

Water sector governance: a return ticket to anarchy

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A political-science perspective of anarchy holds that anarchy is the absence of a ruler. In the water sector, especially in terms of irrigated agriculture, emerging deficiencies of public irrigation systems as well as the budget crisis of governments to sustain irrigated agriculture, resulted into increased water user participation. Understanding the apparently increasing smidgeon of anarchy in the water sector includes the appreciation of the complexity of water governance developments such as the introduction of Participatory Irrigation Management (PIM), Irrigation Management Transfer (IMT), basin councils, Integrated Water Resource Management (IWRM) and Multi-Stakeholder Platforms (MSP), as well as the limited role of non-governmental organisations (NGOs) and grassroots organisations (GROs), for decades considered the ‘magic bullet’ in taking over and providing state services to the public. We conclude that governance is anarchy by other means.

1. Introduction

At the turn of the 1990s, at the end of the Cold War, Robert D. Kaplan (1994) caused a stir in US policy circles identifying pockets of anarchy in Africa and in inner-cities of the US. The journalist made the headlines attracting major political attention by predicting ‘the Coming Anarchy’. While the global system was already believed to be in a state of anarchy, Kaplan also put this notion of order within the State into question, by pointing out that the apparent order is deceptive: political maps tell “such lies” showing order where in reality there might be vacuums of power of the state, in slums, in spaces ruled by war lords, in contested territories: pockets of anarchy. Twenty years later Kaplan still claims a coming anarchy.

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Kaplan's impressions have been strongly contested, but may trigger us to go forward into two directions: (1) questioning whether the State has hegemonic power within its own territory and (2) whether official wisdom (in this case maps) represent wanted 'truth'.

In the water sector, many areas escape central planning and control (Conrad, 2006; Lebel, Garden, & Imamura, 2005). Water theft is a recurring concern in public irrigation systems (Rinaudo, 2002). Unaccounted for water (UFW) and 'deviance' attests to the shortcomings of the modernist dreams even in the most controlling states. The concern with the dark, ungoverned or messy spaces in water governance comes from different angles. Other water systems somehow survive in the middle of civil war and failed or failing statehood as in Afghanistan (Thomas & Ahmad, 2009; Wegerich, 2010a). Recurrent disaster and war (complex emergencies) but also political and economic transition (transition economies) overwhelm normality. This messiness can also become normalised and threaten environmental sustainability. Rosenau (1998) concedes that anarchy also brings opportunities for "greater flexibility, innovation and experimentation in the development and application of new control mechanisms".

This contribution first unpacks the concept of anarchy, then discusses its appearance in the water sector. This is followed by a section focusing on the rise of anarchy in the water sector through different levels of planned water control in irrigation schools and then a further increase through the rise of socially engineered governance approaches. The article closes with a 'further thoughts' section.

2. Anarchy – learning from political science and philosophy

Anarchy originates from the Greek *An-archy* which means 'nobody rules' (un-rule). In the Realist (Realpolitik) still highly influential tradition of International Relations, without a hegemonic ruler, a "Leviathan", to impose order and stability, there is a permanent "state of nature", a dog-eat-dog world which made life "nasty, brutish and short" as Machiavelli had it. The "state of nature" is anarchy. An implication would be, if there is a ruler (a state), then there is order or no anarchy within the State.

Where governments do not carry out regulatory tasks and provide basic services, there is "weak governance" (Rosenau, 1992). But is it a sign (or: evidence) of weakness when private service providers directly regulate water service or when communities self-organise? After all, the State turns out not to be neutral, promoting many times interests of its own. It may also use its supposed monopoly over the interests of its population (State security vs. human security). States cannot take their continued existence for granted, but may need to beg, borrow or steal to ensure its survival (the state as protection racket (Tilly, 1985). James C. Scott (2010) even roundly celebrates the absence of the State. He sees the State as an appropriating force, not only in an economic but also in a cultural sense – the boundaries of the (in his case Southeast Asian) States are seen as the boundaries of civilization. As State are also war-makers, sheltering oneself in the hills, choosing a nomadic existence or shifting cultivation to opium, far from the remit of the state can, in his analysis, be a sound system of survival (see also Lebel et al., 2005).

As Kaplan (1994, p. 15) argues, “the state, recall, is a purely Western notion, one that until the twentieth century applied to countries covering only three per cent of the earth’s land area. Nor is the evidence compelling that the state, as a governing ideal, can be successfully transported to areas outside the industrialized world”. The problem might lie with the definition of the ‘State’ and with the perception of what the ‘functioning’ State should encompass. This puts into question classifications of states as ‘fragile’ or ‘failed’, which give the impression of ‘anarchy’.

In the political science literature, anarchy these days has primarily come to mean that no one is in charge *alone* (see also Kooiman, 1993). On the international scene the lack of a single dominant state is offset in various (but not all) domains by multilateral institutions – governance without government (Rosenau & Czempiel, 1992) leading to a form of ‘global governance’. The optimistic view of cooperation under anarchy is represented by the institutional liberal tradition, which believes states will become obsolete (Young, 1989). However, this Kantian tradition is not always heedful of Kant’s insight that power is still needed – “the law is only an ‘empty recommendation’ if force is not included to make this law efficacious”.

In the social contract theory debate anarchy (autonomous and free individuals living in a state of lawlessness, nature) is seen as the direct opposite from an absolute ruler (coercive authority). We shall argue that this debate misses an executive or enforcement angle. Anarchy with regard to the water sector should be understood in opposite to control, which is gained by law and enforced by technical, organizational, economic and cultural means. A mismatch of enforcement factors can create anarchy. In addition, the top-down creation of platforms for governance at different water boundary levels which is supposed to either replace or supplement a single executive component (the organization) may be seen as increasing anarchy, first because governance implies that nobody rules alone and secondly because the top-down creation most often implies that the vested interests of some are represented (see below).

This implies that we shall consider anarchy in terms of what it does, rather than what it is supposed to do (a model). They may perform better or worse (for certain actors or totalities) independent of whether they are formally legal or illegal. The legality or illegality of any form of anarchy, then, is not related to its performance of the results it renders. Moreover, the absence of formal rule, or implementation capacity, does not have to be negative if water resources are successfully self-governed. Instead, we claim anarchy is not necessarily a choice for or against a form of rule, but a mode of governance that evolves over time due to competing pressures from inside and outside the system at issue.

3. Anarchy in the water sector

In the environmental resource domain, anarchy has its corollary in the Tragedy of the Commons (Hardin, 1968), a ‘free-for-all’ where everybody takes as much as they want, disregarding the finite nature of the natural resource. In response, multilateral donor institutions have often advocated, or imposed, the clarification and codification of property

rights. Influentially, Rogers and Hall (2003) referred to the anarchy that results when property rights and enforcement institutions are not well-established, bringing a Tragedy of the Commons.

Borrowing from Seckler (1982) Wade (1984, p. 298) makes reference to “populist anarchy”, however his usage of the term anarchy is less far-reaching than the usage of the term in political theory: [. . .] “As I use it, ‘anarchy’ is not intended to mean absence of any kind of order, nor specifically an atomized, unpredictable pattern of governmental corruption with few limits or ground rules. On the contrary, the corruption system is relatively well organized. The term is used to suggest weak governmental authority for carrying out ostensible public programmes”. More recently, De Fraiture, Gael Ndanga Kouali, Sally, and Kabre (2014, p. 212) have made reference to “irrigation pirates” in Burkina Faso: “increasingly farmers use individually owned motorized pumps to draw water directly from the reservoir and irrigate vegetables upstream of the dam. This practice, while tolerated, is unauthorized and referred to as ‘irrigation pirate’ in French”.

In practice, however, different sets of rules may be utilized by individuals or communities – which could be either project, local (indigenous) or national rules. This emerging patchwork rule of law has been called ‘legal pluralism’ (von Benda-Beckmann, von Benda-Beckmann, & Griffiths, 2005). Tushaar Shah’s (2009) ‘Taming the Anarchy’ for example flags up the anarchy resulting from the stupendous proliferation of water pumps in rural India, with an ‘explosion’ in the extent and importance of the number of private wells. Unlike surface irrigation which invites regulation by the state’s collective institutions, Shah claims India’s groundwater management has become an atomistic, free-for-all, reinforced by the World Bank induced institutional reform ostensibly sought to address this ill, yet the institutional arrangements appear to be a sophisticated patchwork supporting what appears to be a win-win situation of lack of control, or may even have been more or less designed to do nothing (see De Man, in press). In the end, of course, this boils down to an ongoing Tragedy of the Commons, leading to the inexorable depletion of groundwater resources. In India, despite institutional reform the degree of anarchy is ‘colossal’ (Shah et al., 2004).

Next to the Tragedy of the Commons, within the water literature, water debates have often contrasted the ills of the mega solutions of the state’s hydraulic mission with the (often idealized) knowledge and technologies of ‘traditional’ communities (Boelens, 1999; Shah et al., 2004). Lack of State control then translates into anarchy, which may be bad for sustainable resource base due to the imperfections of human action, but certainly also bad for the State’s self-reproduction.

3.1. Developing towards Anarchy within the water sector: the case of irrigated agriculture

To understand the set-up, performance and dynamics of ‘anarchic’ systems it is important to understand how systems developed over time. For that purpose, we will zoom in on the origin of large scale irrigation systems in semi-arid countries.

In (semi-)arid areas, land and irrigated agriculture has been the main source to manifest the State's power in the past (Wittfogel, 1957). By the example of Lesotho, Ferguson (1994) shows in great detail how development projects help the state access the hinterland. Yet a closer look at the experience of irrigation during colonialism highlights that the development of water control infrastructure and management was a 'learning process'. Agriculture might have manifested the power of the State through taxation, but failed to exerted control over all aspects of water management. Irrigation canals were constructed but there was little control over water utilisation. For example, under British irrigation in colonial India, the construction of the canal was limited to the main canal level and the farming communities "could simply apply for an irrigation right and then had to build their own supply canals and 'hook them up' to the government main or branch canal" (Van Halsema & Vincent, 2006, p. 61). A few decades later secondary canals were taken over by the irrigation department and again a few decades later the technology was invented to control water discharge to the tertiary units. Yet the local communities objected the government taking more control. Hence, although, agriculture might have through taxes manifested the power of the State, this does not imply that the State had control over all aspects of water management.

Even during the 1960s in some countries the "irrigation infrastructure built by the governments consisted only of primary and secondary canals, with a few farm outlets" (Plusquellec, 2002, p. 14)¹. Repetto (1986) highlights that irrigation systems might have been constructed from the start in deficient conditions (see also Huppert, 2013; Thurman, 2001) or were not economically viable but suited other (non-agricultural) political or water bureaucracy interests, such as protective irrigation to prevent famine or large lift irrigation², to settle populations or protect borders (Dukhovny & De Schutter, 2011; Wegerich, 2010b).

In cases in which colonial States took over power, this has often led to a rearrangement of the local system, the distribution of rights and collection of taxes to secure the powers of the new States. These new arrangements disturbed if not completely altered the old arrangements and partly triggered their non-sustainability (for India see Mosse, 1997; Wade, 1984; for Pakistan: Merrey, 1986; for Central Asia: O'Neill, 2003). Pockets of anarchy emerged within former local water management systems. Colonial irrigation systems were built with a certain overarching logic in mind: tax revenue, agricultural production, increases of irrigated area, settling colonized population or settlers from the colonies (Ertsen 2006, 2007). With independence, these larger frameworks partly disappeared. New agricultural policies, land reforms, budget constraints, population pressure (leading to fragmentation or expansion of irrigated area within irrigation system) and changing markets have all contributed to the erosion of water control on the ground. The erosion of water control however does not mean less is produced on the land – it can lead to the

¹ The local level (tertiary or lower level) often was left by the state to be taken care of entirely by the local community.

² In which pumping stations lift water to higher areas, for example in Central Asia much above 100 meters.

underreporting of irrigated areas under irrigation (Conrad, 2006; Huppert, 2005; Maruti, 1999; Ul-Haq, 1998).³

With former colonial States gaining independence and growing dependence on international investments in irrigated agriculture, inappropriate irrigation technology is transferred. Although the irrigation technology was anticipated to increase water control, due to the lack of training of the Irrigation Departments or simply because of the new technology being out of context, the rise in technical control did not lead to an overall rise of water control and even led to a decline of control (Facon, n.d.; IWMI, 2011; Van Halsema, 2002).⁴ Similar to the transfer of technology is the critique to the transfer of institutions such as permits, fixed water allocations. However, here the introduction of new institution was either not implementable or led to resistance of the local community (on water pricing see Cornish, Bosworth, Perry, & Burke, 2004; Molle & Berkoff, 2008; on permits or licences see Boelens, 2009; Warner et al., 2009; Wegerich, 2010a).

4. The rise of “governance”

With the emerging deficiencies of public irrigation systems as well as the budget crisis of governments to sustain irrigated agriculture, the new solution was to increase water user participation.⁵ While water often is a public good, water management has steadily seen an increase in stakeholder involvement and decentralisation: From Participatory Irrigation Management (PIM) to Irrigation Management Transfer (IMT) to basin councils to Integrated Water Resource Management (IWRM) and Multi-Stakeholder Platforms (MSP). Key in this development are non-governmental organisations (NGOs) and grassroots organisations (GROs) which have been seen until the mid-1990s as the ‘magic bullet’ in taking over and providing state services to the public. Since, then questions of accountability have been voiced:

“Although the accountability of GROs (to their members) may seem more straightforward, there is surprisingly little evidence that they perform better than NGOs in this

³ Maruti (1999) gives the example of one canal unit within Andhra Pradesh, India, when maintenance grants, based on irrigated area, were made available to WUAs there was an incentive to report the real irrigated area. The reported area increased from 37,450 hectares in 1996 to 95,900 hectares one year later, reaching 135,600 hectares in 1998. Conrad (2006) gives the example of underreporting of water utilization in Khorezm Province, Uzbekistan. According to him the water utilized is 37% higher than the official statistics and is mainly used for secondary crops which are produced outside the state order system of cotton and wheat.

⁴ When new designs or new *modi operandi* on existing infrastructure are implemented, the existing irrigation staff does not get involved in the planning and might not even receive training or the logistics to operationalize the upgrade to perform according to plan (Van Halsema, 2002). More recently, Facon (without date) focusses on the task of the bureaucracy and individual staff and whether knowledge of tasks are known, he specifically highlights problems encountered by the irrigation bureaucracy in case of transferred inappropriate irrigation technology.

⁵ Although water governance, as highlighted by Water Governance Facility (2014) or Teisman *et al.* (2013), refers to the political, social, economic, and administrative systems, very often in developing countries top-down created participation is forced on the communities (irrigation systems and basins) as the ‘magic bullet’ of governance (Wegerich et al., 2014).

respect. [...] In GROs, problems of accountability often arise due to social and political factors (such as interest-group manipulation), whereas among NGOs, economic factors, and particularly links to donors, are likely to be more influential” (Edwards & Hulme, 1995, p. 10).

Hence, the actions of NGOs and GROs are seen as a reflection of the interests of their own patrons as well as their staff (Liston, 2009; Mosse, 2004). NGOs and even GROs are increasingly perceived “as unaccountable, non-participatory, and even unsustainable or obsolete sinks for donor funds” (Harsh, Mbatia, & Shrum, 2010, p. 253). It has also been recognised that there are “dangers of cooptation, privatization by stealth, exaggeration of political importance and also narrowness of purpose and constituency that can lead to illegitimacy, corruption, lack of accountability and dependence on third groups” (Edwards, 2004, in Trent 2013, p. 11). Due to the lack of transparency in decision-making and poor accountability in both policy and financial issues, NGOs and GROs are no longer regarded as participatory and democratic organisations in the pursuit of developmental goals, accountable to the communities they work with or responding to the needs of the groups they claim to represent (see analyses by Mueller-Hirth, 2012; Najam, 1996).

Within the water sector the involvement of NGOs or GROs (such as Water User Associations (WUAs)) was and currently still is widely promoted (FAO, 1995; Garces-Restrepo, Vermillion, & Muñoz, 2007). Noticeable, the involvement of civil society is uniformly promoted in democratic as well as non-democratic states, with and without respect for the rule of law, with various level of identified corruption and in different cultural settings. Often, even a blue-print approach to participation at different levels of the water hierarchy is promoted. However, on the one hand this blue-print approach is evolving (i.e. focusing first on management, then on governance and management, focusing first on farmers, then on multiple uses and users), and different NGOs promoting competing approaches even within different irrigation systems within the same country (Yakubov, 2012) or basin (Mukhtarov & Gerlak, 2013)⁶.

Although WUAs could be seen as GROs, in most cases WUAs are established not by their members (most often only farmers) but by other NGO or the Government, often users (farmers) do not really have a choice and become members by default. Hence, from the start it is questionable whether WUA leaders are accountable to their members (see Rap & Wester, 2013; Wegerich, 2008). Therefore it could be questioned whether although WUAs are membership organisations, whether they should be classified as GROs⁷. Mukherji et al. (2009, p. 49) highlight “the illusive search for magic formula of successful WUA yields no results and conclude that successful WUAs cannot be socially engineered. [...] there is a conceptual fault with this paradigm and it needs serious re-thinking on the part of the donors and national and international policy makers.”

⁶ Similarly, to a multiple of NGOs promoting different approaches to WUA establishment and design within one country, multiple NGOs promote the same, but different designs, of water technologies (like treadle pumps). Hence, also with technologies, there is no standardization, making the operation and the offered solutions of NGOs within the water sector non-transparent.

⁷ Uphoff (1995) distinguishes NGOs from GROs based on membership criteria.

On the basin level, NGOs not only are part of the group initiating and establishing basin councils, but are also the ones which are identifying members such as other NGOs or GROs like Water User Associations (WUAs). Mukhtarov (2013) notes the ambiguous relationships of international and national NGOs in River Basin Councils, as soon as funding dried up NGOs stopped participating. As Mukhtarov and Gerlak (2013, p. 313) point out, “enrolling stakeholders into a discourse may require material incentives such as loans, grants, and projects. It is not uncommon for material incentives to be widely spread and donor funding to be conditional on establishing RBOs”. As direct non-material incentives, Mukhtarov and Gerlak (2013, p. 313) mention, the “opportunity to acquire international status and heightened professional reputation”.

The above historic overview shows that while ‘lack of rule’, i.e. uncoordinated self-rule in water management systems was perfectly legal at the outset, many states have only recently started to take a claim in water management – even as recent as the late 1990s, in Bolivia where the Bolivian state only really became involved in water management when it needed funding for a large water project, and responded by nationalising then privatising Bolivian water. What was legal in olden days, is now illegal from a (good) governance perspective. However, as ever, ‘power abhors a vacuum’: where governance systems lack enforcement capacity, self-governed initiatives may step in and realise services that the formal systems cannot deliver.

5. Further Thoughts

In general, anarchy within the water sector is endemic. Regarding irrigation, there is the perception that irrigation systems have been constructed technically sound as irrigation technology is based on irrigation schools/hard science. However, this ignores that the construction of the irrigation systems was a learning process of colonizers who did not practice irrigation within their own country. In addition, not only environmental conditions in the colonized states but political and economic demands led to the construction of different types of irrigation systems with various degrees of technical control. Although, from the outset all of the irrigation systems created order, only the irrigation systems with high level technical control (French irrigation school) created order also on the local level, this level stayed untouched by the lower level technical irrigation systems and was left to the users to be taking care of. Even later interventions in the 20th century followed the approach to construct secondary canals only. In this respect, while the higherlevel technical interventions created order within the local level, the lower-level technical interventions created anarchy, giving the freedom to the local level to create their own system of water abstraction and possible water sharing. Since even high-level technical interventions might have been deficient from the start or not viable for the long term, the question arises whether even these schemes enabled the government to enforce order or with the economic downturn created longer term instability and potential disorder.

From a technical perspective, it was partially within the original design of some irrigation schools, by consciously leaving water control to the users, without any State

guidance or interferences. The irrigation sector exemplifies this. Obviously, since the design of irrigation infrastructure were influenced by social, economic and political motivations, the disappearance or evolving from these past design criteria should have led to new designs or even new infrastructure. However, often past designs were rarely changed, but merely rehabilitated and therefore still did not fit to the evolved environment. In case of technological upgrades, often neither the users nor the managing irrigation bureaucracy were involved in the planning of the new designs. Hence, these designs might have increased the disorder even further.

There is clear evidence of 'hidden' land or water that highlights a high level of disorder such as lower-level bureaucracies not communicating to each other or hiding information to higher level bureaucracies. This includes also users participating in the form of Grass-Roots Organisations and civil-society in the form of Non-Governmental Organisations, both of which represent a changing emphasis from management to governance. Noticeably, and in spite of this change of paradigm, the problems of management have not been solved: there is no evidence that successful GROs can be socially engineered or that NGOs represent unbiased views.

A clear example is that, in many cases, top-down induced GROs who have been motivated by budget constraints without taking care of the management problems first and independent of the social, economic, political or cultural context. It thus seems obvious that the focus on governance did not reduce but increased disorder and therefore anarchy. In addition, since the creation of GROs became a business of international and national NGOs who provided their service to governments or donors, it seems understandable that created GROs might represent more the vested interests of some and therefore might have even institutionalised disorder further.

Overall, from an anarchy perspective, looking at the shift of focus from state management to users and civil society governance, it would be implied that anarchy continues taking precedent in spite of the increased diversity of actors and partners. This is not only because no one rules alone (Kooiman, 1993) but also because the shortcomings of the top-down attempts of social engineering, also implies that there is not wanted anarchy (interest-group manipulation) within the promoted anarchy (civil-society governance). This puts into question whether a state, state bureaucracies or even non-state actors imply order. As Wade (1984, p. 298) highlighted "the corruption system is relatively well organized". Since not only the State's official policy is applied but also often there are internal corrupt practices of state bureaucracies as well as non-state actors, this established practice could be classified as a vacuum of control in which anarchy, or lack of order even within the intended one, would prevail.

We can conclude that anarchy and governance are surprisingly alike. Governance as an analytical category developed out of a realisation that the way things get done is not the result of central command-and-control, but emerging from various actors doing what they do in a certain choreography – sometimes with an actor acting as choreographer (INSEAD, FIU, 2002; Page & Kaika, 2003), sometimes without, in a self-contained dance, sometimes in the spotlights, sometimes obscured from the limelight. In that sense

governance cannot be created, only influenced - governance just 'is'. As a play on Clausewitz and Foucault (who saw war as politics by other means or *vice versa*), maybe it is not too much to say that *governance is anarchy by other means?*

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References

- Boelens, R. (1999). *Searching for equity. Conceptions of justice and equity in peasant irrigation*. Utrecht: Jan van Arkel.
- Boelens, R. A. (2009). The politics of disciplining water rights. *Development and Change*, 40(2), 307–331.
- Conrad, C. (2006). *Fernerkundungsbasierte Modellierung und hydrologische Messungen zur Analyse und Bewertung der landwirtschaftlichen Wassernutzung in der Region Khorezm (Uzbekistan)*. Würzburg, Germany: Bayerischen Julius-Maximilians-Universität.
- Cornish, G., Bosworth, B., Perry, C., & Burke, J. (2004). *Water charging in irrigated agriculture: An analysis of international experience* (FAO Water Reports No. 8).
- De Fraiture, C., Gael Ndanga Kouali, G. N., Sally, H., & Kabre, P. (2014). Pirates or pioneers? Unplanned irrigation around small reservoirs in Burkina Faso. *Agricultural Water Management*, 131, 212–220.
- De Man, R. W. (in press). *The Groundwater Institution in India: Contestation and long-term change*. PhD dissertation. Wageningen: Social Sciences Group, Wageningen University.
- Dukhovny, V. A., & De Schutter, J. L. G. (2011). *Water in Central Asia: Past, present and future*. London, UK: CRC Press.
- Edwards, M., & Hulme, D. (1995). NGO performance and accountability: Introduction and overview. In M. Edwards & D. Hulme (Eds.), *Non-governmental organisations—Performance and accountability. Beyond the magic bullet* (pp. 3–16). London, UK: Earthscan.
- Edwards, M. (2004). *Civil Society*. Cambridge: Polity Press.
- Ertsen, M. W. (2006). Colonial irrigation: Myths of emptiness. *Landscape Research*, 31(2), 147–167.
- Ertsen, M. W. (2007). The development of irrigation design schools or how history structures human action. *Irrigation and Drainage*, 56(1), 1–19.
- Facon, T. (n.d.). *A rapid appraisal procedure to assess the performance of irrigation systems: Lessons from a FAO regional irrigation modernization and management training programme in Asia*. Retrieved from http://oibsv2.iwmi.org/guidelines/Asie_SE_Facon.pdf
- FAO. (1995). *Water sector policy review and strategy formulation: A general framework* (Rome: FAO Land and Water Bulletin No. 3).
- Ferguson, J. (1994). The anti-politics machine. I Development'1 and bureaucratic power. *Ecologist* 24(5): 176–181.
- Garces-Restrepo, C., Vermillion, D., & Muñoz, G. (2007). *Irrigation management transfer: Worldwide efforts and results* (Rome: FAO Water Reports No. 32).
- Hardin, G. (1968). The tragedy of the commons. *Science* (New Series), 162(3859), 1243–1248.
- Harsh, M., Mbatia, P., & Shrum, W. (2010). Accountability and inaction: NGOs and resource lodging in development. *Development and Change*, 41(2), 253–278.
- Huppert, W. (2005). Water management in the “moral hazard trap” the example of irrigation. Paper presented at World Water Week 2005 in Stockholm, seminar on *Corruption in the water sector: How to fight it?*

- Huppert, W. (2013). Viewpoint—Rent-seeking in agricultural water management: An intentionally neglected core dimension? *Water Alternatives*, 6(2), 265–275.
- INSEAD, FIU. (2002). *IFRC (Intl Federation of the Red Cross): Choreographer of disaster management. Preparing for tomorrow's disasters*. Retrieved from <http://www.fritzinstitute.org/PDFs/Case-Studies/Hurricane%20Mitch.pdf>
- IWMI. (2011). *Post-project evaluation of Pehur High Level Canal (PHLC) project, Final Report*. Lahore: IWMI in collaboration with Irrigation and Power Department, Government Khyber Pakhtunkhwa.
- James C. Scott. (2010). *The art of not being governed*. New Haven: Yale University Press.
- Kaplan, R. D. (1994). The coming anarchy. *Atlantic Monthly*, 272(2), 44–76.
- Kooiman, J. (1993). *Modern governance*. London, UK: SAGE.
- Lebel, L., Garden, P., & Imamura, M. (2005). The politics of scale, position, and place in the governance of water resources in the Mekong region. *Ecology and Society*, 10(2), 18.
- Liston, V. (2009). Microcosms of democracy? A study of the internal governance of international NGOs in Kenya. *Journal of Civil Society*, 5(1), 61–82. doi:10.1080/17448680902925646
- Maruti, S. (1999). Brief note on participatory irrigation management in the command of Sriramsagar Project (mimeo).
- Merrey, D. J. (1986). The local impact of centralized irrigation control in Pakistan: A socio-centric perspective. In D. J. Merrey & J. M. Wolf (Eds.), *Irrigation management in Pakistan: Four papers* (IIMI Research paper No.4, pp. 12–25). Sri Lanka: International Irrigation Management Institute.
- Molle, F., & Berkoff, J. (2008). Water pricing in irrigation: The Lifetime of an Idea. In F. Molle & J. Berkoff (Eds.), *Irrigation water pricing: The gap between theory and practice* (pp. 1–20). Wallingford, CT: CABI.
- Mosse, D. (1997). The symbolic making of a common property resource: History, ecology and locality in a tank-irrigated landscape in South India. *Development and Change*, 28, 467–504.
- Mosse, D. (2004). Is good policy unimplementable? Reflections on the ethnography of aid policy and practice. *Development and Change*, 35(4), 639–671.
- Mueller-Hirsh, N. (2012). If you don't count, you don't count: Monitoring and evaluation in South African NGOs. *Development and Change*, 43(3), 649–670. doi:10.1111/j.1467-7660.2012.01776.x
- Mukherji, A., Fuleki, B., Shah, T., Suhardiman, D., Giordano, M., & Weligamage, P. (2009). *Irrigation reform in Asia: A review of 108 cases of irrigation management transfer*. Retrieved from http://waterknowledge-hub.iwmi.org/PDF/Irrigation_Reform_in_Asia.pdf
- Mukhtarov, F. (2013). Translating water policy innovations into Kazakhstan: The importance of context. In Vinke de Kruijff et al. (Eds.), *Water governance, policy and knowledge transfer: International studies on contextual water management* (pp. 114–127). London, UK: Earthscan.
- Mukhtarov, F., & Gerlak, A. (2013). The rise of the river basin organizations: Discourse and political economy perspectives. *Global Governance*, 19(2), 307–326.
- Najam, A. (1996). NGO accountability: A conceptual framework. *Development Policy Review*, 14, 339–353.
- O'Neill, G. (2003). Land and water reform in the 1920s: Agrarian revolution or social engineering? In T. Everett-Heath (Ed.), *Central Asia: Aspects of transition* (pp. 57–79). London, UK: Routledge.
- Page, B., & Kaika, M. (2003). The EU water framework directive: Part 2. Policy innovation and the shifting choreography of governance. *European Environment*, 13(6), 328–343. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/eet.332/abstract>
- Plusquellec, H. (2002). *How design, management and policy affect the performance of irrigation projects: Emerging modernization procedures and design standards*. Bangkok, Thailand: FAO. Retrieved from <ftp://ftp.fao.org/docrep/fao/004/ac799e>
- Rap, E., & Wester, P. (2013). The practices and politics of making policy: Irrigation management transfer in Mexico. *Water Alternatives*, 6(3), 506–531.
- Repetto, R. (1986). *Skimming the water: Rent-seeking and the performance of public irrigation systems* (Res. Rep. No. 4). Washington, DC: World Resources Inst.
- Rinaudo, J.-D. (2002). Corruption and allocation of water: The case of public irrigation in Pakistan. *Water Policy*, 4(5), 405–422.

- Rogers, P., & Hall, A. W. (2003). *Effective water governance* (TAC Background Papers No. 7). Global Water Partnership. Sweden: Evander Novum.
- Rosenau, J. (1992). Governance, order and change in world politics. In J. N. Rosenau & E.-O. Czempiel (Eds.), *Governance without government: Order and change in world politics* (pp. 1–29). Cambridge, UK: Cambridge University Press.
- Rosenau, J. N. (1998). Governance and democracy in a globalizing world. In D. Archibugi, D. Held, & M. Köhler (Eds.), *Re-imagining political community: Studies in cosmopolitan democracy* (pp. 28–57). Stanford, CA: Stanford University Press.
- Rosenau, J. N., & Czempiel, E.-O. (Eds.). (1992). *Governance without government: Order and change in world politics*. Cambridge, UK: Cambridge University Press.
- Seckler, D. (1982). *The emerging crisis of irrigation management in the LDCs*, Mimeo. New Delhi: Ford Foundation.
- Shah, T. (2009). *Taming the anarchy: Groundwater governance in South Asia*. Washington, DC: Resources of the Future.
- Shah, T., Giordano, M., & Wang, J. (2004) *Irrigation institutions in a dynamic economy. What is China doing differently from India?* Retrieved from <http://www.iwmi.cgiar.org/iwmi-tata/files/pdf/EPW/EPW01.pdf>
- Teisman, G.R.M. W. van Buuren, J. Edelenbos, J. Warner. Water governance (2013). Facing the limits of managerialism, determinism, water-centricity, and technocratic problem-solving. *International Journal of Water Governance* 1(1): 1–14.
- Thomas, V., & Ahmad, M. (2009). *A historical perspective on the Mirab system: A case study of the Jangharoq Canal, Baghlan* (Case studies series). Kabul: Afghanistan Research and Evaluation Unit.
- Thurman, M. (2001). *Irrigation and poverty in Central Asia: A field assessment*. Washington, DC: World Bank Group.
- Tilly, C. (1985). War-making and state-making as organized crime. In P. Evans, D. Rueschemeyer, & T. Skocpol (Eds.), *Bringing the state back in* (pp. 169–191). Cambridge, UK: Cambridge University Press.
- Trent, J. (2013). The Need for Rethinking the United Nations: Modernizing through civil society. In B. Rein-ald (Ed.), *Handbook of International Organizations*. London, UK: Routledge, pp. 391–402.
- Ul-Haq, A. (1998). Case study of the Punjab irrigation department, consultancy report. *Managing irrigation for environmentally sustainable agriculture in Pakistan* (Report No. C-12). Lahore: Pakistan National Program/International Irrigation Management Institute.
- Uphoff, N. (1995). Why NGOs are not a third sector: A sectorial analysis with some thoughts on accountability, sustainability and evaluation. In M. Edwards & D. Hulme (Eds.), *Non-governmental organisations—Performance and accountability. Beyond the magic bullet* (pp. 17–30). London, UK: Earthscan.
- Van Halsema, G., & Vincent, L. (2006). Of flumes, modules and barrels: Failure of irrigation institutions and technologies to achieve equitable water control in the Indus Basin. In T. Tevdt & E. Jakobsson (Eds.), *A history of water: Vol. 1. Water control and river biographies* (pp. 57–91). London, UK: I.B.Tauris.
- Van Halsema, G. E. (2002). *Trial and re-trial: The evolution of irrigation modernization in NWFP*. Pakistan, Wageningen University.
- von Benda-Beckmann, F., von Benda-Beckmann, K., & Griffiths, A. (Eds.). (2005). *Mobile people, mobile law: Expanding legal relations in a contracting world*. Aldershot, UK: Ashgate.
- Wade, R. (1984). Irrigation reform in condition of populist anarchy: An Indian case. *Journal of Development Economics*, 14, 285–303.
- Warner, J., Butterworth, J., Wegerich, K., Mora Vallejo, A., Martinez, G., Gouet, C., & Visscher, J. T. (2009). *Corruption risks in water licensing with case studies from Chile and Kazakhstan* (Swedish Water House Report 27). Sweden: SIWI.
- Water Governance Facility (WGF) at SIWI 2014, (available at: <http://www.watergovernance.org/whatiswatergovernance>) (accessed May 2014).
- Wegerich, K. Warner, J. and Tortajada, C. (2014). The Dark Side of Governance. An introduction to the Special Issue. *International Journal of Water Governance* (this issue).
- Wegerich, K. (2008). Blueprints for water user associations' accountability versus local reality: Evidence from South Kazakhstan. *Water International*, 33(1), 43–54.

- Wegerich, K. (2010a). The Afghan water law: “A legal solution foreign to reality?” *Water International*, 35(3), 298–312.
- Wegerich, K. (2010b). *Handing over the sunset*. Göttingen: Cuvillier Verlag.
- Wittfogel, K. (1957). *Oriental despotism: A comparative study of total power*. New Haven, CT: Yale University Press.
- Yakubov, M. (2012). A programme theory approach in measuring impacts of irrigation management transfer interventions: The case of Central Asia. *International Journal of Water Resources Development*, 28(3), 507–523.
- Young, O. R. (1989). *International cooperation: Building regimes for natural resources and the environment*. Ithaca, NY: Cornell University Press.

