www.water-alternatives.org Volume 5 | Issue 2
Mehta, L.; Veldwisch, G.J. and Franco, J. 2012.
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Focus on the (re)appropriation of finite water resources.
Water Alternatives 5(2): 193-207

Introduction to the Special Issue: Water Grabbing? Focus on the (Re)appropriation of Finite Water Resources

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ABSTRACT: Recent large-scale land acquisitions for agricultural production (including biofuels), popularly known as 'land grabbing', have attracted headline attention. Water as both a target and driver of this phenomenon has been largely ignored despite the interconnectedness of water and land. This special issue aims to fill this gap and to widen and deepen the lens beyond the confines of the literature's still limited focus on agriculture-driven resource grabbing. The articles in this collection demonstrate that the fluid nature of water and its hydrologic complexity often obscure how water grabbing takes place and what the associated impacts on the environment and diverse social groups are. The fluid properties of water interact with the 'slippery' nature of the grabbing processes: unequal power relations; fuzziness between legality and illegality and formal and informal rights; unclear administrative boundaries and jurisdictions, and fragmented negotiation processes. All these factors combined with the powerful material, discursive and symbolic characteristics of water make 'water grabbing' a site for conflict with potential drastic impacts on the current and future uses and benefits of water, rights as well as changes in tenure relations.

KEYWORDS: Water grabbing, land grabbing, resource conflicts, power relations, water rights, hydrologic complexity, reallocation, neoliberalism

INTRODUCTION

In recent years, much media, academic and policy attention has focused on the rapid growth of large-scale land deals around the world (see GRAIN, 2008; von Braun and Meinzen-Dick, 2009; Cotula et al., 2009; Borras and Franco, 2010; World Bank, 2010; Zoomers, 2010; Deininger, 2011; De Schutter, 2011; Li, 2011; Oxfam, 2011; Cotula, 2012; White et al., 2012). The rush to acquire land as sources of alternative energy, crops, and environmental services has led to the phenomenon popularly known as 'land grabbing' which has made global headlines and contributed to skyrocketing global food prices in 2008.[1] By drawing on notions of 'marginal', 'waste' and 'unproductive' lands, powerful transnational and national actors have moved into large-scale agriculture to take advantage of potential windfall gains in sub-sectors such as biofuels, 'flex crops' (e.g. sugar cane, palm oil, maize, soya – see Borras et

[1] It is important to note that not all observers see what is happening as 'grabbing', but rather as a business transaction or financial investment, involving bona fide negotiations and agreements between private corporate actors and governments and/or local communities (or their representatives). Furthermore, it is considered that large-scale investment is often desperately needed in rural areas to deliver social and environmental benefits and to help reduce rural poverty (cf. World Bank, 2010; Deininger, 2011).

al., 2012) and other major commodities (e.g. rice, wheat and other cash crops). New demands for land have also emerged due to conservation and climate change mitigation measures (hence the notion of 'green grabbing', cf. Fairhead et al., 2012).

Despite headline attention to 'land grabbing' the implications for existing water resources (both surface water and groundwater) have largely remained ignored. Growing evidence suggests that in many cases land grabbing may be motivated by the desire to capture water resources (Smaller and Mann, 2009; Woodhouse and Ganho 2011; Skinner and Cotula, 2011). Although water is a potential constraint on large-scale agricultural projects, particularly in terms of their scale, many land deal contracts do not explicitly mention water requirements (Woodhouse, 2012). Meanwhile, as argued by several authors in this collection, the land subjected to new transactions is rarely 'marginal' but either already used by small and large scale producers, or of prime quality and associated with irrigation facilities, or with the potential for acquiring freshwater from river systems or aquifers (e.g. in arid areas land is plentiful and agricultural expansion will not create conflict until water is used). This raises the crucial question of whether this water is truly 'available' or whether this assumption will lead to unsustainable withdrawals ultimately undermining the quality of the land, or to unequal reallocations away from existing users.

These and many other water aspects have largely been missing dimensions in debates of the global rush for land, and articles in this collection thus seek to contribute to filling this crucial gap. However, the collection does not stop here. Indeed existing media and policy attention still tends to associate land grabbing almost exclusively with large-scale agriculture for food, feed and fuel crops, although research and advocacy are beginning to move beyond this important but still rather limited view. Shifting from natural resource grabbing to water, among others, also helps to widen the lens to move conceptually beyond the tendency to focus exclusively on agriculture-driven resource grabbing. As this special issue shows, in addition to large-scale agriculture for food-feed-fuel (and horticulture), today's water grabbing can be seen in relation to a much wider range of activity that spans the food, water, energy, climate and mineral domains. The cases presented in the collection demonstrate how in many cases water is itself an object of the grabbing, not only for agricultural purposes but also for purposes like mining or hydropower development.[2]

The articles in this collection also demonstrate that the fluid nature of water and its fluctuating variability across time and space, and multiple scales (upstream, downstream, across the watershed or basin) have tremendous impacts on water allocation, reallocation, distribution and quality both now and in the future. Hydrologic complexity, in particular surface water/groundwater interactions and inter-annual variability, often obscures how reallocation takes place and what the associated impacts on the environment and diverse social groups are. The fluid properties of water interact with the 'slippery' nature of the grabbing processes: unequal power relations; fuzziness between legality and illegality and formal and informal rights; unclear administrative boundaries and jurisdictions, and fraught with negotiation processes. All these factors combined with the powerful material, discursive and symbolic characteristics of water make 'water grabbing' a site for conflict with potential drastic impacts on the current and future uses and benefits of water as well as changes in tenure relations.

This collection comprises 14 original articles that provide rich and diverse accounts of the processes, experiences and impacts of water grabbing. Most of the articles are located in sub-Saharan Africa but we also have accounts from South and South-East Asia, North Africa, Latin America and the Middle East, indicating that land and water grabbing are indeed global phenomena. In the rest of this introduction we focus on how we understand resource grabbing, in particular water grabbing, the narratives and drivers promoting the phenomenon, the mechanisms and processes that facilitate it, its impacts on

[2] Hydropower development is of course not new but there are contemporary twists to hydropower development that can be considered water grabbing due to one or more of the following factors: (1) privatisation of rivers; (2) increased involvement of private players and the state bowing down to private interests, whether foreign or domestic; (3) the diversion of existing water from dams to private interests; and the (4) redefinition of policies and laws to justify river/dam privatisation.

local people and ecosystems, and the scope of resistance in reversing some of these trends. We conclude with implications for policy and practice.

GRABBING RESOURCES, CONTROL AND ATTENTION

The term grabbing raises disturbing memories of past enclosures and dispossessions. This is obviously part of the intention in using it – to grab attention and direct it toward a present-day injustice. If not for this word, today's cycle of *land* grabbing might well have remained largely 'invisible'. Yet surprisingly little sustained systematic effort has been given by observers and analysts of the land grabbing trend to actually define what they mean by the term. For us, from the outset it is important to have a working reference point on the meaning of land/water grabbing.

Resource grabbing in general broadly refers to appropriation of natural resources, including land and water, and the control of their associated uses and benefits, with or without the transfer of ownership, usually from poor and marginalised to powerful actors (Fairhead et al., 2012). It is not surprising that most critical analysts working on land grabbing today draw on political economy and Marxist traditions, in particular David Harvey's notion of "accumulation by dispossession" (2003).[3] Building on this, Borras et al. (2012) see *contemporary* land grabbing as marked by three defining features that are worth considering as backdrop to thinking about water grabbing.

First, land grabbing is ultimately 'control grabbing', or capturing the power to control land and other associated resources such as water, and how they are used, in order to corner the benefits, a point that builds on Ribot and Peluso's (2003) theory of access. Control grabbing can manifest in a number of ways, from land grabbing and water grabbing, to green grabbing (see Fairhead et al., 2012). This perspective obviously resonates with Mollinga's (2008) argument for seeing water use as a politically contested process and water control as the "heart of water resource management". As several of the papers in this collection demonstrate, control grabbing is perhaps best seen as a contingent process, marked variously by conflict, negotiation and friction, that can end up ratifying an existing balance of power among state and non-state actors in steps along the way, even if only temporarily. Although poor people often lose out, under certain conditions, their political action can make a difference, however small.

Second, today's land grabbing is also defined by scale – both in terms of the size of the acquisitions and in terms of amount of capital involved. There is a strong tendency in the literature on land grabbing to try to define land grabbing mainly in terms of the physical size of the land acquired alone (see, for example, World Bank, 2010; Oxfam, 2011; Anseeuw et al., 2011). But by incorporating scale of capital into the unit of analysis, land and other key resources like water become central in the operation of capital. A too land-centred view can overlook the underlying logic and operation of capital and also miss the diversity of biophysical requirements in capital accumulation dynamics: 300 ha of high-value vineyard, 500 ha of rare metal mining concession, 100,000 ha of land for industrial tree plantation, and 500,000 ha of grazing land for livestock may have comparable scale in capital (and for that matter scale of labour involved) despite the huge discrepancy in physical land requirement between them.

Third, and finally, what is also distinct in the current land grabbing, according to Borras et al. (2012), is their occurrence primarily because, and within, the dynamics of capital accumulation strategies that are largely in response to the convergence of multiple crises: food, energy/fuel, climate change, financial crisis (where finance capital started to look for new and safer investment opportunities) (McMichael, 2012), as well as the emerging needs for resources by newer hubs of global capital, especially BRICS and some powerful middle income countries (MICs). The key contexts for land grabbing therefore include: food security concerns, energy/fuel security interests, climate change mitigation strategies, demands for natural resources by new centres of capital, as well as demands for flex crops:

[3] The term land grabbing goes back to Karl Marx who while remarking on the English enclosures said "Land grabbing on a great scale […] is the first step in creating a field for the establishment of agriculture on a great scale" (quoted in White et al., 2012).

crops that have multiple uses (food, feed, fuel, industrial material) that can be easily and flexibly inter-changed: soya (feed, food, biodiesel), sugar cane (food, ethanol), oil palm (food, biodiesel, commercial/industrial uses), corn (food, feed, ethanol). Stepping back, the key contexts today for land grabbing appear to be the same for water grabbing. But applying a water lens arguably helps to both deepen and broaden our understanding of how each of these operate, and bring greater visibility to the truly far-reaching water impacts of both land *and* water grabbing.

Due to a growing body of empirical research on the global land grabbing, a number of inconvenient facts are forcing many to rethink some of their initial perceptions and assumptions, which in turn have bearing on how we think of some (types of) water grabbing. Some of these have to do with who is doing the grabbing and why. For example, what was initially seen as a phenomenon driven in the global South by only certain States in the North, is now increasingly recognised as a much larger and wider phenomenon involving capital from the North, South, East and West, from wealthy and middle-income states, and involving many intra-regional transactions and acquisitions by national elites as well (Cotula, 2012; Visser et al., 2012; Kenney-Lazar, 2012). The heavy involvement of Thai government, business and financial interests in hydropower development in Lao PDR, for example, clearly illustrates this point (see Matthews, this issue). Moreover, as suggested earlier, the trend is not only about food production (and hence food security), but also (and possibly even more) about biofuel production, raw material for industrial products such as rubber, and flex crops.

Other newer research findings have to do with the nature of the conditions under which land grabbing occurs. In fact, there is quite a diversity of conditions involving varying degrees of physical violence, clientelist coercion, transparency, or formal legality. The kinds of resource rights (as well as use benefits) that are involved also vary, ranging from statutory land tenure rights, to customary land tenure rights, which may or may not be recognised by central state law, and are often very context-specific. Meanwhile, in many (most?) cases so far, research is showing that the supposed benefits of big land deals are not materialising or not materialising to the extent originally claimed, leaving many to wonder if they ever will. The UN Committee on Food Security (CFS) High Level Panel of Experts on Food and Nutrition released a report on global land grabbing in July 2011 saying that there is no evidence to validate claims about win-win scenarios in large-scale land investments that benefit the poor (HLPE, 2011).

And finally, alongside these other emerging issues, now there is growing concern about the water dimensions of land grabbing, which raises the question: why is there a growing attention on water amongst observers of land grabbing? As Woodhouse (2012) explains elsewhere, it is difficult (if not impossible) to grab water without grabbing land. Many authors in this collection confirm that land and water are deeply entangled in land grabbing in practice. There is a perceived general pattern that investors do not seek lands that do not have water for production in the first place. So, land in itself is meaningless for their purpose without water. In some cases where a so-called marginal block of land is given to a company, the water dimension becomes apparent immediately. This is the case of Procana sugar cane plantation in Mozambique which is a 30,000 ha plot adjacent to Massingir dam to ensure water supply for the plantation (van der Zaag et al., 2010; Borras et al., 2011), for example. It is also clearly the case in the Tana delta case examined by Duvail et al. (this issue). In the Tana delta case the Kenyan government has targeted the Tana river basin for development, designating the floodplain area as 'unused' and the adjacent terraces as 'empty dryland' with irrigation potential. In other cases, the water implications of land grabbing have not been understood adequately, especially when in many cases water is made out to be 'abundant' and 'unused', particularly in the African context. Thus several papers in this issue focus on the water requirements of new crops and the implications of additional water consumption on local-level experiences of water availability and scarcity.

DEFINING WATER GRABBING

Our starting point when we began work on this special issue was to define water grabbing as a situation where powerful actors are able to take control of, or reallocate to their own benefits, water resources already used by local communities or feeding aquatic ecosystems on which their livelihoods are based. This lens demands a focus on how material, discursive, administrative and political power is mobilised to enable such water reallocation and changes to tenure relations as well as the impacts of the latter on local livelihoods, rights, gender, class and other social relations.

This collection thus takes a broad view of water grabbing. Some authors use it in relation to land grabbing as normally understood around large-scale (irrigated) agricultural projects (in this issue for instance Williams et al., Bues et al., Duvail et al.). Others see water itself as the object of the grabbing and demonstrate how water rights (both formal and informal) as well as benefits of use are reallocated to powerful players in mining, energy and hydropower projects in Peru, Turkey, India and the Mekong region. Islar (this issue), when focusing on hydropower development in Turkey, describes how exclusive access to hundreds of rivers and streams is being transferred to private companies for 49 years. Powerful actors use legal means as well as technical definitions to divert water and profit away from local communities living along rivers despite their resistance. In such cases, water grabbing actually involves both the physical capturing of the water itself in the hydropower plant transmission channels and the legal capturing of local people's previously established (customary) rights to use the river water. Thus, the term grabbing highlights flawed legal procedures and political processes surrounding the capturing of water resources, whether directly connected to land deals or not, while others use it to stress the perceived illegitimate purposes of this capture, and still others to emphasise both aspects. All cases are characterised by unequal relations of power and complexities around process and mechanisms that facilitate grabbing in the first place.

Though the dynamics around water grabbing have strong parallels with other resources grabbing like land grabbing and green grabbing, we argue in this collection that water resources also have their particular characteristics that have a marked influence on these dynamics. Water is fluid in nature: it flows, does not stay in one place, and at the same time water is in most places a renewable resource. This means that the availability of water fluctuates in space and time and these are relevant when assessing water allocation and actual water distribution. The case by Hertzog et al. (this issue) of the Office du Niger clearly demonstrates how important it is to thoroughly assess water requirements in space and time, rather than just looking at water volumes. Hence, even so-called non-consumptive uses such as hydropower can have important implications by changing the timing of water availability. The fluidity of water also implies downstream effects on people and uses and the need to look at wider impacts across a range of scales (i.e. within a watershed or basin). Ambiguity in jurisdictional area with administrative boundaries can make problems more severe, as for instance detailed by Arduino et al. (this issue), where a disputable land deal was processed in one district, while the downstream effects were only experienced in an adjacent district that was not in any way involved in the initial process.

Thus the details of what is being grabbed, and relatedly, how, appear to be somewhat complicated with regard to water. This may be partly because of its acute importance for sustaining human life, partly because of the material characteristics of water itself and also hydrological complexity, and partly because of the very context-specific and multi-layered socio-political conditions by which water rights are determined and become 'visible', and by which the benefits of water access and use are controlled. Thus, due to the fluid nature of water, far-reaching impacts such as scarcity and pollution can extend across entire river basins. Kay and Franco (2012) argue that water and land grabbing is about investment in 'virtual water' (Allan, 2011) for agribusiness development: given the water resources that are required to produce agricultural products, global agricultural trade can also be seen as a massive transfer of water, in the form of commodities. Due to these distinct characteristics of water grabbing, our collection stresses the need to go beyond viewing merely the water implications of land grabbing.

This collection deploys a range of conceptual tools to understanding water grabbing. Sosa and Zwarteveen (this issue) show how water grabbing involves the enclosure of commons by multinational companies and government agencies, dispossessing peasants and indigenous people and altering the environment. Their understanding of water grabbing rests on the concept of waterscapes which allows recognising how the natural and the social always co-constitute each other, and how flows of water, power and capital produce uneven socio-ecological arrangements over space and time (see also Budds and Hinojosa, 2012). Waterscapes are also dramatically altered through processes of accumulation and by what has been termed the 'neo-liberal turn' in environmental governance which has resulted in the privatisation and commodification of water as the commons (see Bakker, 2002; Robert, 1993; Swyngedouw, 2006; Shiva, 2008). As several contributors to this issue note, such privatisation and commodification processes can escalate local water conflicts, as in the case of a public-private partnership in Morocco (see Houdret, this issue) or legitimise the dispossession of vulnerable groups and paramilitary violence in marginalised parts of the global South, as in the case of the Cauca region in Colombia (see Vélez Torres, this issue). Seen in this light, water grabbing is a particular form of accumulation by dispossession under neo-liberalisation leading to the commodification and privatisation of resources, the eviction of certain groups and the conversion of various forms of property rights into exclusive private property rights (cf. Harvey, 2003, 2005). Finally, water grabbing is also linked with the financialisation of natural resources. This ranges from the financialisation of water services and infrastructure to, what is somewhat unchartered territory, the financialisation of the resource itself whereby water is transformed as a commodity tradable on large-scale global markets through water trading schemes (Tricarico and Amicucci, 2011).

A sceptical reader may well argue that unequal control over water is as old as the hills, just as land control is (cf. Peluso and Lund, 2011). Water is a contested resource and access to water reflects power asymmetries, socioeconomic inequalities, and other distribution factors, such as the ownership of land. Since time immemorial, water as a finite but multifaceted resource has been subjected to contests rooted in relations of power both at the discursive and material level (cf. Mosse, 2003; Mehta, 2005; Mollinga, 2008). Thus, at one level, water grabbing is not very different from any other processes of contestation over water as a limited resource between actors with unequal powers.

However, while control over water resources has traditionally been associated with state control and domination by national rulers (cf. Wittfogel, 1957; Worster, 1983), the term water grabbing draws attention to the involvement of new capitalist players and actors in water resources management and the rise of new political and economic power relations through diverse trajectories of neo-liberalism. In the water sector, much of this of course began 20 years ago in 1992 at the Dublin International Conference on water and the environment where the still controversial declaration of water as an economic good led to greater adherence to free-market capitalism and the commodification of water (see Allouche and Finger, 2002; Nicol et al., 2012). The economic valuation of the resource rapidly became part of wider debates on environmental resources and 'water scarcity' more generally (Mehta, 2010) but these processes largely concerned water service delivery, ostensibly as a means to increase efficiency and enhance access (ibid). Now, 20 years on, we are witnessing the privatisation not just of the service or the accompanying infrastructure but of the resource itself. Thus, several contributions in this issue discuss how rivers are being captured and privatised for the energy they can generate, how water is being reallocated to corporate players, and how laws and policy processes are being redefined to legitimise these processes (see Wagle et al., this issue). We now turn to look in depth at the key processes that justify and facilitate water grabbing.

DRIVERS AND NARRATIVES JUSTIFYING WATER GRABBING

There are many processes driving the continuing global rush for water. The ones that come through most clearly in this collection are as follows. First, driven by predictions of 'peak oil' and growing concerns about rising GHG emissions and climate change, new energy security concerns and interest in

alternative energy sources that could be portrayed as renewable, are in turn driving both expanding biofuel production *and* hydropower development (see articles in this issue by Williams et al., Bues et al., Duvail et al., Matthews, and Islar). A related trend at the global level is the so-called 'securitisation' of the environment accompanied by talk of future threats to human security and the so-called food-energy and water nexus that is driving new hydropower and energy developments. Second, the promotion of especially private (foreign and domestic) investments by host national governments also appears as an important driver of water grabbing (in this issue: Bossio et al., Vélez Torres, Sosa and Zwarteveen, Arduino et al., Woodhouse, Hertzog et al., Houdret, Wagle et al., Matthews, Islar, Duvail et al., Bues et al., and Williams et al.). In our collection we thus have articles that discuss the surge in Foreign Direct Investment (FDI) in agriculture in part driven by the 2008 food crisis and the need to secure lands to grow grain as well as the desire to increase agricultural productivity, new public-private partnerships in irrigation, local-global capital transactions around mining, the promotion of special economic zones as well as corporate takeovers of hydropower development. Finally, a crucial aspect promoting water grabbing that is not linked to land grabbing is the wider sectoral reform of the water and energy sectors encouraging privatisation and deregulation, often in the name of 'efficiency' promoted by multilateral and regional banks.

Power produces knowledge à la Foucault and there is no dearth of dominant narratives that justify processes of water grabbing. Gasteyer et al. (this issue) draw on Jasanoff and Kim's (2009) notion of national socio-technical imaginaries which serve as collectively imagined forms of life and order reflected in the design of scientific and/or technological projects. Their analysis of water grabbing in Palestine in a historical perspective shows how ideas of modernisation formed the nucleus of an imaginary of improved humanity through land and water transformation, accompanied by settlement and colonisation. While the Zionist and Israeli grabbing of Palestinian land and water resources has largely been motivated by political, ideological and religious rather than economic reasons, the case demonstrates how contemporary grabbing can be seen in relation to other historical processes. Thus, according to Gasteyer et al., water grabbing involves a similar imaginary of energy, food, and water scarcity solved through large-scale land investment, resulting in increasingly productive resource use. The article demonstrates how the early Zionist movement (including the Christian explorers who toured Palestine in the 1800s) built a narrative of settlement potential and untapped abundance (i.e. the 'land of milk and honey'), very similar to the recurring narratives of 'unused' and 'marginal' land as *terra nullius* that accompany modern day land/water grabbing.

The global discussion and debate over contemporary land and water grabs have been revolving mainly around two related yet distinct narratives. The marginal land narrative has been deployed to justify large-scale commercial biofuel crop production in particular; by targeting and using 'marginal' or 'degraded' land in particular, biofuels (it is assumed) will not compete with food crop production for prime land (defined as prime in part because of proximity to/availability of water), and therefore not undermine food security, thereby making biofuels seem more benign. The possibility of biofuels competing with food production for land, especially in rural areas in the global South where hunger and malnutrition are most concentrated, was seen as a key argument against biofuel promotional policies in the European Union, for example. The unused or underutilised land narrative, by contrast, has been used implicitly to justify the promotion of a model of agricultural production characterised by large-scale, monocropping, high-tech (inputs, mechanisation etc); anything less 'productive' in terms of yields is assumed to be 'unused' or 'underutilised'. Both of these narratives contain optimistic assumptions about water use that, under closer scrutiny, evaporate. For instance, Williams et al. (this issue) observe how "companies initially leased large-scale lands to grow a crop, *Jatropha*, which is less water demanding but have ended up diversifying into other crops that require full or supplemental irrigation to give optimal yields". An interesting parallel is raised in the case of hydropower development in Turkey (Islar, this issue) between narratives justifying water grabbing for hydropower and narratives justifying land grabbing for biofuels, in that "[n]arratives from governmental and private sector officials

consider water as wasted if it flows without being utilized as a resource for irrigation, energy or other purposes".

An important point here too is how these various sub-narratives have eventually been brought together to form an even grander narrative about vast quantities of land – and it is assumed water – for future exploitation on a large scale. The World Bank (2010) says that between 445 million to 1.7 billion hectares of land globally have been identified as 'suitable' for agricultural investments. However, such figures and portrayals are based on narrow parameters and yardsticks. In the satellite imagery and GIS systems that provide legitimacy for notions of 'marginal', 'sparsely populated' and 'unproductive' lands, social and economic relations and livelihoods remain invisible. Census data often do not capture non-monetised goods and services that sustain millions.

Such narratives are particularly strong with respect to sub-Saharan Africa, the focus of most of the articles in this special issue. A dominant narrative is one of underutilised land and water resources that require investment to 'unlock' their potential and drive the engine of development (World Bank, 2008; 2010). Africa is considered to be a 'sleeping giant' with an abundance of water and land, ready to be woken up by commercial agriculture (World Bank, 2009). Africa is also seen to face 'economic water scarcity' (Molden et al., 2007), a situation where it lacks the economic and financial capacity to develop its 'abundant' resources.

However, as several of our contributors demonstrate, it is debatable if this land is indeed unused or even underutilised. The narratives of 'unexploited resources' provide justification for governments to displace existing users of resources and the ways in which smallholder farmers use their water remain unrecognised (cf. Woodhouse, this issue; van Koppen et al., 2005). The 'economic scarcity' arguments say nothing about the socio-political and constructed nature of scarcity (cf. Mehta, 2010) and how FDI investments can create new scarcities. They could also justify the involvement of the private sector in irrigation due to ostensible shortage of public funds as well as improved cost efficiency and water productivity as demonstrated by Houdret's analysis of a public-private-partnership in Morocco (this issue). In sum, drivers supported by powerful narratives have propelled the global rush for water, operating through specific processes and mechanisms to which we now turn.

MECHANISMS AND PROCESSES

Water grabbing is a complex process. In most of our cases, financiers, bureaucrats, water, energy and agricultural specialists, global, regional and national banks as well as business elites at the local, national and global levels are rapidly transforming and transnationalising the waterscapes upon which local lives and livelihoods depend. Past beneficiaries of irrigation become today's dispossessed; those who had enjoyed use rights over river and water resources for decades or centuries suddenly emerge as illegal users; laws that are supposed to protect local users are either weak and ineffective or rewritten. Some of this takes place with the acquiescence or 'buy in' of local communities but mostly these processes are met with overt or covert resistance.

We thus see a variety of mechanisms and processes through which water is being grabbed, including conditions that facilitate water grabbing. In almost all cases the grabbing process is in one way or another made possible by the state in which grabbing is taking place. In India, sectoral reforms are used as a mechanism to legalise and legitimise processes of water grabbing. The state also takes advantage of the obscurity in the policy regime and when challenged on legal grounds, reform instruments are blatantly redefined (Wagle et al., this issue). In many cases, state organisations creatively bend or re-interpret existing rules and regulation that should actually prevent grabbing to take place. An example is the case of Ethiopia where the Water Resources Management Proclamation is supposed to protect local users' legitimate interests (cf. Bossio et al., this issue). In yet other cases, state organisations fail to enforce the law even when attempting to do so. Formal requirements for large-scale land and water deals, such as Environmental Impact Assessments and/or community consultations are often ignored

(in this issue: Arduino et al., and Matthews), and when they are implemented they can be used for window-dressing rather than that they help to prevent resource grabs (Duvail et al., this issue).

Water grabbing is also possible due to new coalitions of interests. For a variety of reasons, many governments and bureaucrats within government agencies have interests in large investments. In some cases this leads to active support, invitations or collaboration in which public institutions or coalitions between politicians and/or high-level bureaucrats serve private interests (cf. Wagle et al., this issue; Vélez Torres, this issue). In the mining case in Peru described by Sosa and Zwarteveen (this issue) this developed to such an extent that regional water authorities in practice left all responsibility for water management to a mining company which became the *de facto* water management authority.

Grabbers often make use of the legally complex situations around water tenure. New commercial users usually coexist with complex non-registered users who are invisible. This legal pluralism can be both enabling and disabling but largely it is difficult for local users to defend their claims. Companies often strengthen their informal social and political networks to influence governance processes. Hertzog et al. (this issue) refer to the latter as "a fragmented negotiation process, whereby different investors have used different networks in the administrative and political apparatus in order to secure both suitable land and water arrangements".

In a few cases, authors describe that water rights in practice come automatically with land rights and are not subject to a separate process. Williams et al. (this issue) argue that in Ghana the separation of these land and water rights created the space for water grabbing; pre-existing customary water rights were abolished and instead ownership, management and control of water were placed under authority of the state. In most cases included in this special issue (large-scale) water use officially depends on government-issued licences that come with a fee-paying requirement. Hertzog et al. (this issue) describe how the Malian government increased the water fee for a hectare of rice in the dry season more than tenfold to discourage smallholder farmers to continue this in order to make water available for large-scale agricultural investors.

Local-level complexities also determine outcome. With limited bargaining power and vulnerable livelihoods, many local water users accept the low financial compensation that is offered which is often higher than normal earnings. In Peru, financial compensation was offered to existing water rights-holders, even though the Peruvian Water Law (2009) forbids water trading. Local leaders can also be subject to corruption which allows companies and powerful players to acquire water rights from local communities. Though difficult to detect by definition, perhaps especially so at higher levels of the political system, corruption appears to be a key factor in allowing new dams to be constructed in Lao PDR as well, even though they largely serve the interests of the Thai energy sector. Matthews (this issue) points out several hydropower projects that went ahead despite the fact that the legally required EIAs had not (yet) been done or submitted, giving off 'a bad smell' (apparently a euphemism for corruption) according to one high-level official interviewed.

We also consider cases in which local communities suffer from pollution by upstream powerful actors as cases of water grabbing. Water grabbing does not necessarily involve the diversion of (large volumes of) water. The process through which water grabbing takes place in these cases is an externalisation of problems and costs which are transferred from the causers to these communities (Arduino et al., this issue; Sosa and Zwarteveen, this issue).

Finally, certain conditions can undermine or impede the process of water grabbing. These include an informed public debate taking place prior to project approval and implementation, protest and resistance, wider political change, litigation and efforts to demand and increase accountability. All of these have the potential to change the outcome around the grabbing process. Still, as will be evident shortly, in the cases that we present in this issue most of them have met with limited success.

IMPACTS AND RESPONSES

In all the cases presented in this issue, water grabbing has led to a significant re-appropriation of water resources and water tenure relations with implications for basic human rights. Various papers describe how downstream communities lose their secure access to water for irrigation or other agricultural water use. In India, planned canals have been abandoned and the irrigation potential has been drastically reduced because most of the water has been diverted to petro-chemical industries and thermal plants owned by major corporate houses (Wagle et al., this issue). Houdret (this issue) describes how deep drilling by agricultural investors may intensify water conflicts and increase the marginalisation of small farmers as shallower wells used by local communities may dry up. Furthermore, farmers were not compensated adequately for the land acquired for the new water pipeline. Bues (this issue) describes how water rights have changed both directly and indirectly on foreign horticulture farms in Ethiopia. Direct changes include new associations reshaping formal agreements and indirect changes to water access and withdrawal rights which are directly tied to land rights. The re-appropriation of resources described in this and most of the other cases in this issue is only possible due to sharp power inequalities between resource poor smallholders and government-based investors and companies.

Access to water is not simply a case of total volumes, but concerns distribution in time and space. Woodhouse cautions that "the nature of water constraints is intermittent and highly specific to key moments in crop development" similar to Bossio et al., who stress that "variability of water supply in space and time" need to be considered in the context of water planning for FDI projects. Thus there is need to assess available and required water for specific periods, i.e. those of water scarcity. Hertzog et al., exemplify this by stressing the importance of distinguishing between the dry and the flood season, as the Niger river has very different discharges in these two periods. Water demand has always focused on the water-abundant flood period, but now tends to shift to the water-short dry season, depending on the actual crop choice for different investment projects yet to be determined.

In Colombia, already marginalised Afro-descendant communities lost their access to the Cauca river (a powerful symbol of life) which provided transportation, riverine gold-mining, fishing, and recreation. This also radically affected their traditional culture, which depends on the river (Vélez Torres, this issue). For them, water grabbing has been a long process of systematic dispossession from their land and water resources as well as territory marked by violence and paramilitary incursions. Our only historical case of water grabbing, that of Palestine, also highlights significant injustices in terms of water rights (Gasteyer et al., this issue). Since the occupation of Palestine and the growth of Israeli settlements, there are strict military orders restricting water withdrawals and access to the Jordan river and the Dead sea by Palestinians with Palestinians having access to only about 10% of the entire annual recharge capacity of the West Bank water system.

In many cases, water grabbing concerns the diversion and consumption of (large amounts of) water which then is no longer available for downstream use. Bossio et al. (this issue) provide crude estimates of consumptive water use and indicate a wide range of possible water consumption scenarios regarding a large number of FDI schemes in Ethiopia. They demonstrate that the increased water consumption will depend on crop-choice and water use practices, but that the minimum additional water consumption will be greater than current total annual irrigation water while the maximum will be almost five times the current use. Water grabbing does not necessarily involve the consumption of (large quantities of) water; also water quality can be negatively affected in such a way that downstream water is no longer suitable for consumption and/or irrigation. Arduino et al. (this issue) describe a case in which upstream land use in a case considered to be land grabbing, pollutes drinking water sources of downstream communities. Sosa and Zwarteveen (this issue) describe how mines in Peru pollute water resources with acids, heavy metals and tailings (leftover from ore-extraction) to such an extent that it can no longer be used for smallholder irrigation downstream.

Local communities have reacted in different ways to these impacts. In five out of the 14 papers in this special issue the authors describe resistance by local communities, often supported by NGOs, media and sometime government agencies and politicians. Mostly these alliances protest on basis of violations of existing laws, rules and/or regulations. Arduino et al. (this issue) describe a case in which an NGO (ACRA) supported a local community's Water Users Association (WUA) in claiming their rights, which led to a negotiation process with the basin authority as a mediator. Pressure was increased by drawing the attention of national politicians. They consider the negotiation process successful, but also note that a written agreement is still lacking. In the process the WUA was strengthened and "acquired knowledge, authority and a deeper sense of its water rights and the need to claim them". In the case of mining in Peru, the local communities are divided in different factions and government agencies take conflicting stances regarding the conflict. National government had to speak out on the case before local community leaders approached the regional water authorities to pressure them to follow up on national rules. Hertzog et al. (this issue) describe how in 2011 the Malian government withdrew 280,000 ha out of the 870,000 ha allocated to investors following pressures by media and politicians. The reason for withdrawing was stated as 'non-compliance with procedures', but large foreign investors' projects that had not followed the procedures remained untouched.

In the cases described by Islar, Wagle et al., and Vélez Torres in this issue, alliances of farmers, NGOs and local communities vigorously disputed the policies of their states that legalised or facilitated water grabbing. Water grabbing via river privatisation has mobilised broad-based, multi-class opposition in Turkey, despite the socially differentiated impacts of hydropower development. The Turkish state's more recent responses to such mobilisation with draconian measures reveal a shift toward a more 'active exclusionist' approach according to Islar. Wagle et al., describe a long process of protest, involving pleas to the Chief Minister, negotiations with the Water Resources Department (WDR), public interest petitions, court cases, demonstrations and several 'sit-ins'. However, due to the blatant power play at the state level, water grabbing which secures water to facilitate domestic and international private investment is allowed to continue. Vélez Torres describes how Afro-descendant communities and organisations confront the responsible companies, but primarily aim their protests at the state and its support of projects and laws that threaten their existence. Despite these protests, the local population was forced to move out of the project areas. While these do seem like bleak results, these movements are providing us with alternative vocabularies and approaches to counter the logic of water grabbing processes.

CONCLUSIONS

This special issue focuses on both highlighting the missing water dimensions in debates on the global rush for land as well as demonstrating how in many cases water itself is an object of grabbing. In doing so, it has sought to widen the lens of resource grabbing as merely an agriculture-driven process. This collection also demonstrates that due to the fluid nature of water, its demand and availability fluctuate in time and space making it difficult to characterise the precise nature of grabbing, appropriation and reallocation and their varied impacts across multiple scales and time frames. In some cases, the actual resource or benefit being grabbed is in itself intangible because water may not always be the resource of interest; it often serves a particular purpose of production of value for which often also other resources are needed: land particularly, but also the re-ordering of labour and jobs, value chains and so on. These combine with the fuzzy, obscure and fragmented processes around negotiation, interpretation and enforcement of policies and laws to make water grabbing a highly slippery process indeed.

While there is growing recognition that grabbing often involves the disregard for or outright dismantling of customary and/or even statutory land rights, the violation of basic human rights and the generation of harmful social and environmental effects, mainstream policy responses have tended to focus on minimising these 'risks' through the creation of mechanisms to apply international standards

via a code of conduct (cf. von Braun and Meinzen-Dick, 2009), or principles of responsible agricultural investments (see, e.g. World Bank et al., 2010), or initiatives for improved transparency and information disclosure (see, e.g. Global Witness et al., 2012). Such approaches proceed in part on optimistic assumptions about the benefits to be gained from the associated large-scale investments. However, there is as yet little evidence regarding actual social or environmental benefits or that such initiatives would work in practice. It is highly questionable whether such codes, principles or initiatives can really work in such a charged context where the level-playing field is so unequal. Indeed, water and other forms of resource grabbing bring wider development and economic growth paradigms into question, highlighting the need to limit unfettered resource extraction, flows of capital as well as the gross injustices borne by those who bear the brunt of the re-appropriation of landscapes and waterscapes.

Even though many of the dynamic protests around the world have not succeeded in reversing the trends of neo-liberal environmental governance and capitalist accumulation in the cases described above, alternatives at the margins are being proposed. In Colombia, local inhabitants, social organisations, and several scholars are calling for the need to reinforce alternative local – global linkages in order to protect their territories and enable another 'Paz-ific', a play on the sound of and the adjective peaceful in Spanish (Vélez Torres, this issue). In India, many local communities constantly resist forced displacement due to special economic zones and hydropower projects, contributing to time and cost overruns, stay orders from the courts and, in some cases, termination of projects. In Morocco, Houdret (this issue) describes how the Arab spring has allowed previously marginalised farmers new opportunities to regain control over water, their livelihoods and potentially some (political) power. Thus, movements protesting grabbing processes are providing us with new tools to counter some of the mechanisms of grabbing processes. Engaged scholars are also helping to create new vocabularies and imaginaries that can challenge dominant narratives that justify such appropriations. Indeed, the recent flurry of scholarship on grabbing processes is revealing that even so-called marginal lands are highly productive for those who live off them and that narratives of abundant and underutilised waters need to be reconsidered.

Writing in the turbulent 1940s Karl Polanyi (1944) cautioned against treating land and labour as commodities dis-embedded from social and cultural processes – to which we could add water. He suggested these are 'fictitious commodities' that cannot be governed solely by the logic of the market. Land, labour and water are crucial for human existence, and therefore, arguably, market mechanisms should not be the sole regulators of land, labour and water use. When that does happen, the endurance of human society and nature may be undermined, as Polanyi suggested. Almost 70 years on, in the midst of a financial crisis and neo-liberal market enthusiasm, his words seem to be as relevant as ever.

ACKNOWLEDGEMENTS

This special issue would not have been possible without financial support from the DFID funded Future Agricultures Consortium and the hard work and commitment of many people. The guest editors would like to thank everybody who responded to our original call for papers whose paper did not make it here and to all the anonymous referees who provided valuable comments and feedback. A big thanks to all the contributing authors for their patience and hard work and to Sushilla Rajamanie for her efficient help throughout. We are also very grateful to the managing editors, François Molle, Ruth Meinzen-Dick and Peter Mollinga for their constant support, commitment and encouragement. We dedicate this collection to all those affected by today's global water grab and hope that it will contribute to raising awareness and deepening understanding about water grabbing, its causes and implications.

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