

## CHAPTER 5

### WATER: A GLOBAL CONTESTATION

Edited by Willemijn Dicke and Fiona Holland with contributions from Patrick Bond, Fadia Daibes-Murad, Sanjeev Khagram, Alessandro Palmieri, Carlos B Vainer, Zoë Wilson and Patricia Wouters

#### Introduction

##### Willemijn Dicke

Everyone needs water, for drinking and for growing food, and in many cases we need protection from it, primarily against flooding. Each of these human needs requires the active management of water resources that, as this chapter illustrates, is a site of increasing contestation between politicians, scientists, corporations, civil society activists and water managers.

The worldwide community of water professionals has spoken of a water crisis at least since the 1990s (Gleick 1993). Water resources have become more scarce, and the risks of flooding have increased. Political conflict over water has grown steadily. As a result, water issues have moved into the domain of 'high' politics (Bernauer 1997: 192), ambassadors have been recalled in protest and heads of government have become embroiled in water crises.

Water professionals say that these crises will multiply and intensify in coming decades as a consequence of both environmental factors and political developments. First, the effects of climate change, a burgeoning world population, and expanding industrialisation and urbanisation will make clean water increasingly scarce. As Gleick (1993: 10) points out, a key issue in the twenty-first century will be 'how to satisfy the food, drinking water, sanitation and health needs of ten or twelve of fifteen billion people, when we have failed to do so in a world of five billion'. Second, climate change and rising sea levels will demand new measures for protection against flooding. The idea has taken root that higher dikes and firmer dams are insufficient to guarantee long-term safety under these changing conditions. A new and more sustainable approach is needed.

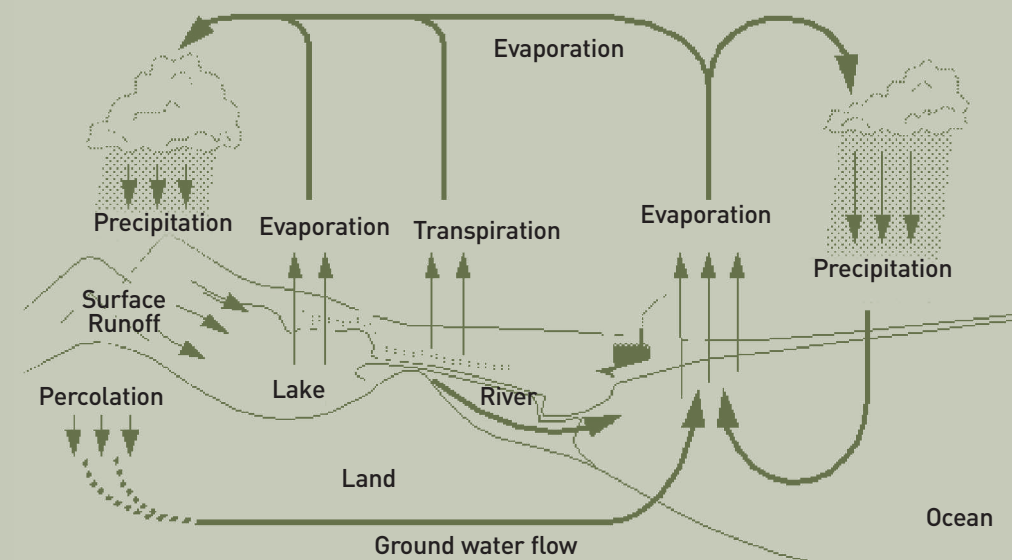
With greater awareness of the seriousness of the crisis has come an increased demand for more effective governance. Professionals and scientists agree that water should be managed in a more

comprehensive manner. Underpinning this approach is the belief that every major intervention in the water system will have effects elsewhere (Kooiman and Warner 2000): pollution, floods, dams, drinking water, bathing water and irrigation are interrelated. 'Comprehensive water management' requires that the entire water system is taken into account (see Figure 5.1). According to this perspective, water is a global resource (Abu-Zeid 2000), a global public good (Kaul, Grunberg and Stern 1999), a global common (Buck 1998), or even a common heritage of humankind (Abu-Zeid 2000; Petrella 1999).

This global perspective on water resources has important consequences for their governance. In the past, nation states claimed sovereignty over the water resources within their territory, and management was organised within territorial boundaries. The notion of 'comprehensive water management', requiring a holistic approach, has challenged the pivotal position of the nation state. If the nation state is rejected as the natural unit of governance of water, how then should it be managed? Whose water is it anyway, if national boundaries no longer define 'ours' against 'theirs'? What is the appropriate unit of governance? What values should water management espouse? Often, if not always, values such as public health, safety, and sustainability conflict with the various uses of water, for example, irrigation, drinking water supplies and shipping. How, if at all, can these uses be prioritised?

In the search for answers to these questions, scientists, water managers and politicians have something in common: increasingly they are turning to global civil society. The underlying reason is recognition of the global dimension of water resources (Dicke 2001). When water resources were considered a national public good, the nation state was thought to be the appropriate agent for their provision to the citizenry. But in the case of global public goods, collectivity cannot be equated with the citizens of a country. The benefits of global public

Figure 5.1: The natural water cycle



Source: Erich Roeckner, Max Planck Institute for Meteorology

This diagram depicts the water cycle in which rain and snow is transported through lakes, rivers and ground water to the ocean, where evaporation leads to precipitation again. Linked to this natural system is the chain of uses and users of water. The first step of the water chain is composed of securing, treating and distributing water. The second step is consumption of water - for drinking, irrigation or cooling industrial machinery. In the third step, water is collected, again for treatment, and also for draining off. Eventually, the water is led back to the environment, where step one starts again. Besides water for drinking and industrial purposes, other uses of water, such as for fishing, recreation and navigation, influence the natural system.

Water management comprises supervision of both the natural cycle and the chain of use(r)s, a task complicated by many, often conflicting interests, involved, from agriculture, conservation and fisheries to drinking water supply, security from flooding, and navigation. They are intimately linked through the natural water cycle and therefore safeguarding one interest will affect another. For example, drainage should be balanced in order to avoid depletion of the soil, yet at the same time drinking water delivery needs to be guaranteed; farmers prefer a ground water level that is not optimal for the adjacent nature reserve.

goods are quasi-universal in terms of countries, people and generations (Kaul, Grunberg and Stern 1999:3), and this necessitates a redefinition of collectivity: no longer the inhabitants of a country, but humankind as a whole.

Perhaps the most visible evidence of these attempts to redefine collectivity in water management is the growing importance of NGOs (see Record 16) and the existence of cross-border water regimes governing many rivers and coastal zones. Yet another instance of global civil society consists of transnational corporations (TNCs) that are responsible for drinking water supply and sewage services. For many, TNCs are not part of

global civil society. For this author, however, global civil society consists of the interplay between various forces and institutions including nation states, private agents, transnational corporations, transboundary organisations, financial institutions and international organisations.

The global contestation over water includes many issues. Global and local movements collide with nations and intergovernmental bodies over ocean-related issues (for example, protection of the environment, fishery, shipping, prevention of floods); TNCs compete for contracts to provide drinking water and sewage services to local markets; local and global movements conflict over large infrastructure projects,

most notably dams; and the worldwide community of water professionals disagree about climate change - is it happening and if so what would be the effect on flood risks and what measures should be taken? The list of issues could be much longer.

In this chapter we have chosen three debates about water resources to illustrate the attempts to redefine collectivity. These themes have been selected because they are relatively accessible to a broad audience, not only water experts, and they reflect the variety of issues at play between global civil society and the global contestation over water. To name a few: the North-South division, the tension between local and global NGOs, the interplay between state and non-state actors, the relationship between public and private parties, and the difficulties of accountability and representation.

Several authors with different perspectives debate three issues: the privatisation of drinking water supplies, water resources as a source of international conflict, and the construction of dams. In each instance, the importance of the nation state is shown to have declined, while that of global civil society has increased, with varying degrees of involvement and influence in water management.

I provide a short introduction to each topic, and in the conclusion to the chapter lessons are drawn from the three debates about how, to what extent and under what conditions, global civil society can contribute to solving the water crises.

### Privatisation and transnational corporations

The first debate, privatisation, is about drinking water: can its provision be commodified? Some groups argue that water is a public good while others argue that public funds often do not suffice to provide this public service, and that both developed and developing countries would be better off privatising drinking water services.

Theoretically speaking, there are no reasons why water should or should not be privatised. Only collective goods cannot be privatised. Collective goods are defined partly by their non-excludability: no one can be excluded from receiving them. The provision of drinking water is not a pure collective good: customers can literally be disconnected from drinking water. But theory cannot solve the issue of privatisation. In practice, so-called private goods can be provided by the state. These are often called

merit goods. They are socially so desirable that public laws authorise their provision to citizens without payment or with subsidy - for example, free education. The decision about whether or not a particular private good is classified as a merit good is a political decision, and is not based on the nature of the good (Rose 1987: 219).

Around the globe, and in historical perspective, the provision of drinking water varies widely. In some countries drinking water companies are completely privatised, for example in the UK, while others require drinking water companies to remain in public hands, as is statutory in the Netherlands.

Due to several factors (see Finger and Allouche 2002), financial pressure on public authorities in the water sector has increased since the mid-1990s. Such pressures have encouraged privatisation, both in developed and in developing countries, as private firms are often considered sources of capital.

The debate about the privatisation of drinking water illustrates how global civil society has put the role of the national state in perspective. Increasingly, drinking water and sewage services are provided by privatised companies. Often, these companies are part of a transnational corporation, such as Veolia and Suez. In reaction, local and global NGOs and especially social movements have entered the scene, and their activities and influence are discussed by Patrick Bond and Zoë Wilson.

### Water conflicts

Although the intensity and length of water conflicts around the world vary, transboundary water disputes are a serious problem, and, due to the increasing scarcity of fresh water in combination with the growth in world population, will remain so in the next decades. The question is, as water conflicts move into the realm of 'high politics', will there be less space for civil society politics? The debate over water as a source of conflict reveals two important aspects of global civil society in relation to water. First, global civil society has manifested itself through international law. NGOs have played a major role in developing and implementing international law. Second, there are important cross-border water regimes. These are non-nation state agencies, such as river authorities, in which collectivity is no longer equated with the nation state. Instead of territorial

boundaries, water itself has become the ordering principle in the formation of the collectivity. Alongside ministries and provinces, NGOs contribute to the governance of the river. Cross-border water regimes are shaped by the interplay between state actors and NGOs. One example is La Plata River Basin, one of the most important river basins of the world, draining approximately one-fifth of the South American continent, extending over some 3.1 million km<sup>2</sup>, and conveying waters from central portions of the continent to the south-western Atlantic Ocean (OAS 2005:1). Another example of cross-border river regimes is the International Commission for the Protection of the Rhine (ICPR URL), which cooperates with states, other intergovernmental organisations and NGOs. Through the ICPR, the Rhine-bordering countries of Germany, France, Luxemburg, the Netherlands, and Switzerland, and the European Community are united in order to discuss problems of water protection and to seek common solutions.

### Dams

NGOs play a role not only in cross-border water regimes. They are very influential in other debates over water, for example, the construction of dams. Here, grassroots organisations, regional movements and international NGOs (see Record 16) have become increasingly important players in recent years.

'Narmada' has become almost iconic as an example of civil society influence. The Save the Narmada Movement opposed the construction of large dams on the River Narmada in central India because it would have affected the millions of people living in the valley.

For some, civil society has contributed positively to the debate; for others it has 'fuelled' it through vehement protests against the construction of the dams. Whether for or against the movement, both sides share the view that NGOs have reshaped the way in which decision making over such large and radical measures should take place. Both advocates and opponents of the anti-dam movements claim that the campaigns of these organisations have opened up spaces and processes for the involvement of stakeholders, and for a broader and integrated decision-making process on dams. Some criticise the influence of Northern issues and Northern NGOs on local, Southern anti-dam movements. The authors in this

debate discuss whether the influence of NGOs is, on the whole, a good or a bad thing.

### Debate 1

**Overall, ordinary people and civil society benefit from the privatisation of drinking water supplies and sewage systems**

#### Patrick Bond

No one can deny that drinking water in the Third World, as well as many Northern cities, requires vast new investments and better management. An estimated 2.6 billion people lack adequate sanitation, and 1.1 billion lack access to 'improved' water sources. There is an urgent need for dramatic improvements in water investment, management and affordability. Third World states have shrunk during the past quarter-century of sustained structural adjustment, addled by debt payment outflows, capital flight and foreign aid cutbacks, as well as neo-liberal ideology.

Given that the resources required for water and sanitation cannot often be found, due to prevailing power relations in the budgetary process, arguments for privatisation usually start with the capital infusions that large transnational firms (such as Veolia, Suez, Biwater and Bechtel) can supply. In addition, these firms bring technological capacities and have an incentive to reduce system leaks and inefficiencies.

In contrast, the strategy adopted by the more radical civil society groups - especially 'water warriors' in major anti-privatisation campaigns - has been to defend the state as the key institution for delivering water. To be sure, there are vast problems with relying on the state (whether national or municipal), given Third World governments' propensity to ignore the needs of poor citizens. Yet in most societies it remains the main institution with the capacity to organise purified, high-pressure water in sufficient quantities to serve gender equity, public health and other broader eco-social goals. Privatised water suppliers have no interest in such public goods, and the cost of the imported capital includes heavy profit outflows in often very scarce foreign currency. Critics also argue that the trend towards private outsourcing - including some examples of NGO delivery - has been destructive because standards are lower, prices are higher, disconnections are more common, maintenance is worse and accountability is harder to establish.

The water privatisation trend became dominant around 1992, when both the Rio Earth Summit and Dublin World Water Forum espoused the principle that water is 'an economic good'. However, by the time of the Hague World Water Forum in 2000, enough adverse experiences had accumulated in commercialised water systems that a broad-based set of water movements emerged to fight back (Box 5.1). By 2003 in Osaka and 2006 in Mexico City, the Forums witnessed large-scale demonstrations by civil society activists.

Often the water battles boil down to the controversial role of specific corporations, such as Bechtel in Cochabamba or Suez in Buenos Aires and Johannesburg. In early 2006 Bechtel finally dropped its World Bank compensation lawsuit against the Bolivian people following its expulsion six years earlier, but the intervening period demonstrated how hard it was for a Third World municipal supplier without sufficient resources to extend the grid, no matter how progressive the management of the water agency. The 2005 election of an anti-neo-liberal, indigenous-led Bolivian government is likely to improve Cochabamba's water system.

Likewise, Suez was kicked out of Buenos Aires in 2005 because it insisted on increasing water tariffs beyond consumers' ability to pay. In 2006 the firm's Johannesburg affiliate was sued by South Africa's Campaign Against Water Privatisation for violating constitutional water rights, on the grounds that prepaid water meters installed in Soweto are 'self-disconnection' devices.

In early 2006, the European Union's attempt to have water included within the World Trade Organisation's General Agreement on Trade in Services appeared to falter, based largely on strong alliances between Third World movements and Scandinavian activists. Water activists are also fighting against commodification more generally, even when a foreign business or the World Bank are not the main enemies.

These are the kinds of campaign that will resonate for years and in the process generate a formidable transnational network of water warriors who share information and campaigns, given that in so many cases they find themselves up against the same global financial institutions, aid agencies and corporations. But it is also likely that, notwithstanding some occasional defensive victories, the movements' more durable successes will only follow shifts in

national power and the redirection of increased state resources into water and sanitation, among other needed social goods and services. International solidarity by global civil society is a crucial ingredient along the way, as Bolivia shows.

Because these movements have, since the late 1990s, often generated superb examples of sectoral cooperation across borders, in the process addressing gendered, racialised, class and ecological inequalities in overlapping and interlocking ways, their campaigning against commodified water will continue to serve as a model for global civil society. In sum, I disagree with the proposition and anticipate that by combining defensive reactions against privatisation with growing state influence over governments (such as in Bolivia and Venezuela), civil society will enhance the ability of states to supply water and sanitation properly, and with increasing elements of community and worker control.

### Zoë Wilson

In face of the looming global water scarcity and contamination crisis and related development targets, such as the Millennium Development Goals, it is important to complicate our understanding of public and the private sectors and steer clear of over-stylised 'privatisation' debates. Helpful also is a pragmatic focus on delivery and treatment systems, and the potential for private sector and civil society actors to contribute to solutions at multiple points in the water access and sewage treatment cycles - at various scales and under various conditions of potable water scarcity. There are three main reasons. First, water and sanitation solutions require technologies and infrastructures. This is, in fact, the key challenge. Second, conventional water systems were developed 'when little was known about the fundamental physics and chemistry of the subject and when practically no applicable microbiology had been discovered' (Feachem et al. 1983: 63-4), and have since revealed their deep ecosystem impacts. Thus, systems are also in need of innovation. Third, in the developing world, it is hard to escape the fact that relying on government alone to solve urgent water and sanitation problems has not been successful. In this light, there are at least five key limitations to the anti-privatisation position.

First, the movements that Bond refers to tend to draw distinctions between 'public' and 'private' in ideal

### Box 5.1: Contestants in the water privatisation debate

#### For

The pro-privatisation lobby often assembles at the triennial World Water Forum - at The Hague in 2000, Kyoto in 2003 and Mexico City in 2006 - and related meetings of the water establishment such as the World Trade Organization. The major lobbies include the Global Water Partnership, created by the World Bank, UNDP and Swedish aid; the World Water Council, founded by Suez, Canadian aid and the Egyptian government, and joined by 300 private companies, government ministries and international organisations; the International Private Water Association, formed of companies, the World Bank, US Credit Export Agency and Overseas Private Investment Corporation, and the European Bank for Reconstruction and Development. Other key pro-privatisation lobbies include the World Bank, which imposed privatisation as a loan condition in a third of water projects worth \$20billion during the 1990s; Britain's Department for International Development, repeatedly accused of using the Adam Smith Institute to privatise Third World water; Mikhail Gorbachev's Green Cross, in ongoing dispute with the Council of Canadians over global-scale water rights and property rights in the UN; AquaFed, a federation set up by a former Suez managing director; and the World Panel on Financing Infrastructure. The latter was chaired by former IMF managing director Michel Camdessus in 2002-3, with major multilateral development banks, Citibank, Lazard Freres, the US Ex-Im Bank, private water companies, state elites from Egypt, France, Ivory Coast, Mexico, and Pakistan, and two NGOs, Transparency International and WaterAid. Its main advice was to make much greater amounts of public money available to privatisers, including via a risk-insurance mechanism to safeguard companies like Suez against currency crises that devastated the firm's Argentina operations after 2001. Finally, some NGOs, such as WaterAid, members of Freshwater Action Network, the Pacific Institute or South Africa's Mvula Trust, find themselves uncomfortably straddling the divide between the establishment and mass popular movements, given that they have been accused occasionally by activists of betraying the struggle to reduce water prices and raise standards and institutional delivery systems.

#### Against

Civil society forces opposed to the privatisation of water supplies include the Council of Canadians in Ottawa (Barlow and Clarke 2002), Public Citizen (2003a; 2003b) in Washington, and the World Development Movement and War on Want in Britain. Trade unions, indigenous people's movements and environmental groups, particularly the International Rivers Network and Friends of the Earth (2003), are also active on the issue. A host of think tanks are involved, including the PSI Research Unit at Greenwich University, Polaris Institute (2003) in Ottawa, the Transnational Institute's (2005) Corporate Europe Observatory in Amsterdam, the Municipal Services Project in South African and Canadian universities (McDonald and Ruiters 2005), Parivartan, and the Centre for Science and the Environment in New Delhi, Food and Water Watch in Washington (Grusky and Fiil-Flynn 2004), and the International Forum on Globalization in San Francisco. In addition, high-profile community leaders, politicians and intellectuals have become involved, many from urban community revolts against privatisation, from Detroit, Atlanta and several French cities, to Accra, Dar es Salaam and Soweto in Africa, Cochabamba and El Alto in Bolivia, and the cities of Buenos Aires, Manila, Jakarta and Auckland (Petrella 2001; Shiva 2002). In Vancouver, a 2001 'Blue Planet' conference gathered activists. In Delhi the 2004 People's World Water Forum (2004) aligned the various movements on analysis and common targets. The Red Vibe network of anti-privatisation activists links Latin America, as demonstrated convincingly at the 4th World Water Forum in Mexico City where the Reclaiming Public Water global network was born. The World Social Forum (in Porto Alegre, Mumbai and Nairobi), as well as regional social forums, provide spaces for water activist assemblies. Email listserves such as 'water warriors', 'reclaiming public water' and 'right to water' permit information exchange and coordination.



terms, and in the process exaggerate similarities between Northern and Southern states while failing to fully engage with developing country states on their own terms. It is true, as Bond notes, that both Cold War geo-politics and the debt crisis of the 1980s and 1990s constrained developing country resources and priorities, and in the process intensified the split between 'the public' and those 'who in fact rule'. Yet developing countries also have endogenous social, political and economic configurations and processes to bear in mind. Landscapes of power and influence differ significantly from those of the water-rich industrialised world in ways that are not well captured in the analyses of 'water-warrior' movements that assume that, under popular mobilisation pressures, developing country governments will simply realise their obligation to roll out sustainable, piped pressurised water and sanitation services to all.

This lesson has been hard learned, as Berkeley environmental physicist Ashok Gadgil (2004: 214) has noted. The paradox of water sector development assistance is that, while since the mid-1980s key multilateral forums and national strategy documents have recognised water as a human right, investment and aid are still being 'funneled into supplying water to those who had political access or political voice in the developing world'. Free-flowing budget support rarely translates into a lived experience of water rights, and at this stage the case for strengthening the role of already failing bureaucracies, which Bond advocates, is uneven at best. Rather, as Gadgil notes, such strategies have 'led to huge incompetence and inefficiency in the supply management of water systems in the developing countries' (2004: 214).

Attesting to the complicated relationship between idealism and realism is the sad postscript to perhaps the most celebrated anti-privatisation action, which in 2001 saw the Bolivian government cancel its contract with water giant Bechtel.

*Today, water is again as cheap as ever, and a group of community leaders runs the water utility, Semapa. But half of Cochabamba's 600,000 people remain without water, and those who do have the service enjoy it only intermittently - some as little as two hours a day, the fortunate no more than 14. 'I would have to say we were not ready to build new alternatives', said Oscar Olivera, who led the movement that forced Bechtel out. (Forero 2005)*

The second limitation is that the anti-privatisation critique rests mainly on contentious evaluations of

'first tier' companies, such as Suez, Vivendi and Bechtel, and their high-profile, high-risk interventions into domestic water service provision (notwithstanding, for example, Vivendi's successful water recycling partnerships). In the process, the lobby tends to misrepresent the landscape and overlook other forms and scales of private sector involvement - as well as the intricate interplay between various types of actors.

In the Northern fringes, these include a wide variety of small- to medium-sized enterprises that inject dynamism and innovation into the sector, fill supply-chain gaps and serve as a reservoir of competitive expertise on everything from rainwater harvesting to water-free sanitation options. Private sector actors lead the way in waterless and composting toilets while challenging deeply entrenched social norms - at both individual and institutional levels - around waterborne sanitation, while boasting lower installation, water and sewer, and maintenance costs than conventional waterborne technologies. Similarly, alternative technology industry-trade associations such as World Toilet Organisation and Dry Toilet clubs are at the forefront of lobbying for more latitude for ecologically friendly and water-free technologies in Scandinavian and European Union regulatory frameworks.

In the South, alternative technologies are often closer to the core of people's experience. Commercial technologies such as the Treedle pump, simple water filtration units and rainwater harvesting and storage units are important everyday technologies finding wide support among international civil society and media, including *National Geographic*, the *International Herald Tribune* and *Scientific American*; philanthropic organisations such as the Ford Foundation; international NGOs such as International Development Enterprises and WaterAid; and multilaterals such as the International Water Centre. Inventors and entrepreneurs also have a role. For example, in India, following the Grameen phone model, Emergence Energy is exploring the viability of fostering networks of entrepreneurs to make affordable and widely available the Slingshot - a water purification device that separates clean water, even from black water, by vaporising it. The informal sector also has innovations not to be dismissed lightly. In Mozambique, for example, entrepreneurial informal-sector operators now serve close to 50 per cent of

households with piped water in and around the capital of Maputo. Thus, privatisation cannot be equated with 'Suez' or 'Vivendi'.

Third, as Box 5.1 illustrates, anti-privatisation debates tend to overlook actors that threaten to blur distinctions between private sector and civil society found in a range of innovative partnerships and networks. These include relatively new forms, such as social entrepreneurship and other unorthodox cross-sectoral partnerships and multidisciplinary global knowledge networks. These work to develop important 'off the grid' options against the grain of sometimes misguided state interventions, as well as innovative solutions useful at multiple levels, including the small community and individual levels. Here, engineering and architectural firms form part of an important technical and innovation system. While frontier technologies are open to the accusation of being second-class technologies, importantly they also work to provide solutions where no other actors, including the state, operate, and where existing mainstream technologies are inappropriate. They also, increasingly, produce ambitious results at scale, in both developing and developed worlds, attested to by the development of eco-villages such as China's Tangye New Town, which is being designed to house 180,000 people and provide services to one million more. Global supply chains for alternative technologies also help make possible North America's estimated thousand 'intentional communities' and hundred or so 'eco-villages', as well as the roll-out of urgent alternative and appropriate water and sanitation options in municipalities in the South, as in South Africa's eThekweni Municipality.

Fourth, the anti-privatisation debates underestimate the urgent need for innovation and dynamism - a key strength of the private sector - in a field where the energy to problem-solve the world's most immediate health question has been slow to develop. Here, emergent movements beyond the public-private divide are evident in the immense popularity of, for example, the annual Global Social Entrepreneurship Forum run by Oxford University's Skoll Business School, MIT's Emerging Technologies Conference, the multidisciplinary and sectoral university-based networks related to water and sanitation, such as Loughborough University's Water Engineering Development Centre, and other quasi-academic

networks such as Ecosanres and Sanitation Connection. Other sources of innovation that transcend the public-private divide include new university courses such as Stanford University's Entrepreneurial Design for Extreme Affordability, and the work of foundations such as the Lemelson Foundation, which supports pro-poor invention and entrepreneurship in, among other areas, the water sector.

Finally, anti-privatisation debates tend to assume that developing countries will follow the industrialised country model. Yet there are serious environmental and health problems associated with the spread of water-guzzling and ecosystem-polluting water and sanitation technologies evolved in industrialising Europe. Conventional waste-water systems are increasingly seen as systems where drinking water is misused to transport waste into the water cycle. Conventional water systems also consume large amounts of energy in delivery and treatment processes, and in many ways are over-engineered, not reflecting innovations that make smaller cheaper pipes efficient, and still designed to firefighting, rather than drinking water delivery, specifications.

The world's poor require simple time- and cost-saving solutions they can implement today. In the medium term, human and environmental health will benefit from more innovation. At the very least, the practice of flushing massive quantities of black water into the global water system has to change. In the longer term, while the world is growing more homogenised, globalisation is also giving rise to new social and political forms that increasingly look to ways to link to 'the grid' on their own terms. These challenges suggest that an organic synthesis of technological innovations springing from the work of a host of individuals, organisations and institutions, which span the public-private sector divide in new ways, offers the best route forward.

## Debate 2

**Global civil society has contributed positively to the debate on dams and has improved decisions about them and the construction of them**

### Sanjeev Khagram

Global Village Cameroon (GVC), a local NGO, and International Rivers Network (IRN) condemned the proposed Lom-Pangar dam in Cameroon in a joint

report released in January 2006 (Kinsai 2006). The paucity of public information on the decision-making process, resource mechanisms and proper grievance procedures for affected people, as well as the absence of social and environmental plans for the project, was considered unacceptable by GVC and IRN, given the World Commission on Dams' findings of 2000.

The Lom-Pangar dam project featured prominently in President Paul Biya's address to the nation on 31 December 2005 (Kinsai 2006), as one of the major long-term development initiatives envisaged by government. In a vigorous defence of the project, the Ministry of Energy and Water Resources dismissed claims by GVC and IRN of gross lack of transparency, noting that all documents pertaining to the project were still in preparation. The GVC-IRN report claims that alternatives to the Lom-Pangar dam have not been examined, though it does not provide any systematic investigation of what these options for sustainable development might be. The report does cite further risks from flooding of protected forests, farmlands and pastoral zones; anticipated strains on resources, health and livelihoods; unclear benefits to affected communities; and widespread suspicion that multinational companies will get the lion's share of the electricity generated by the project.

The conflict over the Lom-Pangar dam is hardly unique. Rather, it is part of a historical trend of mounting contestation over big dam building that has spread throughout the world. Since the 1950s, and especially the 1970s, critics of big dams led by civil society organisations and networks have forced the reform, postponement and cancellation of these projects in countries such as the United States, Sweden and France; in the former Communist bloc, Soviet successor states and eastern Europe; and from Chile to Uganda and Nepal.

During the 1980s and 1990s, government agencies, international organisations and companies slowly began to reform their policies and practices on the construction of major dams around the world. Partly these reforms were motivated by the scientific and practical knowledge base that had accumulated from the tremendous amount of research into and experience of dam building since the 1950s. But these actors were also pushed persistently and progressively to initiate, expedite, modify, and broaden reform efforts, or even halt the building of dams by growing numbers of transnationally allied critics, who

coalesced from a multitude of struggles and campaigns waged at the local, national and international levels.

Domestic civil society groups such as the Movement of Dam Affected Peoples in Brazil and the Save the Narmada Movement in India empowered themselves to block or substantially reform unequal and unsustainable big dam projects. They often did so by forming partnerships with like-minded foreign supporters such as Survival International or Environmental Defense. At the same time, civil society groups from the developed world such as European Rivers Network or the Sierra Club not only focused their energies on halting the global growth in the building of big dams abroad but also lobbied for their decommissioning and for river restoration domestically.

Transnational civil society critics of big dam projects have both promoted and been strengthened by the worldwide and multi-level spread of norms regarding human rights, environmental protection, anti-corruption, and others. The institutionalisation of these principles by states, international organisations and multinational corporations has been the result, in part, of civil society lobbying and monitoring activities, and substantially contributed to the effectiveness of these allied groups. The unprecedented changes in World Bank policies on resettlement, indigenous peoples and so on since the 1980s, while hardly perfect, are highly visible examples of these trends.

But transnational civil society critics of big dams do not have the same impact everywhere. First, these actors and the range of tactics they employ are likely to be most effective in democratic institutional contexts that offer opportunities to organise and gain access to decision-making processes, and that significantly reduce the ability of big dam proponents to violently repress resistance. Second, and perhaps most important, the ability of the opponents of big dams to shape outcomes is greatly enhanced when composed of, and especially if led by, domestic peoples' groups and social movements that are capable of generating sustained grassroots mobilisation and advocacy from the local to global levels.

Most countries had similar, relatively successful records of big dam building between the 1950s and the 1970s. However, the more recent case of Lesotho and South Africa's effort to build the largest dam scheme in Africa, the Lesotho Highlands Project,

demonstrates that the impact of transnational organising, the existence of supportive norms, and even domestic democratisation will be lessened without the presence of strong, grassroots mobilisation. The project has gone forward despite the potential of less costly development alternatives and negative social and environmental effects. On the other hand, the ability of the Lesotho High Court to find major multinational corporations guilty of corruption, and to trigger (with civil society support) World Bank anti-bribery sanctions on those firms, provides powerful evidence of the altered dynamics of big dam building.

In Indonesia during the 1980s and 1990s, big dam projects continued to be promoted but under different circumstances from those in southern Africa. Although strong lobbying by domestically federated non-governmental organisations and grassroots anti-dam mobilisation resulted in some minor reforms, Indonesia's authoritarian regime gave big dam proponents a relatively unchecked licence to repress opponents. Even with the adoption of environmental norms and principles, the subversion of human rights and judicial and other democratic procedures limited effective transnational linkages and therefore successful anti-dam struggles. As a result, as in the case of Brazil, many transnational civil society groups promoted democratisation in Indonesia as a strategy for more sustainable development.

In China, the absence of both grassroots mobilisation and the existence of an authoritarian regime resulted in even less change in the dynamics of dam construction than in Indonesia or southern Africa. Although transnational activism has prevented foreign donors and international development agencies from supporting China's mammoth Three Gorges Project, construction has not been halted. However, the case of the Three Gorges shows that even when this increasingly global movement encountered a hostile domestic regime it has had an impact - in China today domestic critics of large dams are among the most effective advocates for democratisation.

The stance of the Chinese government in the World Commission on Dams (WCD) from 1998 to 2000 was largely sceptical in part because domestic critics were not as organised as they are now becoming. But transnational activists were crucial to the creation of this path-breaking multi-stakeholder innovation in

(more) transparent and participatory global governance. The WCD conducted the first independent global review of major dams, yet its report (WCD 2000) did not decry all big dam building. For example, it found that most big dams did not displace indigenous peoples (though the projects that did had devastating effects on these communities) and a significant minority did not substantially damage the environment (some projects were socially and environmentally beneficial). However, it found that between 40 and 60 per cent of big dams had failed to generate the financial and economic benefits expected by advocates and thus should not have been built solely on those grounds.

Correspondingly the WCD did propose a profoundly different approach, linking big dam projects to sustainable water resource development and management. This called for a greater focus on adaptive management and better utilisation of the often untapped potential of the 45,000 big dams already constructed around the world. It also recommended transparent, participatory and accountable decision-making, multi-criteria options assessment, equitable distribution of benefits and costs, and greater compliance with already accepted social and environmental safeguards whenever big dams were involved (the latter being one of the continuing failures of partially reformed government agencies, international organisations, and corporations). These constructive recommendations would never have been possible without the active and concerted involvement of transnationally allied civil society in the WCD process.

In the future, transnational civil society organisations and alliances can improve their capacities and strengthen their activities in a number of areas. First, the larger, often international or Northern-based groups must continue to improve their accountability mechanisms, particularly to local communities even if the latter are not effectively organised. Second, the most ardent opponents must recognise that big dams are not inherently unacceptable, even though a large portion of those proposed should not be built (often solely on economic grounds independent of their social and environmental effects). Finally, and most important, transnational civil society networks must focus more on promoting equitable and sustainable alternatives to big dams, including improving the functioning of those projects that have already been completed.

### Carlos B Vainer

Sixty per cent of the world's rivers are affected by dams or by some kind of diversion, leading to between 40 million and 80 million forced evictions (WCD 2000). More than 4 million people were displaced by the 300 large dams that, on average, entered into construction each year during the 1990s (World Bank 1996). National governments, dam builders and financial agencies usually emphasize the contribution of dams to development: energy, irrigation, drinkable water, flood control. Environmentalists, human rights advocacy organisations and, last but not least, the grassroots movements in the valleys, point out the social and environmentally destructive impacts of dams, and their contribution to increasing social or ethnic inequalities.

After a comprehensive independent review of dams, which included a multi-stakeholder participatory process, the WCD (2000) concluded:

- Decisions-making processes on building dams have not consulted affected people; cost-benefit analysis have very often overestimated benefits and underestimated costs.
- Dams have contributed to increased inequalities, since the benefits have largely gone to the richest social groups.
- Displaced persons - families, communities - have faced extreme economic hardship and community disintegration. Indigenous, tribal, and peasant and fisher communities have been particularly hard hit by forced eviction and the loss of natural resources upon which their livelihoods depend.

Criticism of and resistance to large dams spread during the 1980s. In the fancy palaces of global forums, conferences and meetings, human rights advocacy organisations and environmentalists, mostly Northern-based, campaigned, lobbied and pressured governments and international financial institutions to consider more seriously the social and environmental impacts of dams. In the poor hamlets, villages and towns of the valleys, and on the banks of the rivers, affected communities struggled as much as they could to avoid these mega-projects, for recognition of their individual and collective rights, and to obtain fair reparation for material and immaterial losses.

Responding to this growing pressure, many national governments, and the majority of international financial institutions, have hired experts and created new departments. Innovative legal tools, criteria and guidelines have been devised to deal with social impacts. Have they been enforced? Have governments and financial institutions complied with their own policies? Has the international pressure of so-called global civil society achieved its goals?

In this contribution we suggest that campaigns and lobbying led by Northern-based international non-governmental organisations and networks have proved mostly ineffective. International activism has given material, political, and moral support to local and national resistance, but it could not and cannot ensure new practices and compliance with the new social and environmental policies. So far, grassroots and community-based movements have been, and probably will remain, the main way to stop dams and ensure that the economic, cultural, social and environmental rights of people affected by dams are recognised. Why is that?

### Scene 1: 14 January 2006

About 400 people attend a meeting at St Xavier College, an austere and traditional Jesuit institution in Mumbai. They are celebrating 20 years of the Narmada Bachao Andolan (NBA, Save the Narmada Movement). After some militant songs, Medha Patkar speaks. She is the incarnation, personalisation and symbol of this movement. She talks about the suffering of the villagers, of the farmers, of the tribals displaced, or about to be displaced, by the Sardar Sarovar Project.

The international campaign to stop the dams in the Narmada Valley, and in defence of the human rights of farmers and tribals to fair compensation and adequate rehabilitation, is the most quoted example of transborder activism (Keck and Sicking 1998; Khagram 2004). In 1993, after an independent report revealed its failure to address social issues, the World Bank withdrew from the Sardar Sarovar Dam project. Nevertheless, in the valley things have not changed as we might have imagined. And the World Bank will probably fund new dam projects in India in coming years.

I asked Medha Patkar, leading NBA activist and a member of the World Commission on Dams, about the relevance of global forums and international cooperation between anti-dam movements.

*In India we still have the same problems and there are no relevant concrete changes in the projects. But the WCD process has been important to raise awareness about the poor performance of dams, both economically and technically, and its tragic environmental and social performance. The Indian government rejected the WCD report and its recommendations, but in fact this report became a reference. Also very important have been the international meetings of anti-dams movements in Curitiba (Brazil, 1997) and Rasi Salai (Thailand, 2003). (Interview with the author, Mumbai, January 2006. Emphasis added)*

### Scene 2: 23 January 2006

A meeting is held on the main square of a village settled to receive about 140 families displaced by the Sardar Sarovar Project in the Narmada Valley. Fifty men tell NBA activists based in Baroda, the nearest city, that they don't have enough water, the land isn't good and there isn't enough grazing land for their cattle. Many of these men hold documents that they cannot read. These are letters from the authorities explaining that the oldest sons of the displaced families have the right to become 'beneficiaries' of the resettlement, that is, they have right to receive two acres of land...once they can prove that in 1987 they were 18 years old. The problem: once, in their villages, there were no schools, no official agencies nor civil registers; and so the only way to prove their age is by the witness of relatives and neighbours. But the authorities do not accept this and demand formal, written proof.

This is happening now, when governments are supposedly constrained by rules and laws, and national and multilateral financial institutions have established criteria that require resettlement and rehabilitation as a condition of their support for any large dam project. It evokes the 1960s and 1970s, when social impacts were not an issue. It evokes the sad story of the Sobradinho Dam, which forcibly displaced 70,000 people in north-east Brazil, the poorest region of the country. Many people were still in their houses when the water arrived. It evokes the ongoing legal process against the government of Guatemala in the InterAmerican Court of Justice over the Chixoy Dam, where in 1982 444 peasants and indigenous people were killed for protesting against its construction on their ancestral territory.

There are so many examples that show the ineffectiveness of words and documents, agreements, protocols and memorandums! So many examples

show that the main resource of poor communities affected or threatened is their ability to organise themselves and fight, that is, their capability to become collective political actors.

Dipti, born in India, went to the United States with her family and studied social sciences at Berkeley. She came to the Narmada Valley and decided to become a full time activist of the Narmada Bachao Andolan.

*You want to know whether 'global civil society' has been important to improve the conditions of the people affected by dams? I will tell you. If villagers, farmers, adivasi [tribals] are 'global civil society', I can say that yes: 'global civil society' made a big difference. If we have now some resettlements - even with their problems - it is because this 'global civil society' organised itself and challenged state governments, the government of India, the World Bank, the dam builders. If today we have some rights recognised, this is because of our struggle. (Interview with the author, Baroda, January 2006. Emphasis added)*

Global, local. Some villagers told me that before the dams they had never heard about the other side of the mountains, let alone about the rest of India. The dam and the struggle gave them another perspective on their lives - in other words, another scale of understanding. Now, many of them know that dam builders are not only local or national actors. Many left their village or region for the first time when they joined an NBA march or rally. The dam and the resistance are making them more national and global than strictly local, and they are keen to strengthen their connections with other grassroots anti-dam movements. But they still believe that the decisive front is in the local and national sphere. Of course, they think of NGOs and international networks as allies - but they believe that the decisive battles will be won or lost on the banks of the rivers, challenging leading political groups in each country.

### Some questions

So far, non-governmental representations in the global conferences, meetings, and seminars have been dominated by Northern NGOs. The same can be said about international coalitions and networks, whose constituency is the urban middle classes, both in the North and in the South. Recent experience shows that their campaigns and support are helpful to local and national movements.

These NGOs and transnational networks have the material and other resources (language, symbolic tools



and cultural references) to be partners in the international forums dominated by developed countries. But they do not have the legitimacy to represent indigenous people, farmers and fishermen and women, affected by dams in the South. Will popular movements fighting locally and nationally for the rights of the affected people - the NBA in India, Movement of People Affected by Dams in Brazil, the Assembly of the Poor in Thailand - become relevant to global actors? Will they be able to overcome the challenge of languages, resources and mobility to build their own coalitions and networks? Will this perspective make 'global civil society' more inclusive and more effective in changing the logic and procedures of decision-making processes surrounding the construction of dams? We do not have a definitive answer but the World Social Forum and the experience of Via Campesina, the international peasants movement, show that it is not utopian to wonder about international coalitions of community and locally based movements.

### Alessandro Palmieri<sup>1</sup> The role of storage in adapting to climate variability

The true source of water is meteoric precipitation, be it in the form of rain or snow. There is agreement, at scientific level, that global warming is taking place. At the same time there is no consensus on the effect of global warming on climate change. The only agreement is that there will be more precipitation variability and even more extreme variations in surface run-off. Sporadic, spatial and temporal distribution of precipitation rarely coincides with demand. Whether the demand is for natural processes or human needs, the only way water supply can match demand is through storage. Storage capacity in natural systems (lakes, wetlands, groundwater, snow pack, and so on) and in man-made reservoirs mitigates extremes in hydrological variability. The gloomy subject of climate variability and the huge energy needs of the planet, especially in fast-developing countries, demand serious responses, based on science, not

on ideology or advocacy. The medium-term future of renewables lies in a synergy between hydropower and other forms of renewable energy sources, especially the intermittent ones (wind and solar).

### People need a range of tools for their water and energy security

To achieve water and energy security, humanity needs efficient services for irrigation, domestic and industrial water supplies, security against droughts, protection from floods, and power generation. Infrastructures aimed at providing those services must not only be developed, they also need to be efficiently managed; hence the concomitant need for capable water institutions. Water infrastructure is just a tool, and its benefits should be aligned with the needs of the people.

Investments in institutions and infrastructures require significant financial resources. At the same time, community-level activities require a widespread presence on the territory. The two dimensions - large investments and community-level activities - are equally important in meeting people needs, but they are often presented in an 'either-or' context. Very often we hear arguments such as 'small is beautiful' and 'large is bad'; other stakeholders come up with opposite arguments. Sometimes such statements refer to dams.

In reality, large investments in institutions and infrastructure, and community-level activities represent a continuum of complementary tools whereby one tool builds on the results of the others.

There is no such thing as a bad small dam or a good big dam or vice versa. The response to poor countries' water demands should be based on a customised approach, because a one-size-fits-all solution does not exist. It is sad to observe that international NGOs almost never, at least in the writer's experience, bring this honest and constructive message to communities in developing countries in dire need of water and energy. To a large extent, this observation is also true for some government organisations that still think they can act in the 'decide-hide-defend' mode. What people really need are transparent decision-making processes in which they can participate effectively. The ultimate question is: who is going to represent my needs?

### Box 5.2: The hidden benefits of dams

Villagers in Huangshui and Hehu in China's Zhejiang province have taken shares in the Huangshui hydroelectric power plant instead of one-off cash compensation payments. The building of the Huangshui plant will submerge some 40 hectares of farmland. According to Interfax (2004), a local government official said that such an arrangement between the developers of the plant and villagers was very rare in China. It is estimated that the villagers could receive dividends worth US\$24,163 every year.

Meanwhile, the Yellow River has begun to flow to the North China Sea again after construction of the Xialongdi multipurpose dam. The water body had been virtually consumed by extractions. Now, the water downstream of the dam is silt-free, as are the irrigation canals. The hydropower component replaces the burning of 1.9 million tons of coal per year, saving emissions of 4.6 million tons of carbon dioxide, 33,000 tons of sulphur dioxide and 18,700 tons of nitrogen oxide. Yet these very real benefits do not appear on the balance sheet of the project, whose income is derived entirely from hydropower production.

The El-Cajon Dam in Honduras is the only reservoir in that country to play any significant role in flood control. It is designed with capacity to route floods, so raising its height and enabling it to flood more land. When Hurricane Mitch hit Honduras in October 1998, the peak discharge of the flood at the entrance to the El-Cajon Reservoir was estimated to be about 10,000 m<sup>3</sup>/s, which the reservoir reduced to about 1,000 m<sup>3</sup>/s. Two highly populated alluvial plains lie at the end of a 10 km-long, narrow gorge downstream of the dam. The flood had a serious economic effect but caused no casualties. The effect of an uncontrolled flood ten times higher scarcely bears thinking about. But the value of the dam's disaster prevention function could not have been envisaged at the planning stage (UNEP-DDP 2004: 60).

### Decision making on dams and their alternatives

Stakeholder participation is a key instrument for identifying and managing risks and uncertainty. Indeed, this is one area where social, economic and commercial considerations converge. It is in the interest of all concerned parties (governments, developers, lenders, project-affected communities, and intended beneficiaries) that issues be resolved early in the project development process.

Water infrastructure programmes can be designed to enhance their impact on poverty alleviation. Local populations, and first among them project-affected communities, should share the benefits of water infrastructure programmes. One way is through revenue sharing. Under this mechanism, some of the revenues are redistributed to local or regional authorities in the form of royalties tied to power generation or to water charges. Development funds financed from power sales, water charges, or government grants may be established to provide seed money for fostering economic development in the project-affected area. A variety of mechanisms may allow local or regional authorities to partly or fully own an infrastructure project. Local or regional authorities may negotiate free energy or preferential

electricity rates with the hydropower producer, which benefit all electricity consumers in their constituency and contributes to local and regional economic development. Taxes to be paid to regional and local authorities can also be defined in state legislation, sometimes as a percentage of project sales or net income. Several countries, such as China, Colombia, Brazil, Korea, and Japan, among others, have incorporated revenue sharing into legislation.

### Rights, risks and responsibilities

The difficulties that countries face in developing water infrastructure are not only financial but relates also to public acceptance of such large and often controversial investments. A large part of the controversy concerns how the costs and benefits of infrastructure projects are evaluated. Box 5.2 contains several examples that demonstrate how difficult it is to quantify, in monetary terms, the environmental and social costs associated with large dams.

Stakeholder involvement processes are viewed by many as the way to achieve consensus on the implementation of much needed projects. At the same time stakeholder involvement processes are not free from disadvantages. Much needs to be done to improve commitment and responsiveness, mainly in terms of

<sup>1</sup> *The findings, interpretations, and conclusions expressed herein are those of the author and do not necessarily reflect the views of the IBRD/World Bank and its affiliated organisations, or those of the executive directors of The World Bank or the governments they represent.*

timely outcomes, if the approach is to find more widespread application.

The World Commission on Dams report (WCD 2000) advocates a 'Right at Risk' approach for stakeholder identification. The concept of 'responsibility' should be added, giving the 3Rs approach, for at least two reasons: (a) it identifies additional stakeholders that have a stake in good public decision making, and (b) it helps select from the wider group of stakeholders those willing to assume responsibility for informing public decision making. A multi-stakeholder approach cannot succeed without an underlying programme of activities that is time bound, cost effective and supported by committed governments. Aiming at negotiated agreements rather than consensus is probably a more realistic way to achieve such results.

### Moving ahead

Increasing involvement of civil society groups in decision-making processes on important infrastructure projects, including dams, can be regarded as a sign of discomfort with the way in which civil society's needs have traditionally been represented. This discomfort has brought international NGOs to play a representation role together with, but most often in opposition to, government institutions. At the same time, it is not always the most vocal of those international NGOs that have shown themselves to be 'close enough' to the real needs of people. In too many cases the priorities of some international NGOs, especially single-issue ones, do not necessarily coincide with those needs. Increasing evidence indicates that what is usually presented as 'the civil society voice' is in reality only a segment of that voice, a segment that legitimately delivers a message about negative impacts of water infrastructures but remains silent about positive impacts. It is becoming increasingly clear that a better job needs to be done to include and engage 'civil society' in options assessment. That job is a hard one: it requires reaching out to stakeholders who are not vocal but have a lot to contribute to the quality of projects. In most cases, those stakeholders are not organised to speak with a common voice. On this issue, I share the view of Carlos Vainer regarding the value of community-based organisations (CBOs). For example, consumer associations are promising civil society initiatives for getting the dialogue focused on real needs and for achieving effective self-representation. Ultimately, good

decision making is a political issue that, by definition, is rooted in good representation. Increased national and international support for CBOs would allow the latter to play a more effective role, including free and informed selection of development-oriented NGOs with which CBOs can confidently share common interests.

### Debate 3

#### **Global civil society and international law have contributed positively to the debate on and solutions to conflicts and tensions over shared water resources**

#### **Fadia Daibes-Murad**

On earth there are an estimated 200 international river basins where approximately 40 per cent of the world's population lives. Of those basins, more than 50 straddle three or more countries. Cross-border groundwater is used virtually in every continent of the world and is subject to high competition for its use as a main source of supply. There is an impressive record, both historical and contemporary, of treaties and agreements between and among sovereign states over the development, management and protection of the water resources of rivers and lakes that cross international borders. These treaties cover many of the major rivers of the world, including the Niger, Nile, Danube and Mekong, and, as of late, some aquifers such as the Geneva aquifer, which is shared between Switzerland and France.

This contribution attempts to identify the role of global civil society organisations (GCSOs) and international law in the sphere of international watercourses, and their contribution to the debate on finding solutions to conflicts. As a point of departure, and despite the ambiguous or contested relationship of law to civil society, the author strongly believes that such organisations have been a very important source of international water law. Despite their informal nature, GCSOs around the world have developed creative solutions to water shortages and resource sharing, exercising their skill in, for example, developing applicable codes and principles, as drafters of treaties or codes, and as judges or advocates at international tribunals. Their contribution to cooperation in the field of international watercourse management is reflected in certain agreements such as the India-Nepal Mahakali River Treaty, which refers to the 'determination to cooperate in

development of water resources and by agreement'; and in the Indus Water Treaty, which divides, rather than shares, the waters between India and Pakistan. The reiteration of very similar expressions of the same principles, such as the principle of equitable and reasonable utilisation and the duty of pollution prevention, coupled with increasing acceptance by the international community of agreements such as the 1966 Helsinki Rules on the Utilization of International Rivers, demonstrates an increased awareness of the current and emerging water crises, the risks of uncontrolled use of waters that cross borders between two or more states, and the importance of international cooperation in resolving conflicts over international waters.

Despite the prodigious efforts by GCSOs such as the International Law Association and the International Law Institute, it must be acknowledged that the problems associated with the equitable and reasonable utilisation, development and protection of international watercourses remain unresolved. The alarming rate of population growth, coupled with the effects of climate change, is expected to result in severe water scarcities. Moreover, the limited access to shared water of the weaker party to the conflict is expected to intensify. The latter could be referred to as 'political scarcity'. These two conditions will undoubtedly contribute to global political instability and conflict. This is true of the Middle East, where political and natural scarcities may create new water conflicts and escalate existing ones. The conflict over water between Israel and the Occupied Palestinian Territory is one of the most contentious in the region. The essence of the conflict lies in the serious disparity between the Palestinians' access to international water resources and that of the Israelis because, as the occupying power, Israel has absolute control over all the water in the Occupied Palestinian Territory. Although the links between tension over water and the ongoing political violence in the Occupied Territory are unclear, it seems reasonable to conclude that water scarcity and its consequent economic effects contribute to the unrest in the Occupied Palestinian Territory. Many specialists (Shuval, Daibes-Murad, Wouters) believe that water in the Middle East could be a catalyst for conflict or a vehicle for cooperation. However, equitable agreements to share water remain hard to achieve because the magnitude of political conflicts and problems outpaces current

efforts at cooperation.

Evidence of the role of global civil society in the evolution of international water law is manifold. The work of organisations such as the International Law Association is a good example of how global civil society has influenced the development of international law and used United Nations mechanisms for achieving distributive justice in the utilisation of these resources. Until 1997, the Helsinki Rules on the 'Uses of the Waters of International Rivers', which were adopted in 1966 by the International Law Association, were the only set of written rules to be referred to by experts, officials and state representatives. These rules provide that a basin state is entitled to an equitable and reasonable share of the beneficial uses of the international waters. The extensive interaction and debate between this organisation and the UN system culminated in the codification, in 1997, of the rulings that represent customary international practice in the field of international watercourses, which are binding to all.

The 1997 United Nations Convention on Non-Navigational Uses of International Watercourses (UNGA 1997) represents not only the outcome of the UN International Law Commission but the culmination of most of the attempts by various countries' representatives, scientists and lawyers to find the best means of sharing international watercourses. Consequently, the UN convention has attempted to incorporate, in an improved manner, most of the principles derived from the work of some organisations, such as the Helsinki rules, and even the essence of some theories of allocation, to benefit not only one state in particular but the interests of all states. The objective of the convention is to refrain from the unilateralism of some upstream states and to provide preventive mechanisms for the resolution of disputes that result from the inequitable utilisation of international watercourses.

The impact of the 1997 UN Convention and the 1966 Helsinki Rules is being felt around the world. For example, the 14-member Southern African Development Community (SADC) developed its revised protocol on shared watercourses in 2000 based on the principles and rules embraced within the UN Convention. The Palestinian Authority formally adopted the UN Convention and the 1966 Helsinki Rules in its framework position on negotiations on water with Israel in 2000. In the case of Israel,



international law has had a limited role in resolving the water conflict between Israel and Palestine. Israel appears not to have intended to employ these rules and principles to resolve the existing water conflict. From the author's perspective there is enough ground to confirm that Israel is unlikely to be ready for a binding agreement relating to international water on the basis of international law.

This brief analysis demonstrates that in the past three decades global civil society has contributed significantly to creating peaceful solutions to potential and existing tensions over sharing water resources through the codification and progressive development of international water law. However, the analysis demonstrates equally the need to do much more. There remains a gap between the efforts and achievements of global civil society organisations and realities on the ground. Their efforts need to be complemented by cooperation, mutual trust, political will and commitment. States have a moral and ethical responsibility and a legal obligation to support the efforts of global civil society as part of their duty to maintain global peace and prosperity. Countries must be encouraged to adopt a cooperative approach rather than using violence in an attempt to solve problems over the shared waters. Global civil society organisations must continue their scholarly efforts to evaluate the important possibility that water cooperation may bring peace. Governments must give scholars enough recognition and sustained support. This is the only means to ensure that such efforts are comprehensive and conducive to transforming or resolving conflicts, and that countries' fears of future water wars will disappear.

### Patricia Wouters

*Access to safe water is a fundamental human need and, therefore, a basic human right. Contaminated water jeopardises both the physical and social health of all people. It is an affront to human dignity.*

Kofi Annan, World Water Day, 22 March 2001

Serious drought threatens drinking water for 14 million people in northern China, and the annual mid-year flooding has engulfed a large swathe of central and eastern China, with storms claiming the lives of 22 people in Guizhou province in early May 2006. Numerous countries in Africa, from Ethiopia to Sudan, Kenya, Niger and Malawi, suffer from severe water scarcity, with the attendant adverse impacts for millions of people. These examples, a handful among

many, demonstrate the growing potential of water to cause tension. A billion people lack access to safe drinking water, and approximately one-third of the world of the world's population face severe water shortages in the next two decades. At the local level, governments around the world struggle to reform water policies and laws, seeking new ways to address increasingly complex issues related to the management of water resources - both within and beyond national borders. The issue is complex and raises issues beyond water per se - including matters concerning human dignity, economic prosperity and regional security.

Recently, water has returned to the international agenda: more than 20,000 people attended the 4th World Water Forum in Mexico, in March 2006, and the UN General Assembly declared 2005-2015 to be the 'International Decade for Action - Water for Life' (UNGA 2003). Among the Millennium Development Goals is a global commitment to reduce by half the number of people without access to safe drinking water and adequate sanitation by 2015 - a target that the international community now recognises will be missed.

With an estimated 4 billion people relying upon water that originates outside national borders, and more than 3,500 treaties governing the world's shared watercourses around the world, I would argue that the aim of international water law is clear - the peaceful management of shared transboundary freshwaters within responsive, transparent and enforceable frameworks. But the efficacy and operational potential of international law to reduce tension and prevent conflict is not always understood and consequently not applied to its best advantage - a reflection of shortcomings in the current water resource management paradigm.

Water knows no boundaries. Thus the Blue Nile, originating in the Ethiopian highlands, flows downstream across Sudan and enters the Mediterranean Sea via Egypt. However, Ethiopia's plans to use more of the Nile's upstream waters led to angry responses from Egypt, including exchanges of diplomatic notes. Who will benefit from the use of such waters? More important, will this be fair and equitable to all - especially to the poorest, the voiceless and the weakest?

Recall the severe consequences of upstream management of the Zambezi, the fourth largest river in Africa, which some considered responsible for the

### Box 5.3: A framework for international law on water

International water law can be best understood through the following five-point analytical framework, which identifies the key legal issues that need to be addressed (with interdisciplinary inputs) in each transboundary watercourse regime:

- Scope - what waters are covered? What uses are covered? What states are covered?
- Substantive rules - what are the rules that determine 'who gets what', ie those laws that determine the legality of existing or proposed new uses.
- Procedural rules - what are watercourse states required to do when they undertake new or increased uses?
- Institutional mechanisms - what is mandate of the joint bodies or river basin organisations established to manage the transboundary watercourse?
- Dispute avoidance/settlement and compliance - what rules facilitate compliance with the agreement (or regime) and promote dispute avoidance? Where disputes arise, how are these resolved?

We now develop indicators to assess the relative impact of succeeding in, or, failing to, effectively address these five core areas in the development of an agreed regime to manage transboundary waters.

*Source: Vinogradov, Wouters and Jones (2003: 15-21)*

devastating floods in Mozambique in 2003. Was Zambia responsible for the consequent loss of life in Mozambique? In November 2005 a blast ripped through a PetroChina benzene factory in China's north-eastern Jilin province, resulting in an 80-kilometre slick escaping into the Songhua River, which left 4 million people without water services in Harbin, and polluted the main source of drinking water for the 600,000 residents of the Russian city of Khabarovsk, as well as devastating a fishery downstream. These are just two of many international incidents caused by activities in one country that affect another, the conduit for which is transboundary watercourses. How are such conflicts to be prevented or resolved? It is within this context that we must examine the relevance and role of international water law, and in 'new' ways; not, as some wrongly consider it, a notion of law that conjures up entrenched adversaries who fight over 'rights', but of law as an enabling mechanism that promotes the peaceful management of transboundary waters and provides a framework within which needs can be identified, protected and reviewed. I would argue that law is a vehicle for managing change, offering, in fact, a 'meta-framework' for examining all the relevant factors and circumstances, and providing a transparent, responsive and legitimate means to ensure that there is 'water for

all', especially the weakest.

How does international water law work in practice? In line with the Statute of the International Court of Justice, when we seek the 'sources' of the rules of international law we have four areas to consider: treaty law, customary law, general principles and, as a secondary source, academic research and writing in this area. Regardless of the existence of a treaty governing a particular transboundary watercourse, all states are governed by the overarching rule of customary international law - that each state is entitled (and obliged) to an equitable and reasonable 'use' of its shared waters. The only global treaty that captures this rule - the 1997 United Nations Convention on the Non-Navigational Uses of International Watercourses (UNWC; UNGA 1997) - is not yet in force, but there is a renewed UN campaign to encourage ratification worldwide, a move that is to be commended.

However, despite scholarly research, including rigorous comparative work on state practice (including treaty practice), there remains serious shortcomings in appreciating the many strengths of the UNWC. For example, a recent UNEP report (2006) claims that the UNWC and the 1992 United Nations Economic Commission for Europe (UNECE) Helsinki

### Box 5.4: Bridging the chasm

Working across disciplines is very challenging but some progress has been made. The UNESCO Hydrology for the Environment Life and Policy (HELP) programme offers a stakeholder-driven multidisciplinary approach to managing the world's water resources, with some 67 HELP basins around the world. One example is the Murrumbidgee basin in Australia, a 'demonstration basin' that exemplifies the HELP approach. This new integrated approach to management brings together water law and policy experts, water resource managers and water scientists. Their combined expertise makes it possible to monitor hydrological, climatological and ecological factors as well as sociological, economic, administrative and legal issues in a HELP catchment area. These findings will help address the policy and management issues identified by users. The programme requires the active involvement of both policy and facilitating groups to set the policy agenda and to ensure that the scientific results address community needs.

This work inspired one of the books seeking to analyse the interface between water law and science, an exercise that identifies some of the successes and problems involved in attempting to work across disciplines (Wallace and Wouters 2006). Such an approach requires a courageous leap of faith, and is built upon the assumption that each side is willing to bring its expertise to the table and to engage with others from different disciplines. This may necessitate the creation of a new common language, as we discovered when trying to develop the Legal Assessment Model as a tool to help transboundary watercourse states to develop national water policies in line with their entitlements and obligations in international law (Wouters et al. 2005). A good example is the South Africa Water Act, which outlines an equitable and reasonable allocation plan for water, with vital human and environmental needs protected under the 'reserve' (Wouters 2005).

*Source: UNESCO Hydrology for the Environment Life and Policy (URL)*

Convention on Transboundary Rivers and Lakes, lack 'practical application' due to 'their vague and sometimes contradictory language and the lack of proper enforcement mechanisms', and that '...the impact they have made on international water management has not met expectations' (UNEP 2006: 35). Yet, contradicting this statement, the report suggests that treaties and institutions have played the most important roles in influencing watercourse state relations! I would argue that treaties and river basin organisations derive their origins and legitimacy from international law - it is the platform that enables, facilitates and develops these instruments and joint bodies. The misunderstanding about the relevance and role of international law illustrated in the UNEP report is, unfortunately, pervasive.

What is the more enlightened approach? First, the UNWC and the UNECE Helsinki Convention are not 'vague'; they each represent multilateral international agreements that provide identifiable and transparent substantive and procedural rules, including the creation of joint institutions as core components of a regime designed to facilitate the peaceful management of shared water resources.

Second, as framework instruments these treaties provide basic guidelines that serve as a baseline for (perhaps) more detailed basin-specific agreements, to be negotiated and agreed by watercourse states on a case-by-case basis. Third, the suggestion that these agreements suffer from 'failed implementation' is simply wrong - serious obstacles have been overcome allowing for effective management of the Indus, the Mekong, the Colorado, the Danube (to name just a few), and hundreds of watercourses shared by two or more countries around the world.

Global warming, climate change, and devastating natural occurrences have conspired to exacerbate tension over water resources, which affect all corners of the globe and threaten to worsen. What can international law, international lawyers and policy makers do now to prevent 'water wars'? It is essential that water lawyers are part of both rapid and long-term response teams, collaborating with politicians, scientists and stakeholders to devise a framework for anticipating and dealing with these issues. The body of rules that have evolved under international water law, outlined in Box 5.3, provides the foundation for the peaceful management of the world's shared

resources, establishing a level playing field and a forum for all parties.

The problems with operationalising this framework arise from a lack of human and financial resources at the local level. We need a new generation of local water leaders with appropriate education, mentoring and networks, enabling them to identify, articulate and act upon local issues in a way consistent with regional and international interdependencies.

A new conceptual approach to international water law must be developed and disseminated beyond the legal community. To some extent, this enlightened paradigm is already emerging - Box 5.4 outlines the UNESCO Hydrology for the Environment, Life and Policy (HELP) programme, a pioneering interdisciplinary approach that is stakeholder driven.

In conclusion, the global water challenge presents new opportunities for interdisciplinary research, including water law as an integral component. Together we must find innovative ways to educate our next generation of 'water champions', as an enlightened new community, supported at the local level. This is not unrealistic: it can be realised through the creation and long-term support of 'water knowledge hubs' around the world, targeted at engaging existing stakeholders and regional institutions, especially universities. How the international community manages transboundary waters will be pivotal in avoiding and resolving conflicts over water. International water law provides a transparent and dynamic legal framework to tackle these issues and should be considered an integral part of the solution.

### Conclusion

#### Willemijn Dicke

Global civil society is often equated with NGOs, but the case of water reveals all its various agents. The debate about privatisation involved transnational corporations alongside local and global NGOs. In the debate over international water conflicts, we have seen local and global NGOs, international law, nation states and (non-state) cross-border water authorities. The debate over dams was led initially by Northern NGOs and later joined by local groups and networks. In the latter case, the World Bank and other global institutions played a role of major importance.

In scrutinising the three debates, can we assess the

role of global civil society in helping to solve the water crisis? With such a diversity of actors involved, the answer is bound to be ambiguous. The debate over dams illustrates this point well. Initially, the most vociferous and visible anti-dam proponents were Northern NGOs. But local dwellers felt their views were inadequately represented by these organisations, and took matters into their own hands. In the debate about conflicts over water resources, the manifold shape of global civil society is even more apparent, with local and global NGOs, international law and cross-border water management schemes playing a part.

The three debates illustrate that the extent of global civil society's influence is dependent on the interplay between various forces and institutions, including nation states, private agents, transnational corporations, transboundary organisations, financial institutions and international organisations. While a definitive assessment of the role of global civil society in water management is impossible, this chapter suggests that the interplay serves to stimulate solutions to problems, and articulates values and issues that would otherwise remain hidden.

However, we have also seen that new problems are identified as a result of the involvement of global civil society, such as legitimacy - who is representing whom and on what grounds? Another issue is competition and conflict among various global civil society actors, which points to the challenges of organising civil society.

Despite these issues, this chapter illustrates the increasingly vital role global civil society plays in the management of water - and how this potential could be strengthened, not only because of its merits, as shown in the debates, but also because there is no alternative, whether we like it or not. In order to achieve sustainable and resilient water governance, collectivity has to be redefined in ways which restore the relation between water and society. Global civil society is pivotal in this redefinition of collectivity because its involvement in the governance of water is not supranational, but based on subsidiarity and decentralised action, all prerequisites of effective and sustainable management (Bernauer 1997; van Ast 2000).

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