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Cultural Political Economy of Irrigation Management in Northeastern Ethiopia: The Case of the Kobo-Girana Valley Development Programme

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ABSTRACT: This paper aims to extend a 'politicised' understanding of irrigation management using theoretical perspectives in political ecology and cultural political economy. The paper is based on a case study of the Kobo-Girana Valley Development Program in Amhara Region, Ethiopia. Data was collected in the course of 20 in-depth interviews, 10 expert interviews, seven focus group discussions, and field observations. The findings of the study show that irrigation management in the Ethiopian context is a highly political enterprise involving heterogeneous state-sector offices, local irrigation users, and other actors. The state uses the hegemony of its developmental state political ideology and various governmentality mechanisms to contain the irrigation management process. Irrigation users react with a variety of counter-hegemonic strategies to resist the state's containment measures. Such an understanding of irrigation management could help us to refocus our attention away from the conventional technologies and institutions that dominate irrigation management studies, and towards the dimensions of power and politics.

KEYWORDS: Cultural political economy, irrigation, state-society, politics, coordination, Ethiopia

INTRODUCTION

Experiences in irrigation management have shown the vital role of coordination among different actors (Ostrom, 2011; Meinzen-Dick, 1997). At different times, state-centred policies, water users-centred policies, market-centred policies, or a combination of two or more of these, have been experimented with in different geographical settings. The rationale behind the state-centred approach to irrigation management is based on the idea that irrigation users tend to appropriate irrigation water to suit their self-interest. Hence, 'third party' mediation among irrigation users – mainly by the state – has been suggested (Meinzen-Dick, 1997; Lam, 1996). However, excessive involvement of government bureaucracies not only increases the cost of irrigation interventions, but also leads to rent-seeking and inefficiency (Svendsen and Meinzen-Dick, 1997). As a result, attention shifted to irrigation users. The work of Chambers and others marked a turn towards user-centred policies (Chambers, 1980). These studies attempted to debunk the claim that irrigation users could not organise themselves to manage their water. Their analysis helped in the identification of success factors and design principles for irrigation management. This led to more investment in institutional and organisational capacities, such as the establishment of water users associations and other irrigation management transfer mechanisms (Ostrom, 1993; Svendsen and Meinzen-Dick, 1997). However, not only for irrigation management but also for other common-pool resources which require coordination (Meinzen-Dick, 2007; Pahl-Wostl et

al., 2012), the romanticism of 'community-based approaches' has been criticised for taking the concept of community for granted (Mansuri and Rao, 2004; Leach et al., 1997; Blaikie, 2006). Communities are not as homogeneous and egalitarian as 'community-based approaches' assume, but rather exhibit power struggles and conflicts of interest (Blaikie, 2006). This recognition reasserted the need for third-party mediation among community members. This shift is captured in what is broadly understood as collaborative resource management, where experts, politicians, the local community, and other interest groups are involved in decision-making (Berkes et al., 2007; Olsson et al., 2004). However, debates on coordination have been trapped in a mode of analysis that depoliticises institutional arrangements of coordination, reducing it to a 'managerial challenge' (Mollinga et al., 2007; Walker and Hurley, 2004).

This paper aims to extend the debate on the role of 'politics' in irrigation development and management. To that end, it uses a combination of theoretical insights from political ecology and from cultural political economy. Political ecology in its broad sense excavates the taken-for-granted resource management approaches in order to better understand the role of power asymmetry among actors at multiple scales in resource management decisions (Robbins, 2012; Peet et al., 2011). Accordingly, collaborative resource management is seen as a political arena where actors struggle to contain the collaborative process for their own advantage (Few, 2001). Walker and Hurley (2004) and Few (2001) argue that conventional research on collaborative resource management focuses on 'institutional' and 'procedural' aspects of the collaborative arrangement, without paying due attention to the political nature of collaboration. They argue that, collaborative processes can be seen as the result of a struggle between those powerful actors who want to contain the collaborative process for their own advantage and counter-containment action by those who are subjected to containment actions.

Collaborative approaches to resource management have also been criticised as being mechanistic in that they tend to reduce coordination to governable institutional and managerial interventions, thus downplaying the role of power and politics (Few, 2001). In irrigation management, this is in line with the call for a more nuanced understanding of the role of the state and politics in irrigation development and management (Molle et al., 2009). Bringing power and politics into the analysis, it is argued, paves the way for a better understanding of both the structural and agency-related factors that influence the institutional and managerial dimensions of coordination (Molle et al., 2009; Mollinga and Bolding, 2004; Mollinga et al., 2007).

Containment means that powerful actors in collaborative arrangements use their power and discursive instruments to make sure that a certain pre-planned process is not hampered by competing actors (Few, 2001). They legitimise their interests and delegitimise resistance by trying to take advantage of the collaborative management arrangement (Walker and Hurley, 2004). Containment strategies include actions of avoidance, exclusion, and control over procedures and knowledge (Few, 2001). However, those with less power are not just passive victims. Even under coercive state-society relationships, people have some power to counter the containment imposed on them. They resort to counter-containment actions which may take the form of subtle resistance, disruptive action, and/or open opposition to containment strategies (Few, 2001). Hence, collaborative processes can be conceptualised as arenas of struggle between actors in a relation of power asymmetry. The final outcome depends on the balance between containment and counter-containment strategies.

Although a political ecological approach would help us to better understand the political dimensions of resource management, it offers little theoretical insight as to how containment and counter-containment mechanisms operate. Hence, we will turn to cultural political economy (CPE) for a more nuanced unpacking of the political dimensions. Cultural Political Economy (CPE)¹ provides an important theoretical insight to unpack the black box of containment and counter-containment strategies.

¹ Although cultural political economy is mainly devoted to explaining the role of the state in capitalist social formations (cf. Jessop and Oosterlynck, 2008), its insights can also be applied to non-capitalist social formations, as this paper hopes to show.

The Lancaster School CPE approach is interested in explaining how hegemonic orders are formed (or undermined) through processes of naturalisation of subjects, subjectivities, and modes of calculations, and materially implicating them in everyday life (Jessop and Sum, 2010). By combining material and discursive analyses, CPE opens the possibility of "developing and articulating the micro-foundations of political economy with its macro-structuring principles" (Jessop and Sum, 2010: 97). CPE combines Gramscian and Foucauldian perspectives to explain the process of production of containment institutions of the state. The Gramscian perspective shows how the state produces hegemony by creating discourses and diffusing them through actors from other sites and scales (Jessop and Sum, 2006b). Gramsci described hegemony as "the 'spontaneous' consent given by the great masses of the population to the general direction imposed on social life by the dominant fundamental group" (Gramsci and Hoare, 2007: 12). The production of hegemony helps the state to absorb alternative meanings and to silent resistance, and enables it to selectively diffuse its economic imaginaries² (Jessop and Oosterlynck, 2008). A core part of the production of hegemony is the mechanism through which hegemonic ideologies diffuse to different sites and scales. The Foucauldian dimension of cultural political ecology emphasises the way in which different technologies of knowledge and power – such as maps, statistics, organisation of citizens, and knowledge generation – are mobilised to enable the diffusion of discourses to different sites and scales through their influence on the conduct of individuals and groups (Jessop, 2010; Foucault, 1982: 790). The production of hegemony, however, is accompanied by the production of counter-hegemony. Counter-hegemony entails recognition of the agency of those who are subjected to the hegemony of the state ideology, and of their ability to resist and redirect hegemonic ideologies (Jessop, 2001; Sum, 2005).

In this paper, we use these insights from political ecology and cultural political economy to uncover the 'politics' of irrigation management. The research question that the paper aims to address is "how is the irrigation management in the selected case study linked with the broader sociopolitical contexts of the area?" More specifically, the paper aims to answer the following research questions: 1) how does the Ethiopian Government's hegemonic developmental state oriented political ideology reveal itself as a containment strategy in the selected irrigation management cases? 2) What particular governmentality mechanisms are enabled to translate its macro-level political narratives into a micro-level containment strategy? 3) In what ways does the hegemonic containment strategy of the state produce counter-hegemonic strategies by irrigation users? 4) What are the implications of the state's hegemonic strategies and the irrigation users' counter-hegemonic strategies, for the everyday practice of irrigation management in the study area? This paper uses irrigation management in northeastern Ethiopia as a case study. Irrigation management is an interesting entry point, especially when it involves external funding of construction and management. Such funds often come with conditionality imposed by funding institutions, revealing the power asymmetry among the various actors. Ethiopia is also a good case study country because of an apparent 'strong state hand' present in all development initiatives in the country, including irrigation management.

This paper is organised into five sections. The first one is devoted to methodological aspects, while the second presents the way the Ethiopian government uses its political ideology to diffuse its economic imaginations irrigation agriculture as being 'developmental'. This section also presents the mechanisms and limitations of translating the government's economic imaginations concerning irrigation agriculture into everyday irrigation management by users. We then highlight the counter-hegemonic aspects of irrigation users' response to the containment strategies of the state. The final section presents our conclusions.

² Economic imaginaries refers to the "imaginatively narrated, more or less coherent subset of all economic activities that are aimed at the social appropriation and transformation of nature for the purposes of material provisioning" (Jessop, 2004).

METHODOLOGY

This paper is based on a methodology inspired by critical realism.³ Cultural political economy and critical realism share ontological claims about reality and about understanding the discursive aspects of reality (Fairclough et al., 2004). In critical realist ontology, reality consists of structures, generative mechanisms, and practices (Sayer, 1992). Hence, for critical realists, understanding reality needs to move from studying the regularity of events in the empirical domain towards understanding the structures and generative mechanisms that brought about the events (Bhaskar, 2008). Such an ontological orientation was helpful during the field research, and ensured that the events observed were not taken at face value. Rather, the focus of the research was on identifying the overall structure of irrigation management, from national government policies to scheme-level organisation. Thus, it was possible to map the generative mechanisms of some of the critical coordination events observed.

At the level of epistemology, Sayer (1992) suggests a two-way iterative process between the abstract and the concrete. Abstraction is the basic form of structural analysis and identification of generative mechanisms. This involves starting with a preliminary conceptualisation of objects, and combining different sets of abstractions to develop a partial explanation of the concrete. The abstraction is refined through comparison with concrete field experiences. Hence, critical realist research often relies on a modified grounded theory approach (Yeung, 1997; Pratt, 1995), which makes use of both induction and deduction approaches to reality. Accordingly, the field work for this study was done in two rounds, in August 2013 and April/May 2014. The researchers went to the field with an initial theoretical perspective, trying to understand the institutional arrangements set up to manage the irrigation systems. From this initial abstraction, the structures and generative mechanisms of irrigation management were identified through iterative movement between field observation of concrete experience and theoretical reflections.

The field work involved a study of irrigation cooperatives in the Kobo-Girana Valley Development Program (KGVDP), in northeastern Ethiopia's Amhara Regional State. All the data was collected by the first author of this paper. Six irrigation cooperatives were studied at management level, and two cooperatives were studied in more detail, including their members and management. KGVDP was chosen for the study because it is one of the 'best practice' experiences of irrigation in Amhara Region and in the country as a whole. Primary data was collected through ten key informant interviews with experts from KGVDP, Amhara Water Works Design and Construction Enterprise, and the Amhara Region Bureau of Agriculture; one focus group discussion with KGVDP experts, with six discussants; and six focus group discussions with cooperative executive committee members and 20 individual in-depth interviews with cooperative members. Selection of the irrigation schemes for the study was done by combining multistage purposive and random sampling techniques. The purposive selection process used two criteria: age of the irrigation scheme, and irrigation technology used for water distribution to group irrigation schemes. First the 18 irrigation schemes which were functional were grouped into 'old' and 'new'. Then a cluster of irrigation schemes were identified which were managed by an agronomist and used diverse irrigation technology.⁴ Afterwards, one irrigation scheme was selected randomly from the two groups, and these two irrigation schemes were then selected for a detailed case study. Selection of sample respondents was done using a stratified random sampling technique. The list of members of the two irrigation schemes was obtained from the irrigation agronomists. The members were then stratified according to their land size, as big, medium, and small. Since there were more farmers with medium-sized farms than those with large and small farms, proportional samples were taken from each category of farms. From the groups with big and small land size farms, two

³ The paper reinterprets the PhD thesis of the first author in a CPE frame. See Gebreyes, 2016.

⁴ Each of the agronomists employed by KGVDP manages two to four irrigation schemes, depending on the size of the scheme.

respondents each were randomly chosen. From the medium-sized farms six respondents were randomly chosen. Accordingly, the total number of individual respondents was 20 – ten per irrigation scheme. Finally, for logistic reasons, the irrigation schemes managed by the same agronomist who managed the irrigation schemes chosen for detailed study were used for executive committee focus group discussions.

The data analysis involved on-the-field pre-coding and identification of structures, causal mechanisms, and theoretical reflection, as well as back-to-office analyses. After finishing the field work, the researcher transcribed the data using 4 transcription software, and uploaded it to MAXQDA 11 Qualitative Data Analysis software. As the study was part of a bigger natural resource management study, coding to identify structures and generative mechanisms was done in the light of broader natural resource management and state – society-nature relationships that exist nationwide.

The initial coding was done by reading selected interview transcripts line by line and labelling them. This initial process generated a large number of thematic issues. The analysis then merged some of the thematic issues to identify broader categories of codes that relate to the research questions of the study. The coding categories that this paper uses include the need for collaboration, the role of the state in collaborative activities, and the challenges of collaboration. The 'need for collaboration' code includes sub-codes such as the nature of interdependence among actors, and the importance of working together. The 'role of the state in collaborative initiatives' code includes framing the state's roles, facilitation of collaboration using coercion, facilitation of collaboration using catalyst roles, and forms of resistance against state interventions. The 'challenges for collaboration' code category includes sub-codes such as poor incentives for collaboration, weak controlling mechanisms, ignorance, poor work culture, absenteeism, vandalism of public work structures, leadership failure, free grazing, and by-law implementation. After the broad code and sub-code categories were determined, the actual coding continued with all the interview transcripts that were selected for analysis. In doing so, new codes were created, and some codes were abandoned in response to emerging trends in the data. After the coding was complete, all the coded segments were retrieved from and the coded segments were summarized. This summary was then used to generate the arguments which answer the study's research questions. As the writing-up process is actually considered to be the main analysis stage of a qualitative research study (Pratt, 1995), the researchers went through an iterative process of reflection and analysis between the data, the theoretical framework, and the overall narrative that was developing.

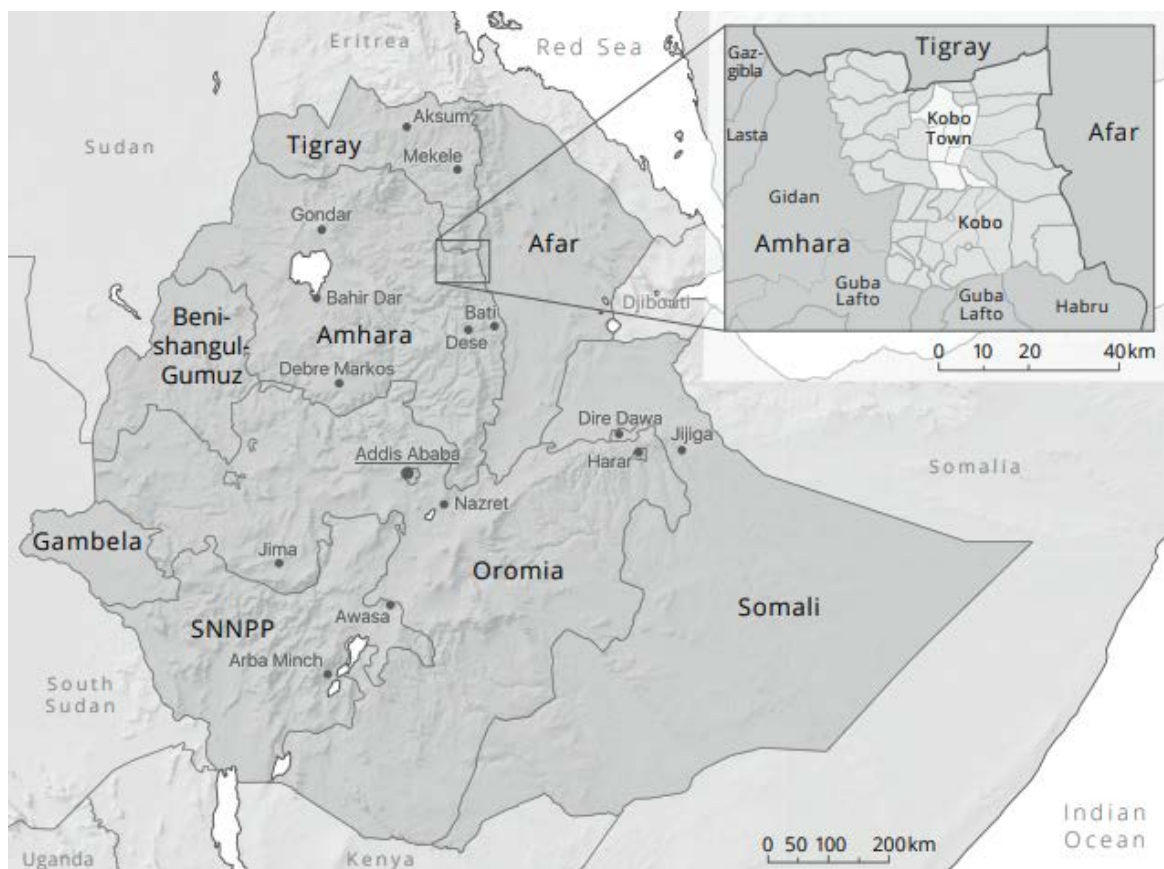
THE CASE STUDY: IRRIGATION MANAGEMENT IN THE KOBO-GIRANA VALLEY DEVELOPMENT PROGRAMME (KGVDP), NORTH WOLLO, AMHARA REGION

Ethiopia has a total land cover of 110.43 million hectares, out of which 36.26million hectares are arable land. The agricultural sector accounts for 43 percent of the country's GDP and 90 percent of its export earnings. Cereal crops dominate agricultural production, accounting for 70 percent of agricultural GDP. Over 90 percent of agricultural GDP comes from smallholder farmers, with close to 55 percent farming on a hectare or less of land (MoARD, 2010). Ethiopia has huge water resources, especially in physical terms. The country has 12 river basins with an annual runoff volume of 125 Bm³, and groundwater potential estimated at between 2.5 and 30 Bm³. While the surface water irrigation potential is 5.3 million ha, the groundwater is estimated to have a potential capacity to irrigate 1.1 million ha (Awulachew, 2010). However, actual utilisation of the country's water resources for irrigation is negligible, with a total of only around 700,000 ha irrigated (van Steenbergen et al., 2015). As a result, the agricultural sector in Ethiopia – and thus the national economy – is highly dependent on rainfall. Records show that this has been the case historically as well (Conway and Schipper, 2011). As a result, there have been a number of natural resource management interventions to tackle the challenges of

moisture stress and drought in the agricultural sector. One of these initiatives has been irrigation schemes.

One of the 'best practices' of irrigation-based agriculture in Ethiopia is the Kobo-Girana Valley Development Program (KGVDP). Kobo-Girana Valley covers an area of 2849.5 km² in the three districts of Habru, Gubalafto, and Gidan, North Wollo Administrative Zone, Amhara Region (Figure 1). It is one of the pioneer groundwater-based irrigation projects in the country (van Steenberg et al., 2015). A document obtained from the KGVDP office indicates that the programme was established in 1999 by the Amhara National Regional State, with mandates to develop crop and livestock production and irrigation in the area, and to manage its natural resources. The programme was reorganised in 2011, under proclamation number 77/2011, with a refined focus on irrigation development (CARS, 2011). The irrigation scheme is funded by the Amhara Regional State Government. At the regional level, a board chaired by the President of Amhara Regional State leads the programme, and other members include the regional water bureau head, the agriculture office head, the finance office head, the president's office advisor, the zone administrator, the regional head of Technical and Vocational Education and Training (TVET), and the head of the KGVDP office. The board is responsible for allocating the budget and overseeing the overall functioning of the programme. At the district level, the programme is led by a steering committee, which includes members from the Kobo District Agriculture Office, the Amhara Water Works Construction Enterprise (AWWCE) Kobo Branch, the District Administration, the Police and Justice Offices, and the Ethiopian Electric Power Corporation (EPCO) Kobo Branch. The steering committee was established to handle operational matters that require intervention from the sector offices in the district.

Figure 1. Location map of the study area.



Source: UN OCHA and Kobo District Agriculture Office.

The valley has a total of 29,760 ha of irrigable land, with both surface water and groundwater sources. The annual recharge rate of the valley is estimated to be 170 Mm³, with a potential of irrigating 16,500 ha from groundwater sources. Up to the 2013/14 budget year, a total of 112 wells had been dug, and 57 of these were confirmed as going into the construction phase. While a total of 33 projects were operational during the same budget year, only 18 of them were functioning year-round, with a command area of 1381 ha, and 4105 beneficiaries.

The KGVDP irrigation scheme requires coordination among diverse actors, from construction of irrigation infrastructure to management of water use for crop production. At the construction stage, the regional government – more specifically, the regional bureau of water resources – is involved in providing policy direction and construction funding. The actual construction of irrigation infrastructure is in the hands of the Amhara Water Works Construction Enterprise. Once construction is complete, the schemes are handed over to KGVDP, which has a legal mandate to manage the irrigation schemes. Since water distribution requires electric power to run the pumps, the Ethiopian Electric Power Corporation is also an important actor. KGVDP delegates the management of the irrigation schemes to legally organised water user cooperatives under each scheme. The cooperatives, in close partnership with KGVDP, are responsible for day-to-day water distribution, as well as operation and maintenance of the irrigation schemes. The cooperatives are also the main mechanisms for the cluster-based production promoted by the KGVDP extension system, and the marketing of cash crops. While KGVDP uses the cooperatives for management of irrigation activities, legal responsibility for organising and developing the cooperatives lies with the district cooperative promotion office. KGVDP also depends on the district agricultural office for provision of agricultural inputs such as fertiliser and improved seeds. The programme office liaises with the political wing of the district administration, as well as with sector offices such as Environmental Protection and Land Administration and the district police office. Marketing of the agricultural produce of the cooperatives also requires the creation of market linkages with private traders in the area. Finally, the end users and ultimate beneficiaries of the irrigation schemes are smallholder farmers with years of experience in culturally embedded subsistence farming. Hence, irrigation management coordination under KGVDP requires a complex interplay of diverse state and non-state actors operating at different scales.

As a politically strong actor, the political arm of the state plays a crucial role in managing coordination among community and market actors. The state mobilises its developmental state political ideology (Gebresenbet, 2015) through different political, constitutional, and administrative social organisations (Vaughan, 2011), to coordinate the actions of the various actors involved in state-led 'development' programmes and projects, of which this case study intervention is one example. However, as will be shown in the coming sections, people also respond to state hegemony through various counter-hegemonic actions.

'DEVELOPMENT' AS A HEGEMONIC COORDINATION MECHANISM

The rise of the developmental state ideology and its hegemonic power

The ruling party, the Ethiopian People's Revolutionary Democratic Front (EPRDF), has the most explicitly articulated developmental state ideology in Africa (Routley, 2014). Developmental states are known for their hegemonic developmental ideology, which often includes economic growth coupled with fair distribution of growth benefits and wide legitimacy (Routley, 2014). The EPRDF model of the developmental state captures rent centrally and invests massively in sectors like hydropower, communication, and education (Clapham, 2018). The ideology is characterised by top-down decision-making, in which development agendas and strategies are set by EPRDF centrally, and sent down to lower levels for implementation without conditionality. The state provides "significant public services while exerting control over every facet of social life" (Matfess, 2015: 181). It claims apocalyptic

consequences for failure to embrace state developmentalism, often elevating the development agenda to a national security issue in order to describe the sort of hegemonic consensus that the party requires among party members and the public at large (Gebresenbet, 2015: 70).

The developmental state ideology of the Ethiopian government is the result of a historical process in which the party ideology has penetrated deep into the administrative wing of the government, as well into as the everyday lives of the people. In Ethiopia, understanding this process is essential for understanding water and other natural resource management policies, as well as operational issues such as irrigation management. Hence, this section provides a snapshot of the major trajectories of the developmental state political ideology of the ruling regime in Ethiopia.

The current political ideology of the EPRDF is a result of its historical path and of the adjustments it has made along the way in response to both internal and external demands. According to Vaughan (2011), the seeds of the current party's modes of government were sown in the period from the late 1970s through the 1980s, during the armed struggle of the Tigray People's Liberation Front (TPLF). The state-making process during those years was based on extensive mass mobilisation and the formation of rural associations. Village-level political leadership and people's associations were active in ensuring peace and security in the area, administering land, and promoting local development. The party also maintained strong centralised party leadership to push through the military assaults on the enemy, in line with its alliance with Marxism-Leninism (ibid). A lot has changed since the initial years of state-making under the TPLF. Now the party is bigger, having formed a coalition with parties of different ethnic groups to form the EPRDF. Vaughan (2011) argues that despite the shift from a longstanding socialist orientation to that of a developmental capitalist orientation, the party has maintained the importance of securing popular support through mass mobilisation and people's organisations. Delivery and control of socioeconomic advantages such as education, health, agricultural extension, and microcredit have helped the party to keep its grip on popular support both in rural and urban settings (ibid).

While mass mobilisation and centralised decision-making continue, two important episodes have changed the way the Front deals with economic development. First, after the Ethiopian-Eritrean war, the Front faced an internal split. The winning faction, led by the former prime minister of Ethiopia, Meles Zenawi, made major concessions by adopting liberal ideologies, emphasising the central importance of the economy to the Front and the nation as a whole (Bach, 2011; EPRDF, 2007). Many argue that this was the first time that the Front openly started showing its alliance to a developmental state ideology, using 'modernisation' through state intervention as the main instrument to attack the other side of the split faction and to legitimise subsequent policy decisions. This also marked a shift from party domination to strengthening the administrative wing of the state (Bach, 2011; Vaughan, 2011; Gebresenbet, 2015; Lefort, 2010).

In the 2005 election the Front lost a huge chunk of its electorate to its opponents. In the subsequent five years it was able to increase its membership from 760,000 to an unprecedented five million (Bach, 2011). 'Democratic centralisation' again took centre stage, with political decision-making shifting from state organisations to the Front. Developmentalism surfaced more prominently in the Front's ideology, which elevated it to the status of a security threat for the nation (Gebresenbet, 2015). The Front uses poverty as the ultimate enemy of the nation, calling for aggressive state intervention. It uses militaristic terminology, such as 'war against poverty', 'development army', 'development patriotism', and 'development hero/heroine', to describe the sort of hegemonic consensus that it wants to see among party members, public servants, and farmers (ibid).

It is important to note that the Front managed to stick to its anti-neo-liberal developmental state ideology while at the same time securing the highest development aid in Africa from the West (Hagmann and Abbink, 2011). The late leader of the Front, Meles, was an outspoken critic of neo-liberalism, calling it a 'dead end' not only for Ethiopia but for Africa as a whole. Hagmann and Abbink

(2011) provide various explanations as to how the Front manages to do so. First, the West sees Ethiopia as an important ally in its fight against terrorism. Also, a stable Ethiopia – amid chaotic neighbours like South Sudan and Somalia – has been highly valued by the West. Penalising the people for the political decision made by those in government also created a dissonance among donors. These combined, the donor community chose to turn a blind eye to the outright rejection of a neo-liberalism influence by the Front which is ruling Ethiopia with a heavy hand. Second, Ethiopia – similar to other African countries – managed to leverage emerging alternative development financing from China, India, and Brazil. With access to alternative development finance, often without much conditionality, the Front often confronts donors on what it sees as a violation of Ethiopia's sovereign rights (Hagmann and Abbink, 2011).

Developmental state hegemony and irrigation management

The water sector took centre stage in the government's developmental state agenda following the 2002 water sector development programme, where irrigation development has been one of the priority areas (Eguavoen and Tesfai, 2012b; MoWR, 2002). Both the Water Resource Management Policy (MoWR, 1999) and the Water Sector Development Program (MoWR, 2002) explicitly address irrigation issues, mainly the national priorities of ensuring food security, poverty reduction, and economic growth through irrigation. The national water sector development programme states that "[i]rrigated agriculture is important in stimulating sustainable economic growth and rural employment and is the cornerstone for food security and poverty reduction national agenda" (MoWR, 2002).

Major documents, such as the Water Resource Management Policy (1999), the Water Sector Development Strategy (2002), and the Ministry of Agriculture/Agricultural Transformation household irrigation working strategy (2015) reflect hydrological and economic narratives. These narratives are based on the water resource potential of the country, with 12 river basins and huge groundwater potential. The core problem is considered to be the hydraulic engineering challenge of storage and withdrawal of this untapped resource. According to the narratives, once the engineering problems are solved, the next problem is turning this potential into an economic value that would provide food security and economic growth. This narrative matches the existing developmental state ideology of the Ethiopian government.

The developmental state ideologies of the EPRDF translate into programmes and projects within the government. Hence, KGVDP could be seen as an intervention designed along the lines of the state's political ideology. Accordingly, the political dimensions of irrigation management under KGVDP have different layers. The first layer is the overall political environment, where the developmental state ideology of the federal government prevails in development programmes and projects at every scale. As a government sponsored and led programme, KGVDP is expected to align itself with the overall political environment. For example, one of the quarterly reports issued by KGVDP states that the programme aims at contributing to the realization of the growth and transformation plans of the country by building a 'developmental army' consisting of experts and beneficiaries of the programme for effective management of the irrigation schemes (KGVDP Second Quarter Report, January 2014).

The second layer is the regional government. This layer of government exerts influence by acting as a channel for the national government developmental state ideology, as well as covering the cost of irrigation infrastructure and KGVDP's operational budget. Although it is hard to find an exact figure, an estimate by one of the key informants – a project engineer – suggests that the irrigation construction investment costs total a minimum of ETB 300 million over a ten-year period (US\$11 million, with the exchange rate as of 24 July 2018) (Expert interview 1, 2014). The initial stage of irrigation development in the valley was a typical hydraulic-mission-oriented approach (Molle et al., 2009), in which the regional government assessed the water resource potential of the area, then went straight into construction without consultation with local communities. One of the respondent farmers said:

Well, when the project was under construction, we didn't know what they were doing. We were so mad when the constructions were being made on our farm. We kept quiet because it was something from the government (Individual interview, April 2014).

Although things improved over time, the construction process remained dominated by technocrats of the regional government, mainly through the Amhara Water Works Construction Enterprise, without local quality control and farmers' participation. Interviews with beneficiaries, and reports issued by KGVDP repeatedly lamented the poor design and quality of the newly constructed irrigation schemes (Focus group discussion, April 2014; Individual interviews, April 2014; KGVDP Second Quarter Report, January 2014). Apart from covering the cost of irrigation infrastructure, the regional government also pays KGVDP's annual operational costs. As a result, at different times the regional government also showed its desire to use the programme as one of the growth corridors of the region. For example, the regional agricultural office attempted at different times to promote the commercial production of cotton and beans, in line with the regional agricultural transformation agenda. There was also an attempt by the regional government to use the beneficiaries as producers of improved teff⁵ seeds. Most of these regional initiatives were not successful, as either the interventions did not fit into local conditions or they did not respond to farmers' preferences (Expert interview 6, 2014).

The third layer of state involvement is KGVDP's relationship with the local government at the district level. KGVDP was established by regional proclamation (CARS, 2011) to promote irrigation management, improved and market-oriented agricultural production, and maintenance and operation of irrigation projects in the valley. In this sense, by the assessment of the authors of this paper, KGVDP is an autonomous organisation which offers a more professional service than the district agriculture office. At the local level, KGVDP works under an overseer who belongs to a steering committee whose members include representatives of the police, the judiciary, the administration and agriculture offices, the Amhara Water Works Enterprise, and the Ethiopian Electric Power Corporation (Expert interview 6, 2014).

The programme office and its experts aim at providing the services stipulated in the establishment proclamation of the programme, and in regular directions received from the regional government. This is seen in many of its operations, where the experts use either soft or hard techniques to impose the programme on local farmers. The soft techniques include packaging the programme's activities in the dominant 'developmental' ideology preached by the state. The messages of the experts are intended either to motivate farmers to align themselves with the developmental ideology, or to create a sense of guilt for failing to do so. In the latter case, refusing to cooperate with the programme is considered to be 'anti-developmental behaviour', backwardness or laziness. One of the experts, for example, complained that, "What we lack is visionary farmers... many are just happy with their small daily gain. They have no vision for the future" (Expert interview 6, 2014). Another expert stated, "Our bigger struggle is convincing farmers to produce three times a year. They feel like the government is doing it just for reporting purpose" (Expert interview 2, 2014).

Governing irrigation management

The hegemony of the government developmental state ideology requires governmentality mechanisms in order to ensure that beneficiaries will cooperate, to the advantage of the state. Governmentality refers to the procedures, strategies, calculations, and other mechanisms used by the government to monitor and control citizens. Understanding this process would help us to unpack the black box of hegemony and see how the development state ideology sets its foot on the ground (Jessop and Sum, 2006a). In this regard, three of the most important governmentality mechanisms in play at KGVDP are:

⁵ Teff (*Eragrostis tef*) is one of the staple food crops in Ethiopia.

the formation of KGVDP as an autonomous, yet state-dependent, body; the organisation of farmers into cooperatives and other small groups; and controlling the technologies that determine access to irrigation water.

The regional government decided to use a mix of state and community irrigation management for the Kobo-Girana irrigation schemes. It established an autonomous organisation to handle irrigation management, namely the KGVDP office. The regional government controls the activities of KGVDP through the regional board. The board meets every three months and deliberates on the plans and reports of the programme office. Such high-level political attention enables the programme office to keep abreast of the policy directions from the regional government, and allows the regional government to prescribe its development agendas to the programme office with ease.

At operational level, the programme office must coordinate its actions with other sector offices for smooth functioning of its irrigation schemes. In principle, the actions of these sector offices are supposed to be coordinated by the district-level steering committee. The chair of the steering committee is the head of the district government. However, interviews with experts and a review of KGVDP documents indicate that the steering committee fails to meet regularly and to make a concerted effort to alleviate the structural problems of the programme (Expert interview 6, 2014; Expert interview 2, 2014; KGVDP Second Quarter Report, January 2014). Problems related to construction design and quality, and the irregular electric power supply are the biggest challenges facing the programme. They were supposed to be resolved by the steering committee but were not (KGVDP Second Quarter Report, January 2014). The only meaningful relationship among the steering committee members is with the district agricultural office, but that is also limited to taking quotas of improved technology from the district agriculture office and reporting back at the end of the year. In general, because of the professional nature of KGVDP mandates, it has no political mobilisation capacity at operational level; neither is it well linked to the local-level mobilisations of the political wing of the state. As a result, although it is obliged to take political direction on 'developmental targets' from district, regional, and national levels of government, it lacks the capacity to implement this direction in its irrigation schemes.

The second governmentality mechanism used by the state is the use of farmers' organisations, mainly irrigation users' cooperatives. The legal mandate to organise and promote cooperatives comes from the Cooperative Promotion Agency (ANRS, 2006). While the district cooperative promotion agencies organise primary cooperatives, zonal cooperative promotion agencies are responsible for the organisation of cooperative unions (Emana, 2009). Accordingly, there are 33 registered primary cooperatives under KGVDP irrigation facilities. There is also one cooperative union with 21 primary cooperatives and 4105 members. The programme is able to control the members by controlling their leaders, and through the by-laws of the cooperatives. The regional cooperative proclamation demands that each cooperative develop its by-laws in accordance with its purpose (ANRS, 2006). However, in practice, the cooperatives receive by-laws from the cooperative promotion agencies, with little room for contextualising them. One of the KGVDP experts interviewed stated that, "One weakness that I observed in our cooperatives is their by-laws. It is copy and pasted from the regional template" (Expert Interview 4, 2014). This allows the programme office to include articles which seriously penalise those who do not heed the programme directions, and prevents the cooperatives from formulating their own by-laws. As a result, penalties for violating the by-laws are not strictly observed, compromising the effectiveness of the cooperatives. One of the interviewees stated:

We have penalties stated in our by-law, for absenteeism in meetings it is Br20, for free grazing livestock Br50 per head, for piercing the lateral while ploughing Br100. This is decided, but the executive committees do not implement it. As a result people do not care much about the by-law anymore (Individual interview 3, 2014).

The negative attitude of farmers towards cooperatives also reduces the effectiveness of cooperatives as a governmentality mechanism. This is partly due to negative experiences of the cooperative movement

during the socialist Derg regime. The bitter experiences of cooperative farming during the socialist Derg era, and their colossal failure, make the irrigation users distrustful of cooperatives (Emana, 2009). This is evident in the level of maturity of the cooperatives and the services that they provide for their members. None of the cooperatives has collective capital beyond what is needed to pay their electricity bills and minor maintenance. As a result, none of the cooperatives has enough capital for major maintenance work. Almost all the cooperatives that have been using drip irrigation for close to ten years have failed to replace their irrigation laterals despite serious complaints that they are worn out (KGVDP Second Quarter Report, January 2014; Expert interview 2, 2014).

The other way that KGVDP controls cooperatives is through control of the cooperative leaders. Interviews with members of KGVDP revealed that the strongest cooperatives were those with strong leaders. Leaders were called 'strong' when they managed to develop a shared vision among members, foster productive links with external actors, manage their internal affairs, and work hard as a good example for other members to follow (Focus Group Discussion 2, 2014). The expert interviews also confirm this:

The leaders differ from project to project. Those coops with strong leaders, they are usually strong. And those coops with weak leaders are often weak, both financially and in their operation. The strength of coops depends on the strength of leaders. In general, if the coops get strong leaders, you can see that things could change for the better (Expert interview 1, 2014).

However, the influence of cooperative leaders is curtailed by a number of factors working against the leaders. First, the programme often pushes them to accept recommendations that their members do not agree with, putting their legitimacy into question in the eyes of their members. Second, management of the cooperatives requires basic literacy, and business and managerial skills, which most of the leaders lack (Field Observation 5, 2014; Individual interview 2, 2014; Individual interview 3, 2014).

The irrigation technology also serves as a control mechanism for KGVDP, though in some cases it also acts as an obstacle. Water withdrawal depends on being able to pump it out of the ground. KGVDP technicians have exclusive access to, and authority over, the switches of the pumps. When the programme office demands something, and the cooperatives fail to meet the demands, the experts always threaten to cut off the water supply. The water distribution technology also determines the level of control that the cooperative leaders and KGVDP experts have over individual farmers. Individual farmers who do not observe the demands of the cooperative leaders or the experts and prefer to use furrow irrigation techniques, can easily be identified and punished by cutting off their water supply, which is not possible with sprinkler and drip technologies. For furrow technology, the irrigation water is often released on an individual basis, whereas for drip and sprinkler users the technology demands that all the participating farmers receive water at the same time.

One interesting observation was the absence of a link between the irrigation management structures and local institutions. The study villages has traditional self-help associations called *kires*, which serve multiple functions, including the organisation of collective action for flood diversion for both crop production and livestock watering, the maintenance of livestock enclosure for dry season grazing, and the protection of village trees from unlawful cutting. The *kires* use strict social control mechanisms: absenteeism in collective works, for example, is punishable. The elaborate social control mechanisms of these local institutions make them effective in mobilising local communities for collective action. However, the irrigation management mechanisms completely bypass such local institutions.

COUNTER-HEGEMONIC STRATEGIES OF IRRIGATION USERS

The hegemonic project of the state, whether developmental state ideology or complex governmentality strategies, often meets overt and covert resistance by local communities. While this resistance is often directed at state interventionist actions, it may also be the result of a clash between state action and local cultures. The overt resistance by local communities started during the initial phases of KGVDP, when the government began developing the groundwater source into an irrigation scheme. This initial stage of irrigation development faced stiff resistance from local communities when farmers suspected that the government action was a way of grabbing their farm land. They responded by actively sabotaging the construction activity and destroying the irrigation infrastructure (Individual interview 1, 2014, Individual interview 4, 2014; Expert interview 4, 2014). Even after farmers were convinced that the irrigation schemes were built for them, their resistance continued for some time because of a widespread fear that the schemes would force them to abandon cultivation of their traditional sorghum variety which takes longer to mature. This led to numerous instances of destruction of the irrigation accessories by villagers, which frustrated both the project staff and the local government (Individual interview 4, 2014; Expert interview 4, 2014).

Once the irrigation schemes were fully functional, the programme office continued with its containment strategies to use improved technologies and practices. When farmers failed to see the benefits of the programme recommendations, and yet were still pushed by the programme experts, they resorted to different forms of overt and covert strategies of resistance. In most instances they objected to the recommendations of the experts openly, and refused to implement them on their farms. For example, many of the respondents objected to the recommendation to plant teff in rows. Others objected to the use of inorganic fertiliser on their farms. Either they objected to the recommendations completely, or they did not agree with the recommended amounts. When forced to take the fertiliser, farmers refused to apply it on their land, preferring to sell it on the black market (Individual interview 2, 2014; Individual interview 9, 2014).

One area where there has been a continuous struggle with local communities is producing for the market. The establishment proclamation of KGVDP states that the programme would help to commercialise the smallholder subsistence production system (CARS, 2011). To that end, the programme office introduced different crop choices for commercialisation. However, only onions got a sustained market, while attempts to produce other cash crops such as cotton, beans, pepper, and tomatoes failed (Individual interview 3, 2014).

Farmers resist producing for the market for two reasons. First, it often comes with risks, requiring the ability and willingness to accept the risks of market failure. For most of the smallholder farmers, it is either impossible or too costly to take such risks. Besides, for farmers in the area, life was never market oriented. Production was mainly for subsistence, savings were made in kind using home-based storage of grains, and marketing was limited in scope and meant only to cover a few non-food expenses. Hence, some of the respondents said that even with the irrigation, they would prefer to produce food items which they know how to save and exchange. Farmers who have earned well from commercial production have found it hard to cope with the challenge of saving in banks and managing their spending (Expert interview 1, 2014, Individual interview 9, 2014).

DISCUSSION AND CONCLUSION

Irrigation management requires robust coordination mechanisms among the actors involved in its management (Meinzen-Dick, 2007). This is especially true in irrigation schemes where the beneficiaries are smallholder farmers, since water distribution, farmers' organisations, extension services, operation, and maintenance, as well as the marketing dimensions require a strong coordination mechanism among the various actors.

The case study presented in this paper provided a detail account of the link between irrigation management and the broader political context in Ethiopia. The paper aimed at understanding the macro-political context which sets the hegemonic imaginary for development in general and for irrigation management in particular, and the micro-mechanisms that the state uses to contain its subjects in order to achieve its developmental ambitions (Sum, 2011). At the macro-level, within the hegemonic developmental state narrative in the country, the water sector became a primary focus following the 2002 water sector development programme. Accordingly, the state plays an active role in directing irrigation interventions towards nationally set development priorities. This hegemonic economic imaginary expects citizens to rally behind whatever the government frames as 'development'. In the case of irrigation management, the economic imaginary is based on hydrological and economic narratives of using existing water resources to solve persistent drought and promote economic growth. The KGVDP case shows the ways in which this particular narrative of what the state calls 'development' in the water sector reveals itself at different layers of irrigation management. The first layer is the overall political environment, whereby the developmental state ideology of the federal government prevails in every development programme of the government at all scales. The second layer is the regional government, which exerts its influence by acting as the channel for the national government's developmental state ideology, as well as covering the costs of irrigation infrastructure and the KGVDP's operational budget. The third layer of state involvement comes from the KGVDP establishment proclamation and its relationship with local governments at the district level. The constellation of these political hegemonies gives exclusive decision-making power to KGVDP managers on water distribution, level of production, and technology of production.

At the micro-level, the macro-level economic narratives of irrigation management are translated into mechanisms for controlling the everyday practice of coordinating irrigation management to serve the interests of the state. The governmentality strategies of KGVDP include its control of the steering committee and of its agronomists, as well as of irrigation cooperatives and technologies. The steering committee coordinates the actions of sector offices which have a role in irrigation management in the area. The programme office also controls the irrigation users' cooperatives. While in principle the cooperatives were supposed to serve the best interests of their members, in practice they only serve as control mechanisms for the programme office. Hence, by controlling the cooperatives' operation, combined with controlling the services that the programme provides for irrigation users, KGVDP can influence decisions made by the cooperatives. The irrigation technology also serves as a control mechanism by KGVDP to coordinate irrigation management actions. The technicians at KGVDP had exclusive access to, and authority over, the switches of the water pumps. If the programme office demands something, and the cooperatives fail to comply, the experts will use the threat of cutting off the water supply as leverage to make the cooperatives comply.

This paper also described the ways that counter-hegemony is produced out of the containment strategy of the state (Sum, 2005). The effectiveness of the containment strategies of the state through KGVDP managers was reduced by the limitations of the state strategy itself and the counter-containment strategies of the irrigation users. Failure to have control over its steering committee has resulted in limited capacity and has caused a lack of trust within the irrigation users' cooperatives. Irrigation technologies (such as the drip irrigation system) do not allow for sanctioning of individuals who violate cooperative arrangements. These are some of the micro-level challenges of the state's containment strategies. Weak implementation of macro-level political strategies – such as building a 'developmental army' among irrigation undermines the ability of the hegemonic developmental state ideology and the associated developmental targets and practices, to find an appropriate discursive and organisational structure with which to reach irrigation users.

Irrigation users also countered the containment strategies of the state. The resistance began when the government started constructing the irrigation schemes without consulting users, creating a suspicion about who was going to benefit from the schemes. Even after farmers were convinced that

the irrigation schemes were built for them, their resistance continued as the state attempted to force farmers to produce for the market and use 'improved technologies and practices'. When farmers were pushed to accept the programme recommendations by the programme experts – despite not being able to see the benefits of it – the result was widespread hostility towards the intervention, which only exacerbated their resistance.

The struggle between the state hegemony and irrigation users' counter-hegemonic strategies in the study areas posed a serious challenge to the irrigation-intervention potential for climate-proofing subsistence farming, and stimulating agricultural transformation. The containment strategies of the state also created their own risks for farmers by creating a condition whereby any recommendation from the regional government was accepted by the programme office and other operational-level offices as 'development', irrespective of the contextual relevance of the recommendations.

The findings of the study are in line with the few critical studies on water resource management in Ethiopia. For example, studies by Eguavoen et al. (2012) and Eguavoen and Tesfai (2012a) have shown that irrigation interventions can have winners and losers, and have highlighted the state's role in 'producing' winners and losers. Van Steenberg et al. (2015) take an explicitly 'political' approach to unpacking the 'political will' in water resource management in Ethiopia and Yemen. They find that the Ethiopian state combines hard and soft political strategies to direct groundwater use to developmental projects of the state. In line with these findings, this paper also concludes that water resource management in Ethiopia is inherently a political enterprise. It is directly and indirectly affected by the developmental state ideology and the economic imaginaries of the state. The paper also unpacks the 'politics' and shows that the state itself is not a monolithic entity but is composed of political and administrative wings at different scales. Hence, irrigation management involves coordination not only between the state and irrigation users, but also between different sector offices of the state.

The Ethiopian government is expanding its large- and small-scale irrigation interventions. Given the current political orientation in Ethiopia towards a development state ideology, development policies – including irrigation management – will be highly political in nature. In such an environment, conventional studies of technology adoption and institutional development in irrigated areas that do not seriously consider the 'political' component, will fall short of proper explanations. Additionally, assessing the outcome of current and future irrigation interventions requires a serious consideration of the politics of the country as a whole. Hence, more critical research work is needed to understand how the political, economic, social, and ecological dimensions of an irrigation intervention interact with, and influence, irrigation management.

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