrigation for rural development and this common sense of place towards rural localities facilitated the implementation of the *gölet* projects. These discrete and flexible ways of governing finally allow the Turkish state to continuously base its legitimacy on dynamic institutional adjustments and diffuse forms of power in varied and dispersed ‘contact zones’.
- 38 This leads us to the issue of complementarity between conflict-centered approaches (Aksu *et al.* 2016; Kavak 2016; Akbulut *et al.* 2018) and the study of less controversial projects, to better understand the various ways of governing by the Turkish state (Massicard 2019). Highlighting that successful negotiations have been possible in Izmir does not erase the more violent ways of doing that exist in relation to other irrigation projects. Beyond the idea of irrigation development only as a top-down steamroller (Béthemont *et al.* 2003), the implementation of irrigation projects also consists of more flexible, but no less impactful, modes of governance (Akıncı *et al.* 2020). The multiplicity of social and political interactions at the local level shows that the everyday politics, although messy and invisible, have a considerable impact on the processes actually

implemented in the field. Studying the Turkish state outside the sole prism of the conflict-centred perspective does not erase structures of domination: on the contrary, by changing scale, this relational perspective embodies power dynamics. It makes visible the differentiated capacity of actors to navigate systems of meaning and to influence or constrain others.

- 39 The territorial transformations resulting from state intervention in hydraulic development can be aggressive or progressive, and it is precisely this tension between coercion and arrangements that needs to be further questioned and researched.

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NOTES

1. There is a need to clarify what is meant by the 'local' level. First, 'local' is not understood as the opposite of 'the state' (Migdal 2001; Cleaver 2012). Second, it is not defined as a fixed geographical or administrative scale, the aim is rather to consider spaces of issues (transfer of water management) and practices (irrigation from surface and groundwater, negotiations, etc.). We took the *gölet* as an entry point to look at the various encounters between actors during the implementation of the irrigation projects. Therefore, in this article, 'local' mostly refers to the village scale, at which these irrigation projects are implemented and the new infrastructure is used, although negotiations for water management also rely on networks of social and political relations beyond the village, as shown in this study.
2. The strong cooperative culture in Izmir may have eased the formalisation of collective organisation for irrigation in some cases. However, new cooperatives were often created at the demand of the DSI for managing *gölet*, and the implication of other key local actors was salient in the decision of complying (or not) with this condition.

3. With Law 6360, thousands of rural villages were transformed in neighbourhoods of urban district municipalities and village authorities were thus abolished in metropolitan areas (see Kızılaslan *et al.* 2016).
4. Although irrigation cooperatives also manage surface water locally, they were mostly developed for groundwater use: according to the DSI, they managed about 480,000 ha of groundwater-based irrigation in 2014. Interestingly, the Turkish programme of irrigation management transfer of the 1990s, mentioned as a model case internationally, was at least partially influenced by the understudied irrigation cooperative model (Svendsen, Nott 2000).
5. Especially since the abolishment of the General Directorate of Rural Services in 2005 (*Köy Hizmetleri Genel Müdürlüğü*, the former state administration in charge of small-scale water projects in rural areas).

ABSTRACTS

Much research on environmental issues in Turkey has focused on conflictual state-led projects, for example on the large-scale GAP irrigation schemes or hydroelectric plants. This article shows that, in a complementary way, it is also necessary to study less contested projects, since power struggles for control over natural resources tend to occur in the implementation and everyday management of these as well. It analyses the everyday dynamics of negotiations and the arrangements found locally during the implementation of the national programme '1000 gölet in 1000 days'. *Gölet*, hillside reservoirs built for irrigation, enabled the government to demonstrate its involvement at a very local level in numerous villages in Turkey. However, the complex implementation of these numerous and relatively small projects compelled agents of the hydraulic administration to negotiate the transfer of their management to local actors. Taking irrigation cooperatives in the Izmir region as a starting point, this article highlights how the shaping of social arrangements for managing the new water resource depends both on local and supralocal power relations. It challenges the idea of a monolithic state disconnected from homogenous communities of irrigators, and reveals the flexibility of these relations. It focuses on the way actors – not only irrigators but also state officials at the local level – adapt norms, bend rules and find arrangements in order to shape new water institutions and infrastructure.

INDEX

Keywords: Coproduction of public action; gölet; hydraulic infrastructure; irrigation development; political ecology; shaping of water institutions; Izmir.

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