



UvA-DARE (Digital Academic Repository)

The UN World Water Development Report 2016, Water and Jobs

A Critical Review

Shah, E.; Liebrand, J.; Vos, J.; Veldwisch, G.J. ; Boelens, R.

DOI

[10.1111/dech.12395](https://doi.org/10.1111/dech.12395)

Publication date

2018

Document Version

Final published version

Published in

Development and Change

License

CC BY-NC-ND

[Link to publication](#)

Citation for published version (APA):

Shah, E., Liebrand, J., Vos, J., Veldwisch, G. J., & Boelens, R. (2018). The UN World Water Development Report 2016, *Water and Jobs: A Critical Review*. *Development and Change*, 49(2), 678-691. <https://doi.org/10.1111/dech.12395>

General rights

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

Assessment

The UN World Water Development Report 2016, *Water and Jobs: A Critical Review*

**Esha Shah, Janwillem Liebrand, Jeroen Vos,
Gert Jan Veldwisch and Rutgerd Boelens**

United Nations, *World Water Development Report 2016: Water and Jobs*. World Water Assessment Programme. Paris: UNESCO, 2016. 166 pp. € 45. Downloadable from: <http://unesdoc.unesco.org/images/0024/002439/243938e.pdf>

INTRODUCTION

‘The potential impacts of water scarcity or reduced water availability on economic growth and the job market are real and possibly severe’, warns the United Nations World Water Development Report 2016 on *Water and Jobs* (hereinafter the Report) (p. 4). It also warns that not investing in water management/storage infrastructure will make many developing countries chronically ‘water-scarce’, curtailing economic growth and job creation. The Report forcefully argues that if the potential increase in water scarcity problems is not addressed it will result in negative impacts on economic growth and employment, especially in the developing world. It also calls for more private investment in infrastructure and market-based innovations — public–private partnerships (PPPs) — to alleviate this danger. Next, it advocates for improvement in water use efficiency and productivity through technological innovation and market competition to increase employment globally, not just in the water sector. This is not the first UN World Water Development Report (WWDR) to advocate the mobilization of private and market forces to address water scarcity, despite the existence of contrary evidence (Swyngedouw, 2013: 829).

We see a major contradiction between the assessment and proposals of the WWDRs, including the one under review, and the actual manifestation of

The authors thank the anonymous referees for their comments, which helped improve this Assessment.

Development and Change 49(2): 678–691. DOI: 10.1111/dech.12395

© 2018 The Authors. *Development and Change* published by John Wiley & Sons Ltd on behalf of Institute of Social Studies.

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

socio-economic conditions. This Assessment of the 2016 Report on *Water and Jobs* will focus on addressing such contradictions, adopting Gillian Hart's distinction between Big D development and little d development (Hart, 2001). Hart describes Big D development as the post-World War II project of Northern intervention in the global South, and little d development as the 'geographically uneven and historically contradictory set of capitalist processes' (ibid.: 650). The D/d distinction also has affinities with the earlier work of Cowen and Shenton (1996) on the difference between development as 'intentional practice' and development actually unfolding as 'immanent process'. Cowen and Shenton, in their detailed historical work, show the uneasy tension between the dictate of 'intentional development' which they call the doctrine of development or 'desire to develop' in nationalist or state planning, and what have been the 'immanent processes' — a predicate of capitalist development (ibid.: 163, 167, 236).

Our first aim is to review the Report by unpacking this distinction, asking whether, how and why development as 'intended intervention' may differ from and even contradict the actual practices of water management — 'immanent processes' of development in the specific socio-cultural and historical context. We locate the Report in the history of debates on water and development, engaging both with the debates in the UN system and those initiated by the Transnational Policy Network (TPN) on water that have culminated in the proposal of privatization as a panacea for creating equitable and sustainable water management practices, including in the Report under review. We argue that in the Big D 'interventionist' development tradition, this policy document does not accurately portray actual water management practices as experienced by people and professionals 'in the field'. We also aim to show how, in this Big D development format, the Report helps a small, global policy elite to steer the policy discussions in very normative, narrow directions. We review this Report within the context of the UN network to understand how it frames policy discussions on 'development', water and jobs.

Our second aim is to point out three contradictions between Big D and little d development in the context of the Report. These involve: (1) the way the analysis of the Report and its policy recommendations rely on economic and technological 'expert knowledge'; how this knowledge is presumed to be universal, while it is now well documented that such knowledge is strongly biased and grounded in the dominant water culture (and its class, ethnic and gender interests and perspectives); and how this knowledge sidelines alternative water cultures and water worldviews (e.g. Vos and Boelens, 2014); (2) the Report's assumptions that the privatization of water infrastructure and market forces based on competition and efficiency benefit the poor and most vulnerable, despite the overwhelming evidence to the contrary (e.g. Bakker et al., forthcoming 2018; Boelens and Vos, 2012); and (3) how water scarcity in the Report is treated as a 'technical fact', while a considerable scholarly literature has shown that water scarcity is socially produced by

legislation, allocation practices and culturally created demands (e.g. de Bont et al., 2016; Mena-Vásconez et al., 2016).

THE WATER AND JOBS REPORT: THE UN NETWORK CONTEXT

The Report under review is the third annual WWDR published jointly by a number of UN agencies and other entities that make up UN Water. WWDRs were originally published tri-annually (since 2003); they were launched at the international World Water Forums (WWFs) initiated to report on global freshwater resources and, latterly, on the progress achieved towards realizing the Millennium Development Goals (Salman, 2003). Later WWDRs, however, have been much broader than originally foreseen. Some scholars argue that they have mobilized and legitimized the UN system knowledge as a strategic device lending credibility to a particular epistemological voice and authority (Littoz-Monnet, 2017).

WWDRs and attendant WWFs often skip the UN's long history of development debates, possibly as a result of water having been off the UN development agenda from roughly 1980 to 1995. Preceding this period of low engagement, a first conference on water had been organized in Mar del Plata in 1977, following the newly started practice of organizing mega-conferences on issues of global importance. The 1970s was declared the UN 'development decade'; besides elaborate discussions on how to 'ignite' economic progress in the newly decolonized countries in Africa and Asia, much emphasis was laid on national planning. The development plan was the means by which the nascent nations were being imagined and constructed. Thus, the nation state remained a central analytical category and political (f)actor in the UN throughout the 1960s and 1970s (Shah, 2009). The Non-Aligned Movement (which called for abstention from political alignment with or against any major power blocs) at the height of the Cold War culminated in the formation of the G-77 in 1971; during the 1970s, the G-77 exercised its considerable bargaining power to claim equitable access to science and technology and world resources for the developing countries in the South. The G-77 also challenged the disparity between the North and South by focusing on the historical reasons behind such inequality — colonialism (Rist, 2002). The Mar del Plata conference on water was organized at the height of this period of 'Third Worldism' and many scholars believe that the conference action plan, consisting of 12 resolutions, had a wide-ranging impact on the availability and use of water in developing countries (Biswas, 2004: 84).

After Mar del Plata, however, water slipped off the UN agenda for 15 years. Its next significant event on water — the International Conference on Water and Environment in Dublin in 1992 — kicked off the water-privatization trend: water as an economic good with competition, cost recovery and private investment. That same year, the UN Earth Summit on Environment and

Development in Rio de Janeiro mostly ignored water, except for the shoddily-drafted Chapter 18 of Agenda 21. While privatization was barely discussed in Rio, 10 years later it was the main paradigm in the World Summit on Sustainable Development in Johannesburg. This rise of privatization started in the 1990s against the backdrop of larger political and ideological change reflected in the formation of the Transnational Policy Network (TPN), which was heavily supported by the World Bank, World Water Council, Global Water Partnership, and a high-powered World Commission on Water in the 21st Century (Goldman, 2007).¹

The TPN's first landmark document was the well-circulated *Vision for Water* published by the World Commission on Water in the 21st Century, which unambiguously promoted water privatization: 'full-cost pricing of water services, with targeted subsidies for the poor' and 'governments as enablers, providing effective, transparent regulatory frameworks for private action' (Biswas, 2004: 84). This 'vision for water' resulted from extensive consultation among thousands of 'experts', a large epistemic community spread all over the world, and was launched at the second WWF (March 2000, The Hague). It blended the divergent ideas of many different professionals into one 'consensual' water vision, in effect globally standardizing expert water knowledge. The second WWF itself was not organized by an inter-governmental body such as the UN, but by an 'autonomous' network of professionals. In fact, a vast majority of the NGOs at the second WWF rejected the *Vision for Water* report, because the process of its preparation was not participatory and transparent (Salman, 2003: 497). At the WWF, views on large dams and the role of privatization were sharply polarized.

Between 2003 and 2012 four WWFs were organized; since 2014 they have become annual events. At the UN's Millennium Summit in 2000, 191 member countries agreed on eight goals to be achieved by 2015. These goals — the so-called Millennium Development Goals, or MDGs — although accepted by developing countries, were not initiated by the South, but were pushed by the US, Europe and Japan, co-sponsored by the World Bank, IMF and the Organization of Economic Cooperation and Development (OECD). The development of the MDGs involved no political participation by the South. However, the UN General Assembly adopted the MDGs by consensus; crucially, no debates were held concerning conditions for achieving them. Economic liberalism and a free market were assumed to be key, including privatization, uncritical respect for intellectual property rights of

1. The TPN is a relatively small, exclusive policy elite on water, representing different (distinctly Northern/international) institutions. It includes the World Water Council, established in 1996 (sponsored by both the UN and the World Bank), an international policy think tank, which was pivotal in organizing the second WWF in The Hague and the third WWF in Kyoto. It also includes the World Commission on Water in the 21st Century, the governance of which is in the hands of influential former heads of state, former and current senior World Bank officials, corporate leaders, UN officials and influential international development NGOs (Vos and Boelens, 2014).

transnational companies, and global North–South cooperation to establish an open, multilateral commercial/financial system.

The MDGs framed UN development activities from 2000 to 2015 (when they were replaced by the Sustainable Development Goals — SDGs). In 2005, the UN-appointed Millennium Project Task Force on Science, Technology and Innovations published a report (Juma and Yee-Cheong, 2005); this was prepared by some 250 experts whom the UN considered to be the ‘world’s leading practitioners’. This was an indication that UN policy making had become quite exclusive: for such wide-ranging and influential policy instruments, 250 experts is too few. More importantly, the drafting of the report entailed little interaction among the UN agencies, national governments, or representatives of non-governmental and intergovernmental organizations. Rather, it enshrined the universalist, market-oriented, depoliticized knowledge of this powerful elite group of experts. Some critics have accused the MDGs and associated programmes of pushing the priorities and interests of globalized capital (Amin, 2010). Others have severely criticized goal selection, making the ultimate aim of developing a ‘global partnership between North and South for development’ into an imperative for ‘promoting technocratic prioritisation of economic means’ (Khoo, 2005).

In 2002, the UN Economic, Social and Cultural Rights Committee recognized water as a human right, although this right is not enforced in international legislation. Several international NGOs have introduced similar language, while the wider UN, World Bank, WTO and IMF continue to promote privatization and cost recovery, undermining the right to water. An overwhelming majority at the second WWF urged the Ministerial Conference to recognize the human rights to drinking water and sanitation, but the Ministerial Declaration had already been drafted and was not changed (Biswas, 2004: 87). Since 2002, moreover, the leaders of the world’s water businesses have claimed that ‘water as a human right’ means that, if governments cannot offer universal service provision themselves, they must pay private sector water enterprises to supply water.

This knowledge-production system dominated by the UN promotes the views of a small global elite, highlighting free-market principles and disregarding uncomfortable diversity and complications. It is this context in which we evaluate this Report. Below we further discuss the three contradictions between Big D and little d development as emerging from the Report and as briefly mentioned in the introduction.

CONTRADICTION 1: IS ‘WATER-EXPERT KNOWLEDGE’ UNIVERSAL?

The Report’s analysis and policy recommendations rely on economic and technological ‘expert knowledge’, which is presumed to be universal: ‘we have endeavoured to present a fact-based, balanced, neutral account of the current state of knowledge’ (p. vii). It is now well documented, however, that

science and technology, and expert knowledge on water, can be ‘universal’ only in very specific contexts. Implicitly, in declaring universality of the expert knowledge, the world’s diverse, rich (indigenous and other rooted, vernacular) water cultures, ontological perspectives and epistemic frameworks are either given lip-service or dismissed or delegitimized (Bakker et al., forthcoming 2018; Boelens, 2015; Espeland, 1998). Many relevant groups with different water-management practices are ignored, such as peasant communities, indigenous peoples, irrigation and water-user federations, and drinking-water cooperatives. The authors of the Report claim an objective-outsider position, referring to it as ‘this factual report’ and claiming that it represents ‘*the* global perspective on water’ (title of Chapter 2, emphasis added) — while obviously there is no single global perspective on water. There are multiple competing perspectives on water and its value, operating at many levels, in many water cultures, and reflecting high degrees of complexity and hybridity, for example, intertwining elements from a human-rights perspective, a nature-conservation perspective, a water-justice perspective, or a Mother-Earth perspective (to name but a few).

This conveniently neglects the water-knowledge conflicts, discrepancies and incommensurabilities of the real world — little d development (Duarte-Abadía and Boelens, 2016; Espeland, 1998). The tradition of Big D development disconnects the ‘what’ from the ‘who’. This detached, ‘objective’ (god-like) expert position directly impacts the Report’s contents, which create a picture of uniform knowledge that ignores social inequities as irrelevant (Liebrand, 2014). Big D development interpretations portray the world as rational, universal and genderless, and it is assumed that experts themselves are free of interests, ideologies or biased framings.

It is interesting to note that the domain of the Report’s experts is traditionally that of economists — jobs, work and employment — and that the Report promotes mainstream economic ideas. Take, for instance, the Report’s definition of jobs: ‘Jobs are an individual’s set of tasks that will deliver work within a single enterprise, farm, community, household, or production unit, including self-employment’ (p. 31). This view reflects jobs as individual and productive expertise — a rational workforce (of men). Another definition in the Report claims: ‘Water jobs . . . are direct jobs in water sectors, mainly comprising: a) water resource management . . . ; b) building and managing water infrastructure; and c) providing water-related services [such as] water supply [and] sewerage’ (p. 32). For clarification, the Report also uses the term ‘water-dependent jobs’ to delineate work that uses water, saying that the role of water professionals (‘water jobs’) is to ‘help to create an enabling environment to create and maintain decent jobs across . . . the global economy’ (p. v). These quotes reveal a very traditional engineering view of managing and using water, a view which undoubtedly gains support from engineers and economists in the UN system, but fails to recognize that ‘those who work with water’ comprise a diverse set of people and communities working informally, including a large number of women, landless labourers

and landed farmers in the developing world, whose work, labour and resources mobilization cannot be expressed in such formal economic terms.

Further, 'Work is meant as any activity performed by any person to produce goods or to provide services for use by that person or others, irrespective of its formality or legality' (p. 31). These are recognized definitions, formulated by the 2013 International Conference of Labour Statisticians. Such definitions earn the Report credibility among UN economists, but they steer water-policy discussions in very normative, biased directions. The Report recognizes informal work, but ignores reproductive work, typically done by women. Women's labour contributions remain invisible, and the gender division of water-use labour and its capitalist connotations are a non-issue. The same goes for the liberal, individualistic equating of water-development work and 'jobs'. The Report seems entirely unaware that water control is necessarily collective in the world's vernacular, community-managed water systems, where 'work' in water control is not related to 'jobs' but refers to creating and maintaining customary water rights and strengthening human/water bonds (Boelens and Vos, 2014; de Bont et al., 2016). For example, Boelens and Vos (2014) systemize evidence from many regions in the world — Latin America, Asia, Africa, Europe and North America — where, historically and currently, thousands of smallholder communities invest their workforces to construct, repair and maintain irrigation and drinking water facilities, and thereby (simultaneously and as a direct consequence) build family and community water rights. This is reflected in the fundamental notion of building and confirming 'hydraulic property relationships' among water users that fortifies collective action, sustains self-governed irrigation systems and invigorates 'hydraulic cultures' (see, e.g., Boelens and Vos, 2014).

Faithful to Big D development, the Report implicitly treats knowledge rooted in Western modernization as universal, and useful for developing the South, whereas water problems are primarily caused by the Third World: 'freshwater withdrawals have increased globally . . . due to growing demand in developing countries. In much of the world's highly-developed countries, freshwater withdrawals have stabilized or declined' (p. 3). Such statements imply that the South is wasteful of water and should learn from the North, literally claiming that '[t]he international community [read: the global North] is already showing the way [forward]' (p. 8); this completely ignores the fact that the North imports many commodities from the global South, thus keeping their 'home' consumption stable by drastically increasing their 'virtual' water use (see Vos and Boelens, 2014). The EU27, for example, has 'externalized' 51 per cent of its virtual water footprint (Serrano et al., 2016: Table 1). Thus, the import of products (notably soy from Brazil and dairy products from Argentina) allows Europe to keep its domestic water use for agricultural production relatively low. Virtual water trade is presented as a coherent policy, as a Big D development idea, based on efficiency, the free market and comparative advantage (Hoekstra and Chapagain, 2008/2011).

However, from the perspective of little d development, one can observe that actual trade of virtual water is based on, for example, purchasing power of rich consumers and water grabbing, and can have very negative environmental and social impacts for producing areas (Vos and Boelens, forthcoming 2018).

Similarly, the Report conceptually links efficient water use, employment and prosperity. It is assumed that interventionist, Big D development water management will promote world stability and peace by creating employment using natural resources. In this way the Report revives US post-WWII thinking (Klingensmith, 2007). Ban Ki Moon's foreword states: 'water stress and the lack of decent work can exacerbate security challenges' and 'it also . . . leads to forced migration' (p. iv; see also Box 2.1 on p. 29). This signifies a linear thinking that water stress = no jobs = people migrating, which would mean a security challenge (and consequently a problem for the rich North). The Report fails to acknowledge that, in many places around the world, water scarcity and uncertainty are rooted in water grabbing by global agribusiness and extractive industries, and that (Big D) neoliberal water-privatization policies and legislation are in fact part of the problem causing 'slow violence' (Veldwisch et al., forthcoming 2018; Vos and Boelens, forthcoming 2018).

Indeed, this Big D development Report understands water apolitically. Chapter 12, for instance, discusses water conflicts and contestations, but promotes rational policy frameworks such as Integrated Water Resources Management (IWRM). It calls for more collaboration and national strategies, while many countries face elite capture by the state and/or by foreign states or corporate companies dominating natural resource management. Despite the volume of literature on the topic (Veldwisch et al., forthcoming 2018; Vos and Boelens, 2014), the Report fails to recognize that water management involves political struggle for water control. It blames protests against mining for obstructing economic development and job creation (see p. 86), when in fact these local communities' protests are reactions to serious deficiencies in democratic decision making that also involves (often violent) dispossession, ecosystem destruction and corruption.

CONTRADICTION 2: WHO BENEFITS FROM PPP, 'ECONOMIC GROWTH', JOB CREATION AND EFFICIENCY GAINS?

The Report proposes that Big D development intervention in the form of public-private investments in water infrastructure, as well as market competition and efficiency gains, will contribute to 'economic development' and will benefit the poor and the most vulnerable. The Report accordingly proposes public-private partnerships (PPPs) for building water infrastructure (e.g. pp. 14, 79, 90, 94, 100). The Executive Summary states (p. 4): 'Within a suitable regulatory framework, public-private partnerships (PPPs) offer

prospects for much-needed investment in water sectors, including building and operating infrastructure for irrigation and water supply, distribution and treatment'. What role is the government (state) expected to play? 'Governments can create policy frameworks to enable, support and reward improvements in resource efficiency or productivity, bringing increased competitiveness, resilience and security, and new sources of jobs and growth. By doing so, they can facilitate significant cost savings for different agents from improved efficiency and productivity, commercializing innovations, and enhanced water management over the entire product life cycle' (p. 6). However, a considerable scholarly literature has shown that vulnerable groups do not necessarily gain from abstract 'economic development', unless they gain a meaningful voice. This proposal is made in the name of 'social justice' (pp. vi, 74), but does not ask: social justice for whom? The Report assumes generic trickle-down and trickle-through effects and that economic growth is good for everybody (and the environment). But who wins and who loses with economic development? Efficiency gains can also mean jobs lost, especially for poor and less-educated workers. The Report mentions trade unions (pp. 56, 58), but more structural measures and changes are required; in many parts of the world workers are fired from jobs if they join unions, and being a union leader can even be life-threatening. Empowering vulnerable groups also goes beyond workers' unions, requiring efforts by NGOs, community organizations and government regulation and monitoring.

Moreover, the Report does not take into account that in practice, PPPs have posed numerous problems, lacking democratic control and accountability. Public partners often shoulder most investments and risks, while the private partners take relatively fewer risks and higher profits. Peru's big Olmos irrigation project is a PPP comprising a regional government and a private multinational company. It is planned to irrigate 43,000 hectares on the desert coast. But to build this dam, local goat-herder communities were evicted violently (Amnesty International, 2013). The main investments in the project totalled some US\$ 800 million; the regional government provided US\$ 450 million and major Brazilian construction company Odebrecht, which constructed the infrastructure, provided the other US\$ 350 million (Eguren, 2014). Only 10 companies bought land, at the very low average price of US\$ 4,723 per hectare. Eguren (*ibid.*) estimated that the project would yield Odebrecht a net profit of US\$ 464 million from selling land, water and energy over 50 years of operation. The Report under review views the regional government's loss of US\$ 328 million (at current market prices) as an 'investment' to create jobs — but more is lost than the total value of salaries earned by field labourers during these 50 years.

Similarly, Sanchis-Ibor et al. (2017) discuss examples from Spain to show the deeply problematic water-development impacts of PPPs. For instance, in Valencia's Senyera community, regional elites, an expert water company and the state agency set up a PPP to combat what they called the water crisis. These public and private partners entirely ignored the

community's history, knowledge and proposals. The company designed high-tech drip-technology systems, extremely expensive to construct and operate but mass-promoted and state-subsidized. The community was seduced into a Trojan-horse contract for the company to manage water for at least 10 years. The results were drastic (even applying universalist efficiency and profit criteria): farmers' operating and pumping expenses rose six-fold; fee payment was non-transparent; maintenance was neglected to boost company profits; crop production dropped; and the anonymous computer system replaced families' daily planning with the local water distributor. The community lost its authority and autonomy. Funded to improve self-governance, the project actually made the farmers dependent on buying the company's services, as they found the drip system too difficult to manage themselves (Sanchis-Ibor et al., 2017). A few large, absentee farmers benefitted by saving on irrigation labour costs, but the peasant majority found privatized, commodified management extremely harsh, losing their profit margins, trust and, worst of all, collaboration and autonomy.

Another fashionable mechanism advocated by the Report is Payment for Environmental Services (PES) (pp. 4, 27), promoted in many countries worldwide, including Costa Rica, Colombia, Ecuador, Mexico, South Africa, China and the Philippines. PES means downstream water users pay upstream land managers to implement water-conservation measures to increase base flow, reduce peak flows, and increase water quality, supposedly benefitting both parties. The Report entirely neglects mounting critiques of this 'alternative': there are no substantial benefits to upstream farmers — particularly the poorer ones with no income other than PES — only restrictions and loss of control (Büscher and Fletcher, 2015; Rodríguez-de-Francisco and Boelens, 2015). PES schemes seldom work as envisioned: downstream water users may not pay, PES does not improve water flows, and the schemes are subject to more government or NGO regulation and subsidies than voluntary free market schemes (Schomers and Matzdorf, 2013). PES bypasses and even destroys non-commodified water-based collaboration and livelihoods (Rodríguez-de-Francisco and Boelens, 2015).

Finally, the Report emphasizes increased water-use efficiency and productivity. It claims that investments and new water technology would enhance water security, foster economic growth and create jobs (Chapter 13). However, water leaking from distribution systems, irrigation canals and fields is often not actually wasted. Runoff and seepage water returns to surface or groundwater, to be used by others in the same watershed. For example, our own work suggests that while a wealthy farmer's drip irrigation system might increase production with the same amount of water on that field (higher field-level water productivity), less groundwater recharging will be available for other users. In such cases, overall watershed-scale production and water use does not change, but water is re-allocated to wealthier farmers (who then extend their area under irrigation). One group's increased water security might increase water *insecurity* for another group (Boelens and Vos,

2012). Of course, water is lost to evaporation and contamination, but claims of water efficiency and productivity gain should always be scrutinized for social and scaled effects.

Thus, the Report's second major contradiction is promoting economic development through Big D private investments, free trade, or market-environmentalist principles, and efficiency gains which are presumed to contribute to 'poverty reduction' and 'development', when in fact these principles actually pose a serious risk, weakening rather than strengthening the poor and vulnerable. The immanent water management outcomes at local level in the specific socio-economic context related to such private investments (little d development) are completely ignored by the Report.

CONTRADICTION 3: HOW REAL IS WATER SCARCITY?

The Report treats water scarcity as a 'natural problem' (or 'technical fact'), when actually water scarcity is socially produced by legislation, allocation practices and culturally created demand (Hommes and Boelens, 2017; Mehta, 2003). The Report uses the terms 'water stress' and 'water scarcity' in a technical sense, for instance as 'droughts', 'floods', 'natural hazards' (p. 12), or 'climate change and extreme events' (p. 24). As a solution, the Report proposes increasing supply through more infrastructure, new technologies, IWRM and other economic policies. For instance, p. 2 on the agri-food sector states that 'insufficient, erratic water supplies affect . . . employment in the agri-food sector', calling for more water sector investments. The same call is repeated on p. 4: 'investing in water is investing in jobs'. Africa needs more infrastructure (p. 4); the Arab region, more efficient water use (p. 5); Asia, more energy production (p. 5); the EU and US need only repair infrastructure (p. 6); Latin America and the Caribbean must address institutional issues (p. 6) — all to increase supply and/or rational water management, creating infrastructure or an enabling environment. The Report understands 'scarcity' as a product of 'hydrological variability and high human use' (p. 18), glossing over power disparities and social inequities in accessing water. The 'water entitlement decision-making process' (p. 28) is portrayed simply as a set of rational, consultative, logical choices, ignoring critical issues of power, representation and voice (see Duarte-Abadía and Boelens, 2016; Espeland, 1998; Shah, 2009).

More water investment is understood to mean more infrastructure: 'Investing in infrastructure and operating water-related services can improve high returns for economic growth and for . . . job creation' (p. 89). Investing in water resources is understood as producing a legal-institutional framework, more-centralized planning and monitoring; basically, demanding top-down water management. These themes are elaborated in Chapters 15, 16 and 17, which objectify 'scientific and technological innovation' as infrastructure creation. Such infrastructure building is understood as a purely centralized

technical solution to social problems, ignoring the large, crucial investments farmers make in order to create and maintain water management infrastructure. Beyond governmental and private commercial sector investments, farmers in Asia, Africa and Latin America, as in Europe and other Western countries, invest labour, money and other resources in infrastructure (Boelens and Vos, 2014; Sanchis-Ibor et al., 2017; Woodhouse et al., 2017).

Here, again, the Report's biased Big D interventionist focus on formalized knowledge, officially accredited norms and institutions, and expert knowledge, ignores the actual on-the-ground water realities, water cultures and power contradictions — little d development.

CONCLUSION

This Assessment has discussed the UN Report, *Water and Jobs* as part of a universalized policy process advancing mainstream expert framings of water issues, and demonstrated how it renders invisible uncomfortable undercurrents, diverse and often complicated ground realities of local struggles. Our main concern is to show how the Big D development interventionist politics helps a small global policy elite to steer expert discussions and water policies in a normative, narrow direction. It is based on neglecting and ignoring the way that immanent development — the result of a set of capitalist processes — takes place in an uneven and uncertain fashion in specific contexts (little d development). We have shown how the Report articulates the UN system's currently dominant understanding of more (public–private) investments, increased efficiency and productivity, and increased competition leading to (green) economic development, benefitting all. We have also shown that this reasoning contains major contradictions and is thus highly problematic.

REFERENCES

- Amin, S. (2010) 'The Millennium Development Goals: A Critique from the South', *Monthly Review* 57(10): 1–15.
- Amnesty International (2013) 'Fuente de vida: Visita a la comunidad La Algodonera en Olmos' ['Source of Life: Visit to the Community La Algodonera in Olmos']. AIPeru, YouTube video. www.youtube.com/watch?v=IpThsDAG4bY
- Bakker, K., R. Simms, N. Joe and L. Harris (forthcoming 2018) 'Indigenous Peoples and Water Governance in Canada: Regulatory Injustice and Prospects for Reform', in R. Boelens, T. Perreault and J. Vos (eds) *Water Justice*. Cambridge: Cambridge University Press.
- Biswas, A. (2004) 'From Mar del Plata to Kyoto: An Analysis of Global Water Policy Dialogue', *Global Environmental Change* 14(S): 81–88.
- Boelens, R. (2015) *Water, Power and Identity. The Cultural Politics of Water in the Andes*. Abingdon and New York: Routledge.
- Boelens, R. and J. Vos (2012) 'The Danger of Naturalizing Water Policy Concepts: Water Productivity and Efficiency Discourses from Field Irrigation to Virtual Water Trade', *Agricultural Water Management* 108: 16–26.

- Boelens, R. and J. Vos (2014) 'Legal Pluralism, Hydraulic Property Creation and Sustainability: The Materialized Nature of Water Rights in User-managed Systems', *COSUST* 11: 55–62.
- de Bont, C., G.J. Veldwisch, H.C. Komakech and J. Vos (2016) 'The Fluid Nature of Water Grabbing: The On-going Contestation of Water Distribution between Peasants and Agribusinesses in Nduruma, Tanzania', *Agriculture and Human Values* 33(3): 641–54.
- Büscher, B. and R. Fletcher (2015) 'Accumulation by Conservation', *New Political Economy* 20(2): 273–98.
- Cowen, M. and R. Shenton (1996) *Doctrines of Development*. London: Routledge.
- Duarte-Abadía, B. and R. Boelens (2016) 'Disputes over Territorial Boundaries and Diverging Valuation Languages: The Santurban Hydrosocial Highlands Territory in Colombia', *Water International* 41(1): 15–36.
- Eguren, L. (2014) 'Estimación de los subsidios en los principales proyectos de irrigación en la costa peruana' ['Estimation of Subsidies in the Main Irrigation Projects on the Peruvian Coast']. Lima: CEPES.
- Espeland, W. (1998) *The Struggle for Water. Politics, Rationality, and Identity in the American Southwest*. Chicago, IL: University of Chicago Press.
- Goldman, M. (2007) 'How "Water for All!" Policy Became Hegemonic: The Power of the World Bank and its Transnational Policy Networks', *Geoforum* 38(5): 786–800.
- Hoekstra, A.Y. and A.K. Chapagain (2008/2011) *Globalization of Water: Sharing the Planet's Freshwater Resources*. Oxford and Malden, MA: Blackwell Publishing.
- Hommel, L. and R. Boelens (2017) 'Urbanizing Rural Waters: Rural–Urban Water Transfers and the Reconfiguration of Hydrosocial Territories in Lima', *Political Geography* 57: 71–80.
- Hart, G. (2001) 'Development Critiques in the 1990s: *Culs-de-sac* and Promising Paths', *Progress in Human Geography* 25(4): 649–58.
- Juma, C. and L. Yee-Cheong (2005) *Innovation: Applying Knowledge in Development: Achieving the MDGs*. London: Earthscan.
- Khoo, S. (2005) 'The Millennium Development Goals: A Critical Discussion', *Trocaire Development Review* 2005: 43–56.
- Klingensmith, D. (2007) *'One Valley and a Thousand'*. Dams, Nationalism and Development. New Delhi: Oxford University Press.
- Liebrand, J. (2014) 'Masculinities among Irrigation Engineers and Water Professionals in Nepal'. PhD thesis, Wageningen University.
- Litton-Monnet, A. (2017) *The Politics of Expertise in International Organisations: How International Bureaucracies Produce and Mobilize Knowledge*. Abingdon: Routledge.
- Mehta, L. (2003) 'Contexts and Constructions of Water Scarcity', *Economic and Political Weekly* 38(48): 5066–72.
- Mena-Vásquez, P., R. Boelens and J. Vos (2016) 'Food or Flowers? Contested Transformations of Community Food Security and Water Use Priorities under New Legal and Market Regimes in Ecuador's Highlands', *Journal of Rural Studies* 44: 227–38.
- Rist, G. (2002) *History of Development: From Western Origins to Global Faith*. London: Zed Press.
- Rodriguez-de-Francisco, J.C. and R. Boelens (2015) 'Payment for Environmental Services: Mobilising an Epistemic Community to Construct Dominant Policy', *Environmental Politics* 24(3): 481–500.
- Salman, S. (2003) 'From Marrakech through The Hague to Kyoto: Has the Global Debate on Water Reached a Dead End?', *Water International* 28(4): 491–500.
- Sanchis-Ibor, C., R. Boelens and M. García-Mollá (2017) 'Collective Irrigation Reloaded. Re-collection and Re-moralization of Water Management after Privatization in Spain', *Geoforum* 87: 38–47.
- Schomers, S. and B. Matzdorf (2013) 'Payments for Ecosystem Services: A Review and Comparison of Developing and Industrialized Countries', *Ecosystem Services* 6: 16–30.
- Serrano, A., D. Guan, R. Duarte and J. Paavola (2016) 'Virtual Water Flows in the EU27: A Consumption-based Approach', *Journal of Industrial Ecology* 20(3): 547–58.

- Shah, E. (2009) 'Manifesting Utopia: History and Philosophy of UN Debates on Science and Technology for Sustainable Development'. STEPS Working Paper No. 25. Brighton: STEPS Centre, Institute of Development Studies.
- Swyngedouw, E. (2013) 'UN Water Report 2012: Depoliticizing Water', *Development and Change* 44(3): 823–35.
- Veldwisch, G.J., J. Franco and L. Mehta (forthcoming 2018) 'Water Grabbing: Practices of Contestation and Appropriation of Water Resources in the Context of Expanding Global Capital', in R. Boelens, T. Perreault and J. Vos (eds) *Water Justice*. Cambridge: Cambridge University Press.
- Vos, J. and R. Boelens (2014) 'Sustainability Standards and the Water Question', *Development and Change* 45(2): 205–30.
- Vos, J. and R. Boelens (forthcoming 2018) 'Neoliberal Water Governmentalities, Virtual Water Trade, and Contestations', in R. Boelens, T. Perreault and J. Vos (eds) *Water Justice*. Cambridge: Cambridge University Press.
- Woodhouse, P., G.J. Veldwisch, J.P. Venot, D. Brockington, H. Komakech and A. Manjichi (2017) 'African Farmer-led Irrigation Development: Re-framing Agricultural Policy and Investment?', *The Journal of Peasant Studies* 44(1): 213–33.
- World Commission on Water in the 21st Century (2000) *A Water Secure World: Vision for Water, Life and Environment*. Marseilles: World Commission on Water in the 21st Century.

Esha Shah (corresponding author: esha.shah@wur.nl) is Assistant Professor at the Water Resources Management Group at Wageningen University, The Netherlands. Her research is focused on the history and anthropology of technology related to development and globalization in India.

Janwillem Liebrand (janwillem.liebrand@wur.nl) is Postdoctoral Researcher at the Water Resources Management Group, Wageningen University, The Netherlands. He is currently involved in a research project on farmer-led irrigation in Mozambique.

Jeroen Vos (jeroen.vos@wur.nl) is Assistant Professor at the Water Resources Management Group, Wageningen University, The Netherlands. He worked for 10 years as water policy advisor in Peru and Bolivia. His research interests include the dynamics resulting from water use by agribusinesses.

Gert Jan Veldwisch (gertjan.veldwisch@wur.nl) is Assistant Professor of Water and Development at the Water Resources Management Group, Wageningen University, The Netherlands. His current research focuses on irrigation development in sub-Saharan Africa, particularly around corporate agriculture and farmer-led development.

Rutgerd Boelens (rutgerd.boelens@wur.nl) is Professor of the Political Ecology of Water in Latin America, CEDLA/University of Amsterdam, and Professor of Water Governance and Social Justice, Wageningen University, The Netherlands. He is currently Visiting Professor at the Catholic University Peru and Central University Ecuador. He directs the international Justicia-Hídrica/Water-Justice alliance (www.justiciahidrica.org).