Sustainability Standards and the Water Question

Jeroen Vos and Rutgerd Boelens

ABSTRACT

Increased global trade in agricultural commodities has boosted fresh water consumption. This export of ‘virtual water’, embedded in products sold abroad, has increasingly affected local communities and ecosystems, especially in arid regions. Recent initiatives to certify agricultural production are showing a rapidly growing interest in considering water issues within schemes of quality assurance, sustainable production and fair trade. This article scrutinizes current water sustainability certification schemes, and how they affect local water user communities. The authors use three notions of governmentality to examine water sustainability standards and how they aim ‘to conduct the conduct’ of water users: (1) standards as ‘production of truth’ and ‘mentalities’ that constitute systems of collective rationalities, values, norms and knowledge; (2) standards as networks that prescribe roles and establish power relations between companies and producers; and (3) standards as ‘techniques of visibilization’ that control practices and discipline producers. Private standards in general reinforce the political and market power of private sector agro-food chains in local water management, to the detriment of local water user communities and national governments. However, sustainability certification could also potentially enable local, regional, national and international organizations of user communities to stake claims and negotiate to protect their water sources and livelihoods.

INTRODUCTION

The consumption of fresh water has soared over recent years as a result of increased global trade in agricultural commodities. In many regions, increasing agro-export water consumption competes fiercely with local water user communities and negatively affects ecosystems, especially in arid regions (Roth and Warner, 2008; Sojamo and Archer, 2012; Van der Ploeg, 2008). More and more private initiatives for agricultural production certification consider water issues in their schemes of quality assurance, sustainable development.
production and fair trade. This article scrutinizes the way in which these water certification standards are established and their potential effects on smallholder water users. It also examines whether certification could potentially help local communities defend their water rights against dispossession by large export-oriented companies.

Little research has been done on the direct and indirect consequences of sustainability certification on water resource use and conservation. In this article we scrutinize the water sustainability criteria of several important certification schemes, such as the widely used GlobalGAP, and standards that are still under construction, such as the schemes established through roundtables on cotton, soybeans, sugarcane and biofuels. These standards were selected because they have incorporated control points regarding water use and quality and have potential for wide application because the companies involved are major players in the market (cf. Campbell, 2005). The article aims to identify the effects of sustainable water certification and analyse possibilities for local user communities to use certification schemes to protect their water rights. Sustainability and social certification schemes face difficulties in dealing with water issues in a balanced manner, especially at scales beyond the farm level and in the contexts of catchments and smallholder communities. Water management is typically complex and locally specific, thus requiring specific local criteria for equitable water allocation, sustainable exploitation, resource conservation and preservation of ecosystem functions.

This study is based on extensive literature review and analysis of online documents, in combination with interviews conducted with stakeholders in Europe and South America throughout 2011 and from February to May 2012. Interviews were conducted with large producers, certifiers, policy makers, government water officials and representatives of small producers’ associations.

The next section lays the groundwork regarding three main themes of our article: virtual water embedded in international agricultural produce trade; water stewardship certification as a new form of Corporate Social Responsibility (CSR); and flaws in current certification schemes. We then present an analytical framework using three notions of governmentality to examine how water standards aim to ‘conduct the conduct’ (Foucault, 1991) of local water users; this is followed by an analysis of water stewardship schemes according to the three governmentality concepts. The article ends with a discussion and conclusions.

1. Water is different from other natural resources in sustainability standards because water is essential for life and has no substitute; the livelihoods of many smallholder producers depend directly on irrigated agriculture. Also, water has many locally defined values that go beyond the supposedly universal economic value of water. In relation to the sustainability certification debate, water is different from carbon dioxide emission, because unlike the latter, water consumption and contamination have localized effects that cannot be mitigated elsewhere (Allan, 2003; Bakker, 2010; Wada et al., 2010).
VIRTUAL WATER TRADE, CSR AND WATER SUSTAINABILITY CERTIFICATION

International Trade, Virtual Water and Local Water Users’ Communities

The currently intensifying patterns of global trade in agricultural commodities and off-season fresh produce, such as fresh vegetables, fruits and flowers, significantly boost water consumption in export agriculture. Water used for the production of agricultural products can be regarded as ‘virtual water’ (Allan, 2003). It is estimated that the total virtual water trade between nations has doubled during the last twenty years: Dalin et al. (2012), for example, calculate that virtual water trade between nations, embedded in five major food crops and three livestock products, increased from 259 km$^3$ in 1986 to 567 km$^3$ in 2007.

Although virtual water trade has been presented as a solution for arid countries (Allan, 1998), virtual water flows are directed by global economic structures and trade relations rather than by the relative scarcity of water within nations (Seekell et al., 2011; Suweis et al., 2011). Moreover, increased virtual water trade between nations often implies increasing negative effects for the environment and communities in the exporting regions. Irrigated export agriculture increasingly leads to drying up of rivers, draining of wetlands, salinization, and over-extraction from aquifers, beyond repletion (Shah et al., 2007; Wada et al., 2010). Other effects associated with export agriculture are water contamination caused by the use of agro-chemicals; loss of biodiversity; and carbon dioxide emission related to long-distance transport of biomass. Global extraction of groundwater grew from approximately 100 km$^3$ in 1950 to nearly 1,000 km$^3$ in 2000. Most of this growth is concentrated in agriculture, particularly in India, China and Bangladesh (Shah et al., 2007).

The effects of virtual water trade are complex. Virtual water volumes do not directly imply negative effects (Wichelns, 2010). On the one hand, agribusiness developments offer opportunities, generating jobs and income. On the other hand, negative effects of water accumulation and aquifer depletion by agribusiness on local livelihoods are mounting. For millions of small farmers and agricultural labourers, in particular for many women, water use, resource depletion, and appalling labour, income and health conditions are directly related (Bee, 2000; Langan, 2011; Pearson, 2007). The immense growth in virtual water export, combined with the alarming depletion of aquifers and increased river water extraction, make virtual water export an indicator for elevated risks of environmental and social harm.

2. Wada et al. (2010) estimate total global depletion of aquifers at approximately 283 km$^3$ per year.

3. To assess the effects of virtual water export, a distinction should be drawn between consumption of green (rainwater) and blue (irrigation) virtual water. The potential alternative uses of water that is being extracted for export agriculture should also be taken into account.
Growth in agricultural trade is accompanied by a sharp horizontal and vertical integration of production and supply chains (Fuchs et al., 2009; McMichael, 2009). This enhances the economic and political power of major agribusiness and retail companies and powerfully links ‘the local’ to ‘the global’, and vice versa. Swyngedouw (2000) and Van der Ploeg (2008, 2010) show that the growing power of the agribusiness network reconfigures the scales of governance and tends to strengthen authoritarian decision making. Export–import networks are increasingly able to control production and consumption around the globe (Fuchs et al., 2009). The worldwide network of major food production companies and major food retailers establishes a specific way of assembling material and institutional resources into a network, the structural characteristics of which imply hierarchy, continuous conquest, submission and exclusion, linking and usually draining already existing local resources (Van der Ploeg, 2008). In this process, existing and alternative modes of organization (as in local households, peasant communities and indigenous territories) are supplanted or entirely rearranged (cf. Jessop et al., 2008; Swyngedouw, 2004; Van der Ploeg, 2008).

The growing use of irrigation water for export agriculture by large companies has led to competition with local water user communities in many regions. The ‘water question’ is about the struggle over access to water and the rules and discourses that legitimize differential water access and control. When confronted with powerful new actors, such as agribusiness enterprises, mining companies, or drinking water utilities, the less powerful local water user groups and the environment tend to lose out (Bakker, 2010; Castro, 2008; Swyngedouw, 2004; Zoomers and Kaag, 2014). In some instances, agro-export companies have informally or lawfully, but without consent by or consultation with local users, gained access to water (Boelens and Vos, 2012; Swyngedouw, 2000). These cases of ‘water grabbing’ have led to large protests and conflicts (Mehta et al., 2012; Smaller and Mann, 2009; Sojamo et al., 2012; Woodhouse and Ganho, 2011). Water grabbing affects many smallholders in Africa, Asia and Latin America. We present some examples as illustrations. In Peru, agribusinesses exporting vegetables and fruits to Europe and the US dispossess highland users and over-extract groundwater on the dry coast (Hepworth et al., 2010; Van der Ploeg, 2008). In Ecuador, companies that produce export crops and sugar-cane have accumulated nearly 75 per cent of formal water rights, but on top of that they accrue much more water informally and illegally, especially for export banana (Gaybor, 2011) and flowers (Breilh, 2007). In Paraguay, health effects are reported from the production of soybean for export, which severely pollutes soil and groundwater (Palau et al., 2007). Meanwhile, in North and Central Mexico, smallholders are deprived of access to water because of groundwater depletion by agribusiness vegetable production for export to the US (Peña, 2011); the same applies to Israel (Zeitoun et al., 2009), Pakistan and India (Chapagain et al., 2005), and East Africa (Becht et al., 2005).
CSR and Water Stewardship Certification

Since the 1990s, it has been common for transnational retail companies to engage in certification schemes to ensure product quality. Increasingly during the last decade, social and environmental criteria have been added to the control points for certification. Thus, certification has shifted from simple product quality assurance to prescribing and controlling the on-farm production process itself. The focus on social and environmental issues coincided with a growing interest in CSR. Certification is an important strategy related to CSR. At the same time, in order to secure their access to water, multinational companies have increased their involvement in water governance (Sojamo and Archer, 2012).

There are three related reasons for retailers to engage in private certification schemes (Henson and Humphrey, 2010; Hughes, 2001). First, supermarket chains need to control the supply lines to guarantee constant (or at least predictable) volumes of supply with acceptable quality. Increasingly stringent quality and safety standards also require high levels of traceability in the supply chain up to the level of individual producers. Regulations by national governments and permissive international regulations (such as the Codex Alimentarius) are not sufficient in that respect. Second, notwithstanding retailers’ global trading power, these companies are very vulnerable to reputational damage. Consumer organizations, environmental and social NGOs and the news media can easily damage the reputation of a company or brand by exposing cases of low quality products or adverse effects of the production process. Third, while most certification schemes used by retailers are business-to-business schemes, and thus no labels appear on the products, some supermarkets do seek to convey an image of social and environmental responsibility to appeal to new consumers. Different certification schemes seek to win support and legitimacy for their standards by appealing to scientific values such as objectivity, consistency, independence and transparency, and/or social standards such as sustainable production and fair trade.

Certification schemes have four main features (Mutersbaugh et al., 2005): a published document detailing the norms; an inspection process, usually performed by a third party; a quality seal on the product to alert the consumer, or a label used only by the retailers; and a certification organization that establishes and communicates the norms, trains producers and inspectors, and authorizes inspection agents.

Retailers are able to impose their standards upon producers because of the increased horizontal and vertical integration of value chains. This concentrates trading power in a few leading multinational retail companies (the world’s five largest are Wal-Mart, Carrefour, Ahold, Metro and Tesco; see

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4. Private schemes refer to standards that are developed and enforced by non-state institutions such as retail organizations.
Fuchs et al., 2009: 34). These supermarket chains can set and enforce minimum standards because they control the supply chain from producer to end-consumer. All growers that produce for supermarkets in Europe are obliged to subscribe to one or more certification schemes (Fulponi, 2007). Examples of widely used private quality assurance standards are: the British Retail Consortium (BRC), the Global Food Safety Initiative (GFSI), GlobalGAP, FOODTRACE and the International Food Standard (IFS) (Henson and Humprey, 2010).

Besides food quality assurance (conventional certification schemes), specific ethical and environmental certification schemes have emerged in line with ideas of CSR (alternative certification schemes). Unlike food quality schemes, ethical and environmental schemes label products for consumers in order to gain niche market shares from ‘conscious’ consumers. Examples are the Fair Trade (FLO) labels, ecological (organic) production (for example IFOAM, USDA Organic, EU Eco-regulation, and the Soil Association), the Marine Stewardship Council (MSC), Aquaculture Certification Council (ACC), the Forest Stewardship Council (FSC), and specific ‘carbon-neutral’ certification (such as the Rainforest Alliance). Other ethical certification schemes focus on labour conditions (Ethical Trading Initiative), animal welfare or biodiversity. Recent discussion of export crops’ large water footprint has moved several certification schemes to incorporate control points for water use and/or water pollution. While water use and management are widely recognized as very important issues, both in terms of environmental care and in terms of social justice, remarkably, the water issue did not receive much attention in international certifying schemes until recently.

Before examining the potential effects for smallholder communities of the recently developed ‘water sustainability standards’, we first elaborate on some of the critiques levelled at mainstream certification schemes and fair trade/organic standards.

Existing Critiques on Quality and Sustainability Standards

In terms of important flaws in conventional and alternative certification schemes, six main critiques can be distinguished.

- Technocratic definitions of standards. The technocratic approach to certification results in normalizing scientific knowledge. Uniform definitions and values are applied, to the detriment of local environmental knowledge, concepts and values (Friedmann and McNair, 2008; Gulbrandsen, 2009). Eden (2009), for example, explains how the FSC seeks confirmation for its standards and verification through scientific discourse. Similarly, in the certification of wetland credits related to the Clean Water Act in the US, the loss of wetland is mitigated by private
parties that sell wetland credits to offset the area affected. The wetland area is thus compensated for, but the value of the biodiversity, specific ecological functions and people’s territorial linkages to the location are not taken into account (Robertson and Hayden, 2008).

- Low levels of transparency and democracy in standard setting. Standards are set by dominant market players such as the GlobalGAP board members, who are all representatives of major producers or supermarket chains (Amekawa, 2009; Campbell, 2005). Bacon (2010), for instance, showed that smallholder producers have little say in Fair Trade coffee price setting.

- Exclusion of smallholders from producing for supermarkets. Several studies indicate that small farmers have difficulties complying with the strict regulations and high certification fees (Fuchs et al., 2009; Van der Meer, 2006). Studies by Amekawa (2009) and IIED and NRI (2008) indicate that, after introduction of standards in Kenya and Uganda, the number of smallholders exporting vegetables was reduced by half.

- Environmental benefits are negligible. Discussion continues regarding the effectiveness of environmental and fair trade labelling. Auld et al. (2008), Gulbrandsen (2008) and Klooster (2006, 2010) have assessed the positive and negative impacts of FSC certification. They conclude that some positive changes can be noted in practices of certified timber production companies; however, overall FSC certification has not improved the protection of forests. The already ‘good’ producers obtain certification, but the alternative market volumes are relatively low, so the vast bulk of producers continue their ‘business as usual’. Gulbrandsen (2009) concludes the same for MSC certification: practices of certified fishing companies improve, but overall fish populations and marine ecosystems worldwide are not better protected. In both cases the authors stress the importance of government regulation for conservation.

- Risk of co-opting by conventional market forces in the case of fair trade and organic labels. Mutersbaugh et al. (2005) and Guthman (2007) indicate that growth in the alternative market share increases the risk of capture by conventional market forces with less stringent criteria or development ethos. Equally, Taylor (2005) and Jaffee and Howard (2010) assert that large companies take over the markets for alternative products to appropriate the ‘premium price’ on those products. Standards that were originally driven by small producers’ movements (such as the organic standard of IFOAM: see e.g., Buck et al., 1997; Raynolds, 2004) or consumers’ movements (such as dolphin-safe tuna: see Baird and Quastel, 2011) tend to be copied and ‘mainstreamed’ by large players in the industry (Gulbrandsen, 2009).

- Susceptibility to poor monitoring and fraud. Some authors highlight the need for strong public social and environmental regulations, for
example in the case of coffee certification and FSC, as certification is vulnerable to pressure from private interests (Auld, 2010; Gulbrandsen, 2008; Klooster, 2006). The third-party audit business has grown into a real industry, moving millions of dollars annually. This industry, similar to the financial auditing sector, is based on building trust (Zagata and Lostak, 2012). However, for consumers it proves impossible to check the attained levels of compliance at farm level. Some reports (Albersmeier et al., 2009; Auld et al., 2008; Gulbrandsen, 2009) suggest that field audits face many problems, such as multiple interpretations of criteria and susceptibility to fraud, making third-party monitoring much less effective than claimed. Auld et al. (2008:197) report that in the case of corrective action required for FSC certification, most changes relate to documentation and monitoring practices, not to actual changes on the ground.

GOVERNMENTALITY AND WATER STANDARDS

Below we analyse sustainable water standards using Foucault’s (1991) concept of governmentality, approaching governance as a diffuse but strategic process of norm and value setting, and internalization of those norms by both governors and governed. Emerging regimes of transnational governmentality regarding the management of natural resources involve a constellation of local, national and transnational actors who not only attempt to regulate, distribute and process natural resources, but in the process also reshape knowledge frameworks and truth claims (Ferguson and Gupta, 2002; Sawyer and Gómez, 2008). In this interface of knowledge/policy interaction regarding natural resource management, new norms, standards and rules are developed — new ways of defining and tackling the problems, including new ways of framing the water question. They compose ‘modern’ regimes of thought and action with powerful steering potential, with their own sets of rules, water engineering and cultivation practices, technologies, measuring instruments, product features and social relations of production and exchange.

Based on the notions of governmentality described by Hughes (2001) to analyse certification standards, we distinguish three themes for analysis: (1) standards as ‘production of truth’ and ‘mentalities’ that constitute systems of collective rationalities, values, norms and knowledge; (2) standards as networks that prescribe roles and establish power relations between companies and producers; and (3) standards as ‘techniques of visibilization’ that control practices and discipline producers. In our analysis we are particularly interested in the effects of standards on the ‘water question’: how are water rights and practices of access to water of smallholders affected by water sustainability standards?
1. Standards as ‘production of truth’ and ‘mentalities’
Standards can be related to the ‘production of truth’: in the words of Foucault (1980: 102), ‘It is the production of effective instruments for the formation and accumulation of knowledge — methods of observation, techniques of registration, procedures for investigation and research, apparatuses of control’. Thus, in the water domain, new valid water knowledge is produced in endless ‘degrees of validity’ to be measured according to the new standards. This involves the full range of key issues in current water policy thought, which all have a strongly normative character: efficient water use, productive irrigation systems, equitable water allocation, best watering practices, democratic water governance, sustainable water extraction and distribution technologies, etc. These normative foundations, however, are objectified and universalized in water certification regimes and become measuring tools for ‘certifying good water use’: the varied array of existing local water knowledge, practices and values are all judged according to their deviation from these standards. This way, ‘truthful’ water knowledge and ‘optimal’ water use norms tend to be entirely depoliticized, as are the agents and relations that set the standards (see Boelens and Vos, 2012).

2. Standards as networks that prescribe roles and establish power relations between companies and producers
As a logical consequence, beyond the issue of how ‘true’ water statements are, and how ‘valid’ water knowledge and ‘universal’ scientific norms might be when placed in local contexts, this raises a number of other questions: how these standards, statements and knowledge claims are produced; how the rules are established that separate true and non-true water knowledge, or good and bad water use practices; and how they are linked to the power relations that sustain them.

Beyond just monitoring local water realities according to the ‘modern’, externally developed standards, the intimate relationships among agribusiness, agricultural policies and intervention, and water scientific development, also lead to the scientization of existing water and agricultural production systems — the systematic, constant remodelling and reorganization of concepts, tools and practices according to the standards of scientific design (Van der Ploeg, 2008). In many local water user realities, this implies a process of profound externalization (or at least subjugation) of local water rights and knowledge frameworks, technologies and practices, also detaching norms, rights, skills and forms of water management organization from any particular cultural space and place (see Boelens, 2009; Boelens and Zwarteveen, 2005).

Water sustainability standards are all based on management roles, rules and organizational forms developed by Western-scientific ‘water schools’ and are mostly composed and decided by companies in Europe and the US. Within the supply network, clear roles are established between the board that defines the norms, the retailers, the auditors and the producers. The roles that
actors assume and the positions they occupy imply social power relations. In this way, certification schemes aim to produce ‘order and control’ throughout the agro-food (virtual water) chain, and also influence water authority outside the direct supply chain (Hughes, 2001). This happens, for example, when standards are reproduced locally and set new norms for national markets.

3. Standards as ‘techniques of visibilization’

Standards can control practices and discipline producers by making some practices visible. As Foucault argued, ‘Visibility is a trap’ (1975: 200), and certification systems may be seen as ‘panopticon-like’ instruments (Foucault, 1975) — not only to control and correct, but also to auto-correct in accordance with the water use norms established by the enterprises which govern the chain. In this sense, standards can be seen as ‘techniques of visibilization’ (Boelens and Vos, 2012) in two ways. First, standards highlight certain aspects of production and obscure others. This ‘foregrounding’ and ‘backgrounding’ forms an effective technique to control discussions on what is regarded as ‘sustainable agriculture’ and how to assess it. Second, techniques of visibilization render small producers visible. Through inspection at farm level and through the systems of administration and traceability, retailers (and sometimes consumers) can ‘observe’ producers. Combined with stringent regulations that denounce particular smallholder production practices, this forms an effective technique to discipline small-scale producers.

The most commonly used technique of regulation in certification schemes is auditing by third parties. This is an important mechanism of control within supply networks. The auditing is an engineering instrument to enforce conformity to the regulations set by the buyer. This monitoring and enforcement changes producers’ ‘mentalities’ and practices. Standards are thus techniques of visibilization that render producers’ conditions and actions visible. Certification demands that auditors and producers register an increasing number of characteristics of the production process. Traceability is increasingly important as retailers want to know the origin of the products they sell, not only in the context of product quality and health risks, but also sustainability claims. Documentation on producers’ characteristics and actions is available to retailers and sometimes to consumers. However, the same is not true in reverse: farmers do not have access to information from retailers or consumers; the flow of information is one-way (Mutersbaugh and Lyon, 2010). The spotlight falls on small producers, while agro-export companies and consumers remain in the shadows.

5. See also Vestergaard (2012: 180) for the use of this concept in the international financial sector.

6. Agro-export companies stay out of the limelight for a number of reasons: because their practices (such as using drip irrigation) are more closely aligned with the standards; because standards do not address the important off-farm effects of large companies, such as aquifer
RESULTS: WATER SUSTAINABILITY STANDARDS

Recent discussion on the water footprint of export crops has moved several certification schemes to incorporate control points related to water use and/or water pollution (for example GlobalGAP, MPS-ABC, the Rainforest Alliance and IFOAM; see Table 1). During the past decade, GlobalGAP has become the leading standard for growers who sell to the European market, with over 110,000 certified producers in more than 110 countries. Control point CB 6.4.1 of the GlobalGAP standard demands that water should be ‘extracted from a sustainable source’. The examples of control points shown in Table 1 show how current certification schemes refer to water use efficiency, groundwater depletion and water quality. Some are very specific while others are very broad and vaguely defined or voluntary. There is hardly any consideration of water management and governance issues at watershed level. The GlobalGAP standard is widely applied (and is required for selling to retail markets in Europe); the other standards represent relatively small (but rapidly growing) niche sectors.

Recent documents on standards for major bulk products such as sugarcane, cotton, soy and biofuels are now being developed through sector dialogues. The draft versions of these standards also show criteria related to water use and environmental quality. We reviewed the draft documents of the Better Cotton Initiative (BCI), Better Sugarcane Initiative (BSI), Round Table on Responsible Soy (RTRS) and the Round Table on Sustainable Biofuels (RTSB). As can be seen in Table 2, these initiatives show different approaches to ‘water sustainability’. The BCI, RTRS and RTSB address groundwater depletion. The BSI, on the contrary, does not address groundwater use and sets relatively permissive standards for water pollution. This might be due to the membership of the BSI board — mainly major companies that buy sugar — whereas the BCI, RTRS and RTSB boards include representatives of NGOs and research institutes.

An initiative that is entirely devoted to water use certification is the Alliance for Water Stewardship (AWS). The AWS is a collaborative multi-stakeholder effort initiated by several NGOs in 2008 to develop a water stewardship standard and certification system to guide and reward sustainable water resource use (AWS, 2011). These standards will be developed through global water roundtables. Most water sustainability standards are B2B (Business to Business) schemes. At the consumer level, just a few brands have developed specific labels related to water standards. One example
deployment; and because inspection is susceptible to biased interpretations and fraud. Companies may thus be accused of a form of ‘greenwashing’ — the act of claiming compliance with certain sustainability standards, whereas in practice the company does not adhere to them. The intentional practice of greenwashing by transnational companies is an invisibility strategy, but that discussion is not part of this article.
### Table 1. Examples of Water Issues in Existing Standards

<table>
<thead>
<tr>
<th>Certification scheme</th>
<th>Control point no.</th>
<th>Control point related to water</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>GlobalGAP (1)</td>
<td>CB 6.2.1</td>
<td>(…) The irrigation system used is efficient. The producer uses the most efficient irrigation system – as is technically available and financially affordable, and complies with any legislation about local restrictions on water usage. (Major Must)</td>
<td>Final Version 4.0_Mar2011</td>
</tr>
<tr>
<td></td>
<td>CB 6.4.1</td>
<td>To protect the environment, is water abstracted from a sustainable source? Sustainable sources are sources that supply enough water under normal (average) conditions. (Minor Must)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CB 6.4.2</td>
<td>Has advice on abstraction been sought from water authorities, where necessary? Where necessary, there must be written communication on this subject (e.g. letter, licence, etc.).</td>
<td></td>
</tr>
<tr>
<td>MPS-ABC Flowers (2)</td>
<td>2.8.4</td>
<td>Drip irrigation or recirculation (requirement depends on region and type of production system).</td>
<td>Version ratified by the MPS Board on 24 November 2010.</td>
</tr>
<tr>
<td></td>
<td>2.8.6</td>
<td>Records of irrigation usage. Records need to be kept solely of the quantity of water used for irrigation which is supplied by human (mechanical) action (m³).</td>
<td></td>
</tr>
<tr>
<td>IFOAM Organic Standard (3)</td>
<td>2.2.6</td>
<td>Operators shall not deplete nor excessively exploit water resources, and shall seek to preserve water quality. They shall where possible recycle rainwater and monitor water extraction.</td>
<td>Version 2010 – Draft version 0.1.</td>
</tr>
<tr>
<td>Rainforest Alliance – SAN Sustainable Agriculture Standard (4)</td>
<td>4</td>
<td>4.1 The farm must have a water conservation programme that ensures the rational use of water resources. The programme activities must make use of the best available technology and resources. It must consider water re-circulation and reuse, maintenance of the water distribution network and the minimizing of water use. (…)</td>
<td>July 2010 v2.doc 22</td>
</tr>
</tbody>
</table>

Sources (all accessed 25 April 2012):
(2) http://www.my-mps.com/LinkClick.aspx?fileticket=dSIKZ3Fssqk%3d&tabid=168&language=nl-NL
(3) http://www.ifoam.org/about_ifoam/standards/norms.html
Table 2. Water Issues in the Draft Standards of Sector Roundtables

<table>
<thead>
<tr>
<th>Roundtable</th>
<th>Draft requirement related to water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better Cotton Initiative (BCI) Version 2.0</td>
<td>2.2: Management practices are adopted to ensure that water extraction does not cause adverse effects on groundwater or water bodies.</td>
</tr>
<tr>
<td>December 2009 (1)</td>
<td></td>
</tr>
<tr>
<td>Better Sugarcane Initiative (BSI), Bonsucro</td>
<td>4.1: Oxygen demand by calculation of quantity and analysis of runoff.</td>
</tr>
<tr>
<td>Production Standard Version 3.0, March 2011(2)</td>
<td>– To protect any existing riparian areas, wetlands or other significantly affected natural habitats in a satisfactory state, to provide habitat corridors and to conserve any rare, threatened or endangered species.</td>
</tr>
<tr>
<td>Round Table on Responsible Soy (RTRS) Production Version 1.0 10 June 2010 (3)</td>
<td>5.1: The quality and supply of surface and ground water is maintained or improved.</td>
</tr>
<tr>
<td></td>
<td>5.1.4: Where irrigation is used, there is a documented procedure in place for applying best practices and acting according to legislation and best practice guidance (where this exists), and for measurement of water utilization.</td>
</tr>
<tr>
<td></td>
<td>5.2: Natural vegetation areas around springs and along natural watercourses are maintained or re-established.</td>
</tr>
<tr>
<td>Round Table on Sustainable Biofuels (RTSB)</td>
<td>Principle 9: Biofuel operations shall maintain or enhance the quality and quantity of surface and ground water resources, and respect prior formal or customary water rights.</td>
</tr>
<tr>
<td>Version 2.0</td>
<td>Criterion 9a: Biofuel operations shall respect the existing water rights of local and indigenous communities.</td>
</tr>
<tr>
<td>20 January 2011 (4)</td>
<td>Criterion 9b: Biofuel operations shall include a water management plan which aims to use water efficiently and to maintain or enhance the quality of the water resources.</td>
</tr>
<tr>
<td></td>
<td>Criterion 9c: Biofuel operations shall not contribute to the depletion of surface or groundwater resources beyond replenishment capacities.</td>
</tr>
<tr>
<td></td>
<td>Criterion 9d: Biofuel operations shall contribute to the enhancement or maintaining of the quality of the surface and groundwater resources.</td>
</tr>
</tbody>
</table>

Sources (all accessed 25 April 2012):
(1) http://www.bettercotton.org/files/BCSInfoPack/2A_Production_Principles_and_Criteria_2.0_final_eng_ext.pdf
(2) http://www.bonsucro.com/standard/bio_diversity_eco_systems.html
(3) http://www.responsiblesoy.org/
(4) http://rsb.epfl.ch/files/content/sites/rsb2/files/Biofuels/Version%202/Indicators/11-03-08%20RSB%20Indicators%202-0.pdf

is the Elovana oat flakes brand of the Finnish company Raisio, which has a label on the package indicating the water footprint. Mekonnen et al. (2012) propose to introduce a water label for cut flowers from Kenya, but they do not explain how the flower producing companies would reduce water consumption and contamination. An example of a water label from the garment industry is Levi’s Water<Less™ jeans. Compliance with the international standards by producers supplying supermarkets and food companies is certified through third-party auditors. For instance, the GlobalGAP scheme has accredited some 130 international, national and local inspection com-

Some important international certifying companies include Bureau Veritas Certification (France), BCS (Germany), SGS (Switzerland) and TÜV Cert (Germany).

Governmentality Mechanisms and Effects of Water Sustainability Certification

In this section, we analyse how water certification control points aim to enhance governmentality and how they may affect smallholder families and communities, again using our three analytical themes.

1. Standards as ‘production of truth’ and ‘mentalities’ that constitute systems of collective rationalities, values, norms and knowledge

International private standards have direct and indirect effects on producers’ practices. Standards have discursive power and wield political pressure, among others, because of the economic importance of the sectors, and because the Foucauldian power–knowledge–truth regimes from which they emanate confirm their great importance and validity. The norms and values of international private standard schemes are often internalized by professionals and national legislators (Bailis and Baka, 2011). However, local users’ communities also may internalize the norms of ‘efficient’ water use and ‘best practices’ (Boelens and Vos, 2012; Guevara, 2010). This implies that, even if farmers are excluded from export because of certification schemes, the same certification schemes might affect them indirectly through the subtle, capillary processes that normalize and homogenize national or local rules and regulations.

All environmental standards applied and developed at this moment (see Tables 1 and 2) tend to express the presumably ‘natural’, self-evident and unquestionable rationality of ‘modern’ water control. Modern water control is commonly presented as the technical manipulation of water flows and human behaviour with the most accurate infrastructural and managerial tools and according to scientifically established, measurable and universal criteria, to maximize agricultural outputs with minimal use of water and funds. Water control modernization sets standards for what is achievable; current performance levels must be measured against these norms to evaluate their degree of ‘modern-ness’; mainstream ‘efficiency’ and ‘productivity’ standards are a clear example of this (Boelens and Vos, 2012).

A micro-level example of a set of standards that seeks to naturalize ‘best practices’ is the ‘Smallholder Guide for GlobalGAP Soil and Water Module’.

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The guide provides ‘best practices’ in soil and water conservation. While some recommendations may indeed support environmentally sound practices or leave manoeuvring space to local farming skills, other so-called ‘best practices’ would yield counterproductive effects in specific local circumstances. For example, ploughing across the slope to avoid soil erosion may generally be an environmentally friendly practice, but in many highland production systems one can also find sustainable ploughing down the slope to facilitate quick drainage of storm water on slopes that might otherwise collapse. Ploughing down the slope also prevents damage by night frost as relatively warmer air can rise from the bottom of the valley through the crop along the furrows and rows of crops on the slope.

Normality and the desire to become ‘normal’ water users and follow the ‘modern standards’ are not the autonomous ideals of an individual, but are profoundly relational. It is the wish to belong to the ‘Western’ irrigation and water management school and resemble its image. Standards in such a normalization process have the function to compare, categorize, hierarchize and (self-)correct farmers according to the gaps that they show when measured against the norm. Previously excluded indigenous and peasant groups feel the obligation and need to participate in this game that sets new rules for their households, communities, irrigation systems, etc. Yet the less privileged social groups — who might expect to gain equal advantage from the universal standards — internalize and reinforce these norms but mostly do not derive the benefits (see for example Boelens and Vos, 2012; Boelens et al., 2014; Guevara, 2010). Their participation often results in disappointment, in their being defined as ‘permanently backward people’, due to the constant self-measurement in relation to an inaccessible norm, the impossibility of actually matching up to the standards necessary to become equal (Boelens, 2009).

The certifiers’ preference for drip irrigation over the surface irrigation practised by most smallholders in the world is a typical example. Drip technology is widely regarded as more efficient and therefore several sustainability standards promote drip irrigation as ‘best practice’. Introduction of drip technology, however, also has social consequences. With drip irrigation, less water percolates to deeper parts of the soil; while commonly considered a loss, this more deeply infiltrated water is often utilized by other users downstream in the watershed (Lankford, 2006). Thus, more efficient water use at farm level through the introduction of drip irrigation might lead to a concentration of water and land by large farmers, to the detriment of smallholders (Hepworth et al., 2010). Moreover, smallholders (in and outside certification schemes) are trained to see themselves as inefficient, anti-modern surface water users and feel pressured to introduce drip irrigation.

technology, even if their economic situation prevents them from meeting
the standards. When smallholders do convert to drip irrigation, this can neg-
atively affect smallholders’ irrigation schemes because conversion to drip
by individual plot owners can disturb long-established, effective methods of
water distribution (Boelens and Vos, 2012).

In general, agricultural export chains, combined with developmentalist
programmes and national water and agricultural policies, often make huge
efforts to align water user families and collectives to the export market
by means of technification. Many training programmes by national NGOs
and international donor agencies teach smallholders how to comply with
international standards (see e.g. Jaffee and Howard, 2010), and international
norms also become the regional and local norms for good water management,
efficient cultivation and social justice, as the drip example shows.

The next example involves the insistence by certifiers that standards must
adhere to national legislation as the single true allocation mechanism of
water rights. In fact, it is precisely by making it a compulsory condition for
companies to respect national legislation and obtain legal water rights titles,
that standards tend to reinforce local inequalities. In most countries, partic-
ularly in developing and (formerly) colonized countries, water rights exist
in conditions of legal pluralism, whereby a diversity of official, customary
and other local law systems interact (Boelens and Gelles, 2005; Guevara,
2010; Rodriguez de Francisco et al., 2013; Roth et al., 2005; Saldíaz et al.
2012). Requiring acquisition of formal water rights as a certification con-
dition leads to five problems. First, most local communities and water user
families manage water according to their own rules and rights; they typically
lack official land and water titles and are thus excluded. Second, national leg-
islation is often biased towards recognition of water use rights practices and
management forms of larger (‘modern’) land owners who ‘set the norms’. Third,
the latter commonly have far better access to the political and legal
domains to get their water access practices legalized. Fourth, whenever local
customary rights communities do manage to get access to the official system
to have their rights legalized, the legal system tends to undermine customary
water norms and organizational forms. Fifth, in many countries, the fact
that some (often large) farmers have their water use legalized through for-
malization processes means automatically that the rest (often poor farmers
and communities with collective rights) become illegal water users, open to
encroachment by new enterprises that do have legal titles (Boelens, 2009).
Thus, by making legal titles and compliance to one normative framework
(national law) a condition, the international certification process tends to
contribute to undermining local and customary water rights frameworks and
organizations, and to increasing legitimacy for unequal allocation of nat-
ural resources between export-oriented companies and local water users’
communities.

These effects can be seen, for example, in the Andes of Peru. As in other
parts of the Andean region, most water user communities do not have official
(legal) rights to the water they historically use and own. Therefore, peasant and indigenous communities have difficulties defending their rights vis-à-vis mining, agribusiness, drinking water and other companies. In Peru, water rights (licencias) are granted to individual farms (predios), except for new rights that are allocated to blocks of users. Of the 1.8 million irrigated predios in the country, only some 380,000 have an official licencia, leaving the rest without legal recourse. Consequently, as in other legally and culturally diverse countries, the certification criterion that participants must have legal titles directly benefits the large-scale, private farms.

Ancient irrigation practices in Ecuador offer a micro-level example of naturalized ‘best practices’ in water management. In the Andean highlands, canterones are used to irrigate vegetables and alfalfa on long sloping fields. Canterones are long, zigzag furrows running down the steep hillside. Irrigation experts advised that this practice be changed because water use was perceived as being inefficient. However, these regions have a pattern of intermittent outmigration of men to earn income in cities, so that it is predominantly women who use the canterones. They prefer them to multiple straight furrows, because they save on irrigation labour time. Moreover, the fields comprise long strips of land perpendicular to the contour lines as a result of equity principles applied during plot division at inheritance; this inhibits long straight furrows along the contour lines as proposed by the ‘experts’. Still, modernization discourse might create a sense of guilt and backwardness among the irrigators. The techniques, the knowledge and the standards of the ‘experts’ all become desirable. The wish to become a técnico and to represent oneself in their terms is fundamental in this power play: water users see themselves as inefficient, and their assumed lack of ‘progress’ becomes directly associated with self-reproach (see Boelens, 2009).

2. Standards as networks that prescribe roles and establish power relations between companies and producers

The criteria of environmental standards are developed by companies and organizations that come mainly from Europe and the US. As a consequence, it is not water users embedded in local water cultures and community livelihoods, with long-standing practical experience, who determine standards, but certification experts and water specialists from water modernization schools who decree what is (universally) right, imposing particular norms and values and ways of looking at farming and resource use. The setting of standards for ‘good’, ‘efficient’ and ‘sustainable’ agricultural and water management practices is implicitly left to experts from Europe or the US, who follow international or Western norms rather than, for example, the heterogeneous norms that are established by peasant and indigenous

knowledge systems. Private standards are generally developed and monitored with little involvement from national or local stakeholders from the global South (Amekawa, 2009; Bacon, 2010; Campbell, 2005). Certification and audit companies are also almost exclusively from the North\textsuperscript{12} (Fuchs et al., 2009; Ouma, 2010).

Even when roundtables are set up to involve different stakeholders in specific sectors (sugarcane, biofuels, cotton, soy beans), large transnational companies, international NGOs and supranational policy networks dominate the negotiation table; it is far more difficult for organizations that represent small farmers to participate and stake claims. For example, the board of GlobalGAP that decides on standards is composed of eight members: four elected representatives of retailers, and four elected representatives of suppliers. Currently, all members are from either Europe or the US. The standards of GlobalGAP are discussed in various Sector Committees; GlobalGAP reports that one representative of smallholders participates in the Sector Committees. According to its webpage, GlobalGAP wants to incorporate the needs of smallholders into the application and further development of the standard. This was the rationale for establishing the Africa Observer project, with substantial international funding from the UK Department for International Development and GTZ. Since 2009, however, only one ‘smallholder ambassador’ has represented the views of smallholders in all GlobalGAP Sector Committee meetings.\textsuperscript{13} This seems a meagre representation of the vast and diverse group of smallholders, compared to the many representatives of large agribusiness and food industry companies. Moreover, this smallholder ‘representative’ is Chief Executive of an association of exporters from Kenya that, according to its own website, ‘represents small, medium and large exporters equally’, and thus can hardly be taken to be a representative of small farmers only.\textsuperscript{14} Transnational power groups deploy concepts such as ‘local’ and ‘small’ in strategic ways. As a consequence, it is common to see that standards imposed are discriminatory for smallholders.

The power of retailers to control the production and processing chain is expressed in the ability to exclude certain producers, in bias towards particular (technocratic) farming practices, and in the reshaping of local production structures and resource use in accordance with the demands of global food networks (Blowfield and Dolan, 2008; Fuchs et al., 2009). Technocratic

\textsuperscript{12} Standards and norms spread in the sector at different levels through diffuse processes. For example, national certification bodies adapt international norms. Also government and non-governmental organizations react to and adapt international norms. However, national audit companies are obliged to apply the international norms for certification of export agricultural produce.

\textsuperscript{13} Source: http://www.globalgap.org/cms/front_content.php?idcat=70 (assessed 22 April 2012).

\textsuperscript{14} Source: http://www.fpeak.org/about.html (accessed 22 April 2012).
water sustainability certification by private companies strengthens the already strong economic and political power of leading supermarket chains and food industries, to the detriment of local water user communities (cf. Friedmann and McNair, 2008; Gulbrandsen, 2008).

3. Standards as ‘techniques of visibilization’ that control practices and discipline producers

Water standards highlight certain aspects of production and obscure others. For example, they focus attention on smallholders’ customary water rights frameworks and label them as illegal. Or they highlight the use of drip irrigation as an important indicator of sustainability, so that most smallholders are made visible as ‘unsustainable’. At the same time, the negative consequences of drip irrigation mentioned above are made invisible — the dark side of visibilization techniques. Drying of rivers and aquifer depletion are not halted by installing large-scale drip irrigation. Moreover, surface irrigation can be very efficient (especially in conditions of deficient irrigation supply), and in some circumstances water lost from the fields through deep percolation offers benefits such as using peak river flows for groundwater recharge.

There are many examples of standards being used to render small producers visible and to discipline them. Certification agencies commonly require producers to register the use of irrigation technologies; the GlobalGAP standard requires water users to keep records of their water turns. These records and the massive administration that enforces the rule of traceability (each product is traceable from consumer to farmer by use of specific codes) make the small producers visible and controllable. Farmers are required to build latrines and install places where they and their farm workers can wash their hands (water comes from buckets, as they often do not have running tap water near their fields), thus disciplining the hygiene habits of the smallholders. Those farmers who insist on their ‘bad habits’ of not installing a latrine and not washing their hands before entering the field (they might have a toilet and running tap water at home, some distance from the field) are denied the possibility of producing for the export market.

These examples are a few out of many. The ‘panopticon’ makes smallholders feel obliged to convert from basin and furrow irrigation techniques to drip irrigation although, at basin level, no water is saved by this technology. They feel obliged to wash their hands, while legal insecticide application might be much more harmful for consumers’ health. One-size-fits-all rationality of standards that visibilize ‘bad habits’ of farmers and make the latter ‘traceable’ disproportionately affect smallholders, who tend to be more diverse and to ‘deviate’ from outside (national and transnational) rules, while they also have fewer financial means to comply with these supposedly ‘good habits’.
DISCUSSION

Water sustainability standards have the potential to prevent water grabbing and water contamination. However, current standards target on-farm irrigation technology and record keeping, disregarding how water use is geographically and politically embedded in catchments, territories, and broader institutional, socio-economic and cultural contexts. On-farm sustainability labelling focuses only on micro processes disconnecting farming from the specificities of local ecosystems and regional societies (Van der Ploeg, 2008). For instance, it is common to see that water use in golf courses or agribusiness enterprises is regarded as highly ‘efficient’ and ‘sustainable’ in narrow, technocentric terms, but actually it is highly inequitable and unsustainable when set in the wider territorial geography — the spaces and places from which the water has been taken.

This does not imply that environmental and third-party effects cannot be taken into account in certification schemes. The monitoring process could involve representatives of, for example, watershed organizations, water users’ associations, labour unions, organizations of small farmers, community organizations, local and regional water agencies, drinking water utilities, etc. This would also allow them to include issues that are pressing at a local scale. The importance of this is highlighted by Elgert (2012), who notes that certification of ‘sustainable production’ does not currently address the fundamental issues that affect smallholders, such as inequitable distribution of land and water.

Under pressure from activist movements, consumer networks and farmer federations, some certifiers have started to discuss broader issues of environmental and social impacts, for example, applying a watershed view or socio-territorial focus instead of a reductionist view focusing only on farm plots and companies (Friedmann and McNair, 2008). The challenge is to include third-party effects, as well as more integrated hydrological planning and evaluation beyond the farm-plot. This requires a move from ‘prescriptive’ to ‘consensual’ and ‘learning-based’ certification (Auld et al., 2008). What is especially needed is to invert the visibility mechanisms that are associated with standards — to establish strategies and norms that address and visibilize the practices of large agro-export companies, in order to tackle extreme behaviour such as water grabbing and water contamination, since those practices disproportionately affect smallholders and ecosystems.

At the international level, we see a crucial development: farmer associations (together with consumers’ organizations) are engaging in multi-scalar action to take part, politically and critically, in different roundtables, expressing and defending the visions, norms, knowledge and interests of local farmers and communities. If prevailing certification practices, norms and discourses are to be reshaped, smallholder water user federations will need to collectively and critically debate such norms and interests with their constituencies; they will need to ‘jump scales’ and lobby for inclusion in
sustainability standards and the water question

policy- and decision-making platforms (Bebbington et al., 2010; Borras et al., 2008; Horowitz, 2011; Swyngedouw, 2004). Their aim would be to respond to transnational agro-food chain governmentality through ‘counter-conduct’ (Foucault, 1978/2002), strategically linking territories and scales in networks to defend their own interests and worldviews (Boelens et al., 2014; Jessop et al., 2008; Swyngedouw, 2000), contesting the modernist and environmentalist discourses of ‘sustainable development’, ‘efficient water use’ and ‘good water governance’ as expressed in official and universalist understandings (Boelens and Vos, 2012; Perreault, 2008).

conclusions

on a vast scale, transnational agro-food industries and large-scale agro-export companies are reshaping local–global relations of water governance and water-based production and export, draining local communities’ fundamental resources. Increasing global trade has led to accumulation of land and water rights, depletion of aquifers, and contamination by agribusiness.

international private certification schemes have significant flaws when it comes to operationalizing sustainable and/or fair production and trade of agricultural products, e.g., by protecting local communities’ and smallholders’ water rights and access. They fail to deal adequately with the spatial and social diversities that underlie local livelihood strategies, agro-environmental production processes and water control problems. Moreover, their governmentality projects commonly aim to steer the conduct of local water user communities. They introduce standards that either exclude, or align, normalize and ‘correct’ the latters’ production practices according to the interests of transnational agro-food chains.

alternative modes of certification could be based on schemes that recognize local or regional diversity and elaborate on context-based conceptualizations of sustainability and fairness. However, these cannot be left to the initiative of current agro-food companies and chains or private certification schemes; rather, water user communities must engage in ‘counter-conducts’, in particular by deploying scalar strategies to influence water and environmental governance simultaneously at local and at wider geographical and political levels. Farmer and water user organizations need to strategically advocate for protection of their interests in international arenas. In this respect, scaling up local water rights and access struggles — including certification strategies — is not just a strategic move but also a direct consequence of the increasingly transnational character of the ‘water question’, including the export of virtual water, and the transnational background of smallholders’ adversaries. Both the governmentality-driven politics of the latter (trying to align water user communities to their frameworks, rules and regulations, or supporting large farms which challenge local communities’ water access rights) and the resistance strategies of local user collectives and federations
(aiming for the localization of water access and decision-making power) are fundamentally related to their power to compose patterns of multiple scales. As most initiatives for sustainability certification regarding water are in their initial stage of development, it is too early to evaluate their overall effects. However, certification and labelling of products is an increasingly important economic and political phenomenon, and the flaws that we have identified will negatively affect the most vulnerable groups in developing countries. It is vital that ways be found to improve the development of certification processes and their political control, for instance by empowering local producers’ organizations, inverting visibility mechanisms (to expose extreme behaviour by export companies), and challenging roundtables to allow for the concrete, substantial inclusion of local producer organizations and smallholder water use interests.

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