

# Conflicts, companies, human rights and water

## – A critical review of local corporate practices and global corporate initiatives

By

David Hall and Emanuele Lobina

[d.j.hall@gre.ac.uk](mailto:d.j.hall@gre.ac.uk)

March 2012

A report for Public Services International (PSI) for the 6<sup>th</sup> World Water Forum at Marseille, March 2012



Public Services International  
Internationale des Services Publics  
Internacional de Servicios Públicos  
Internationale der Öffentlichen Dienste  
Internationell Facklig Organisation för Offentliga Tjänster  
國際公務勞連

<b>0. SUMMARY .....</b>	<b>3</b>
<b>1. INTRODUCTION.....</b>	<b>4</b>
<b>2. IMAGINARY AND REAL CONFLICTS OVER WATER.....</b>	<b>4</b>
Chart A. Transboundary water: cooperation not conflict .....	4
<b>3. BUSINESS IMPACT ON WATER RESOURCES.....</b>	<b>5</b>
3.1. AGRIBUSINESS: LAND AND WATER GRABS IN AFRICA .....	5
3.1.1. <i>Land and water grabs in Africa and elsewhere</i> .....	5
Table 1. Investing in 'land grabs': states and companies, food and fuel.....	6
3.1.2. <i>Biofuels</i> .....	7
3.1.3. <i>Virtual water</i> .....	7
3.2. MINING AND OIL IN SOUTH AMERICA .....	7
3.2.1. <i>Chile and water rights</i> .....	8
3.2.2. <i>Ecuador, Peru and Argentina</i> .....	8
3.3. DRINKS COMPANIES: IMPACTS IN SOUTH ASIA AND NORTH AMERICA .....	9
Table 2. Food and drinks companies with largest water consumption 2006.....	9
3.3.1. <i>Coca-Cola and other drinks companies in India</i> .....	9
Table 3. Groundwater impact of three Coca-Cola bottling plants in India .....	9
3.3.2. <i>Economic efficiency, water neutrality</i> .....	10
<b>4. GLOBAL CORPORATE INITIATIVES.....</b>	<b>11</b>
4.1. THE WORLD ECONOMIC FORUM AND THE WATER RESOURCES GROUP.....	11
4.1.1. <i>Companies</i> .....	12
Table 4. Corporate membership of WEF Water Resources Group.....	12
4.1.2. <i>WRG reports</i> .....	13
Table 5. Potential markets for suppliers of fertilisers, irrigation technology etc 2010-2030 (an undistorted rendering of McKinsey's exhibit 37) (USD \$millions) .....	14
4.2. UN CEO WATER MANDATE: CORPORATE RISK, 'SHARED' RISK AND SOCIAL RISK .....	14
Chart B. Business view of risks: from civil society, government and physical water .....	15
4.2.1. <i>Dow Chemical as a model company</i> .....	16
4.3. AQUEDUCT: A GLOBAL DATABASE OF CORPORATE RISK .....	16
4.4. WATER FOOTPRINT NETWORK.....	17
<b>5. THE HUMAN RIGHT TO WATER.....</b>	<b>17</b>
5.1. THE UN RESOLUTION AND ITS ORIGINS.....	17
5.2. HUMAN RIGHTS AND POLICY CAPTURE.....	18
<b>6. CONCLUSIONS .....</b>	<b>19</b>
<b>7. APPENDIX.....</b>	<b>20</b>
7.1. GLOBAL WATER .....	20
Chart C. The water cycle.....	20
Chart D. Water .....	20
7.2. GLOBAL USE OF WATER .....	21
7.3. WATER SCARCITY AND WATER STRESS .....	21
Chart F. Water availability in different regions .....	21
Chart G. Water stress .....	22
Chart H. Differential impact of climate change.....	22
<b>8. NOTES.....</b>	<b>23</b>

## 0. Summary

Companies use a lot of water and their waste is a pollution risk. This brings them into conflict with many communities around the world, when companies capture scarce water resources or cause environmental damage. These conflicts are real – by contrast with the false myths that ‘the world is running out of water’, or that there are many wars between countries over water resources.

The companies concerned in conflicts over water resources are not, in general, the companies involved in privatised water supply and sanitation services. They are rather the companies which are the main consumers of water – agribusiness, drinks and food companies, and mining companies.

The water demands of agribusiness conflict with other users of water, including local farmers. The large-scale purchasing of land concessions in Africa and elsewhere are the biggest current examples of this. Water is a key factor in these deals. Most of the land grabs are driven by growers of ‘biofuel’ crops, so that virtual water is exported from Africa into petrol tanks.

Mining and oil production uses large amounts of water, and pollutes water resources, as a result of adding chemicals and as a result of waste products from the mining process itself. In South America mining operations are in frequent conflict with local communities. For example, in Chile, a mining company has bought water rights in the Atacama Desert; in Ecuador, Chevron Oil has been fined \$18billion for contaminating water resources.

The largest corporate users of water are companies selling soft drinks or beer, including Coca-Cola, PepsiCo, Nestle and Unilever. There have been a number of conflicts in India between local communities and drinks companies abstracting water. Three examples involve bottling plants of Coca-Cola, which led to deterioration in groundwater levels, so that local people, in particular farmers, were left with less water for their own needs.

At global level the same companies that are major consumers of water promote a number of initiatives to try and advance ideas which favour their interests in these conflicts with other users.

These companies use the idea of water efficiency and reducing their global water footprint to claim that this is offsetting local impacts. But these measures do nothing to reduce the actual impact in these specific locations, and have to be understood as public relations exercises.

The Water Resources Group, launched at the World Economic Forum, promotes the idea that general water efficiency is the key issue, that ‘clearer’ water rights are important, and that companies should be involved in defining ‘institutional mechanisms’ to allocate water resources.

The CEO Water Mandate strongly promotes the idea of ‘shared risk’. This claims that governments and society equally share the risks identified by companies of ‘regulatory’ and ‘reputational’ risks. But for the rest of society, regulation is a benefit, and the activity of companies creates risks.

By contrast, in response to many years of campaigns, in 2010 the UN General Assembly agreed that there is a human right to water and sanitation. This has been widely welcomed and used by social organisations at national and local level, but is regarded with anxious hostility by companies.

In conclusion, there is a contrast between the success of companies in promoting their ideas at global level, and the greater impact of the concept of water as a human right at local level.

## 1. Introduction

Companies use a lot of water and their waste is a pollution risk. This brings them into conflict with many communities around the world, when companies capture scarce water resources or cause environmental damage. Corporate groups promote ideas such as shared risks, global water footprints, and water markets, which minimise the role of democratic politics. This contrasts sharply with the decision by the United Nations that access to water is a human right, and that human uses have priority. Companies are strongly averse to recognising rights which could limit their own economic interests. These conflicting ideologies reflect the material conflict over water resources, and different approaches to political processes.

This report consists of four sections:

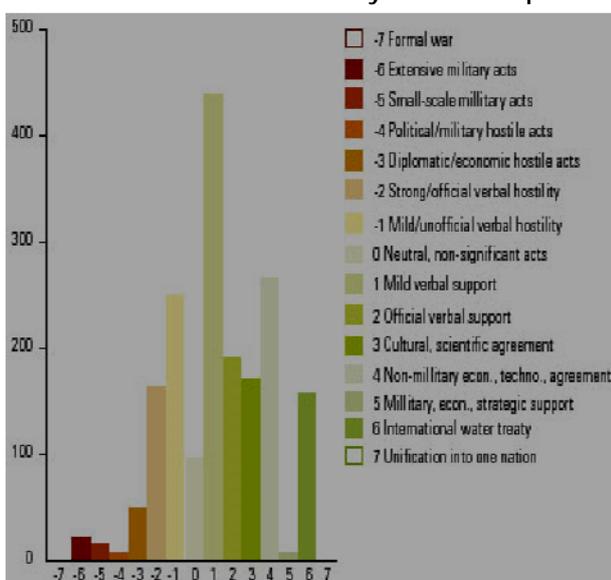
- Contextual information about water resources, and real and imaginary conflicts
- A review of actual conflicts over water resources between local communities and companies
- Global corporate initiatives on water resources, and the UN decision
- Discussion and conclusion

## 2. Imaginary and real conflicts over water

There is a myth in some circles that the world is running out of freshwater. The world is not running out of water. There is a constant amount of water in the world, but the availability of freshwater for human uses depends on local conditions. These may be affected by general factors e.g. climate change but the actual supply of available water depends on local weather patterns, rivers and aquifers, and the actual demands for water within the same locality, whether for household, farming or industrial use. In addition, the environmental impact of human use depends on the treatment of used water and other waste, and the sustainability of withdrawals from specific aquifers or rivers.

There is a second myth, that there are serious problems resolving ‘trans-boundary’ water conflicts between different countries. Many people have quoted the phrase ‘the wars of the 21<sup>st</sup> century will be fought over water, not oil’. But in practice there have been very few conflicts over trans-boundary water issues (with the exception of Israel/Palestine, where the source of the conflict is not the water issue itself). Agreements have been and are being negotiated over both transboundary river use and, now, transboundary aquifers. So: “Although transboundary water resources can be fodder for hostility, the record of cooperation is vastly superior to that of acute conflict, that is to say, water is much more a vector of cooperation than a source of conflict.”<sup>1</sup>

Chart A. Transboundary water: cooperation not conflict



Source: Wolf et al <sup>2</sup>

However, there are many other conflicts over other water issues, arising from economic and political factors within in specific countries or areas. These are not trans-boundary issues, but conflicts between different users of water - households, farmers, and business - and conflicts over the relative priority of commercial and public interests in specific cities, countryside, water basins. These conflicts and power struggles can be observed over a long time and many places, especially in context of water scarcity - the development of water supply for the city of Los Angeles in the early 20<sup>th</sup> century, for example, involved complex battles, negotiations and trade-offs between farmers, business interests and political actors.

The present conflicts range across all continents. Global corporate initiatives to promote specific approaches to water resources, such as the Water Resources Group created by the World Economic Forum, have arisen principally because companies find themselves in conflict with other users and subject to political demands. They reflect the greater power and status of corporate bodies, especially their ability to organise at global level. Their main function is to assert a corporate view of water resource issues, so that local conflicts are more likely to be resolved in favour of corporate interest. The initiatives are a form of 'ideological hegemony'.

### 3. Business impact on water resources

Commercial uses of water resources may conflict with these needs of other users and the environment (a) at times and places where water resources are scarce, so all user needs cannot be satisfied while sustaining the water sources (b) because untreated used water and other production processes pollute the environment, including water sources.

For individual companies, and for capital as a whole, the importance of each local issue is entirely economic. Water is only one factor in corporate decisions. The availability of labour, transport costs, location of mines, and cost of land are other factors which are usually of greater economic importance. The outcome of water conflicts affects the profitability of commercial activities directly - for example if abstractions by companies are limited to an amount less than the most profitable - or indirectly, for example if a company is forced to relocate a bottling plant to a location which entails higher transport costs. Thus Coca-Cola warns its shareholders that increasing demand for water means that the company "may incur increasing production costs or face capacity constraints which could adversely affect our profitability or net operating revenues in the long run."<sup>3</sup> The treatment of used water may also affect the profitability of commercial activities, to the extent that companies pay for it, either by treating it themselves or by paying taxes for the cost of treatment.

The companies concerned in conflicts over water resources are not, in general, the companies involved in privatised water supply and sanitation services. They are rather the companies which are the main consumers of water - agribusiness, drinks and food companies, and mining companies. This section reviews the conflicts between businesses operating in these sectors and local populations, in all three sectors and in different continents. The cases also show how markets in water rights are useful in resolving conflicts in favour of companies, and how companies resist recognition of rights of other users.

#### 3.1. Agribusiness: land and water grabs in Africa

Globally, agriculture is the greatest user of water resources, for irrigating fields: in the global south over 80% of water is used by agriculture. Much of this consists of small-scale farming for subsistence and supplying local markets, but a growing proportion is in the hands of companies and investors. The water demands of this agribusiness can conflict with other users of water, including local farmers. The large-scale purchasing of land concessions in Africa and elsewhere are the biggest current examples of this.

##### 3.1.1. Land and water grabs in Africa and elsewhere <sup>4</sup>

According to recent estimates by Oxfam, 227 million hectares of land in developing countries have been sold or leased since 2001, half of it in Africa, and most of it to international investors. The deals typically involve 50-99 year leases or concessions of land areas over 10,000 hectares.<sup>5</sup> Most of the investment, nearly 60%, is for biofuels; about 20% for food production; and another 20% is for mining, tourism, industry and forestry.<sup>6</sup>

They include government purchases e.g. by Egypt and Saudi Arabia in Sudan, which actually advertises overseas the opportunities for such investment. But many investments are made by international agribusiness

companies; some investments are by private equity firms such as the Egyptian firm Citadel Capital, the UK firm Sun Biofuels, and the German firm Acasis; some are by businesses in richer African countries, for example, South African farmers buying 172,000 acres of land in the Congo for export crops; and many are made by local elites.<sup>7</sup>

The World Bank argues that the land leases are a market mechanism of modernisation and development bringing land into higher value use, transferring ownership from less to more efficient producers, and enabling more food to be produced for growing populations. Critics point out that the Bank itself and the IMF forced many African countries to discontinue public investment in irrigation as part of structural adjustment programmes, and argue that the Bank understates the contribution of traditional farming practices. Little of the benefit is going to the countries themselves: governments are being persuaded to exempt investors from tax, and charge small lease fees, so that little public benefit is gained for the exploitation of local public natural resources. Secret negotiation of commercial deals “reduces scope for public scrutiny and creates a breeding ground for corruption”.<sup>8</sup>

Table 1. Investing in ‘land grabs’: states and companies, food and fuel.

Investor type	Examples	Locations	Objectives	Final market
State	China, Japan, S Korea	Africa, Asia	biofuel ,food, animal feed	Home consumers
Private investors	Europe, USA, Japan	All regions	biofuel, food, feed	Global markets

Source: based on Smaller and Mann 2009<sup>9</sup>

Water is a key factor in these deals. The grabs involve not just the land but also the water resources and the cheap local labour, to support the typical large-scale mono-crop plantations: “the notion of existing, available marginal lands is fundamentally flawed; investors are looking not only for available lands, but also lands that have sources of water.”<sup>10</sup>

This access is included in the lease contract by formalised water rights to ensure the profitability of the investment. These guarantees effectively give the investor priority over other users, and customary users rarely have any formal rights. In some cases, no charge is made: in Senegal the contract specifies that the water is free; or water supply is effectively subsidised by providing access to water from dams constructed using public finance, for example in Ethiopia and Guinea. If governments try to revise the water rights after the contracts is signed, they may be liable for compensation under a bilateral investment or trade treaty.

A report on Mali found that two contracts guarantee investors more than half of the dry season critical reserve of water and exclusivity of service in emergency situation, while other contracts take water rights for granted; the only payments for water were a charge per hectare of land, unrelated to volume; the contracts themselves place limits on government ability to act, especially in response to continuous water shortages; most deals provide access to land without any lease fees being paid; and local residents were left out of the negotiating process with their customary rights ignored.<sup>11</sup>

In the case of Procana in Mozambique the company got a 50-year lease on 30,000 ha, on which it planned to grow sugar cane using drip irrigation. Procana obtained a government guarantee for up 750m<sup>3</sup> per year “To ensure that cane production is not compromised by other potential users”. Part of this would draw on the water in the Massingir dam, whose prime use is for electricity generation for export and for local business and households – the reallocation of water transfers the risk in the opposite direction, so the government may lose export earnings, or local users may have a less reliable supply of electricity. The water for irrigation also comes from local rivers, which creates a risk of water shortages for downstream small farmers. Procana saw potential conflict over the use of the dam as a major risk factor in their investment.<sup>12</sup> In 2010 the deal with Procana was cancelled because the company could not raise the money to deliver the \$475m. investment plan: the government was reportedly looking for a new investor.<sup>13</sup>

The process also illustrates the relative disadvantage of local communities in asserting their rights to water against the claims of international companies: “African governments are signing away water rights for decades with insufficient regard for how this will affect millions of local users, including fishing, farming and pastoralist communities.” (IIED 2011, Hall R 2011)<sup>14</sup>

Some campaigns against these deals have been successful. In Tanzania, a land deal for growing biofuels was cancelled as a result of protests (Hall R 2011). In Madagascar, public protest forced the government to cancel a proposal to lease half the arable land in Madagascar to a South Korean multinational, Daewoo Logistics, and forced the government to resign as well. The campaign also forced the cancellation of a deal to physically export 1% of the Faraony river's flow to Saudi Arabia - about 260,000m<sup>3</sup> per day, for USD \$60,000 per day.<sup>15</sup>

### 3.1.2. Biofuels

The increasing use of land for biofuels has already been a factor in surging world food prices, and is placing extra demands on water resources. The growth of biofuel production in the USA is expected to account for 12% of the total growth in demand for water in the USA in the next 20 years, requiring more than twice as much extra water as municipal water supply. In the eastern USA water resources are effectively free, while growers in the western USA have to buy water rights, but even there the cost of the water resources amounts to less than 1 cent per gallon of ethanol produced from biofuels. The existence of water rights markets does not, therefore, provide a deterrent to such use of water, but rather an opportunity for the growers of such a profitable crop to outbid others with less profitable uses.<sup>16</sup> Biofuels are not a good 'green' fuel, either, when compared with other technical alternatives. A car using ethanol, the main biofuel product, uses between 4 and 10 times as much water per kilometre as a car using electricity generated from renewables.

### 3.1.3. Virtual water

The impact on water resources of the land grabs shows the limitations of the concept of 'virtual water'. This concept identifies a real effect of trade in products requiring high water input, especially food. This can in principle compensate for a relative lack of water in the importing country, so that for example an oil-producing country which is mostly desert can import food produced with water in other countries. But virtual water does not 'trickle down' from water rich countries to water poor countries, because economically poor countries with low water resources cannot afford to import water this way. In fact, trade in agricultural products containing 'virtual water' is rather dominated by a few rich countries: 4% of countries account for 80% of virtual water transfers, and the number of people experiencing water shortages has increased in recent years despite a massive increase in trade in agricultural products. So virtual water transfers are not an "economically invisible and politically silent remedy for water deficits" between countries, but rather a feature of commercial activity which may conflict with other needs for water resources within countries. Since virtual water is also embedded in biofuel crops, it is also a way of exporting water from Africa or Latin America into the fuel tanks of cars in high income countries.<sup>17</sup>

## 3.2. Mining and oil in South America

Mining and oil production affects water resources in two ways. Firstly, large amounts of water are needed for many mining operations, from drilling to washing the minerals, as well as water for the household needs of the workers. In water scarce regions where the mines are the greatest consumers of water, mining companies themselves may develop or buy the main water supply systems: "When infrastructure and management systems provided by the company are also involved in supplying local communities and rural industries, the multiple stakeholders and different values involved introduce a complexity that reflects overlapping and sometimes conflicting priorities associated with the concept of sustainable development."<sup>18</sup>

Secondly, mining processes pollute water, both as a result of adding chemicals – such as cyanide in gold mining or arsenic in uranium mining - and as a result of waste products from the mining process itself, which may also obstruct and block rivers and streams. Even modern mines in the USA pollute neighbouring streams with cyanide, selenium, copper arsenic and thallium.<sup>19</sup>

The process of 'fracking' to extract oil and gas from shale or sands is an example of both types of impact. It involves the use of water, mixed with chemicals and sand, injected under pressure to release the oil or gas. An average 'well' uses about 10,000 m<sup>3</sup> of water in this process. Some is lost underground, and may contaminate groundwater; the wastewater returned to the surface may include tonnes of chemicals, and may contaminate land and surface water.<sup>20</sup>

As a result of higher global prices for commodities, including oil, there is now greater activity and investments by mining, oil and gas extraction companies across the globe.

### 3.2.1. Chile and water rights

Two disputes in Chile are good illustrations of the conflicts. They also show how markets in water rights make the problems worse, not better, and how the privatisation of public water supplies makes it easier for companies to buy water resources.

Calama – said to be among the driest cities in the world – is in the northern region of Chile, which includes the Atacama Desert and also the main mining activities of the country. The inhabitants of Calama are protesting at the decision by the water company for the region, Aguas Antofagasta, to sell 550 litres per second of raw water from the Rio Loa, the only river in the region, to a mine owned by multinationals Xstrata and Anglo-American. The protests are based on the impact on the environment and the extra stress placed on water resources for the city. Desalination plants have been constructed to increase the available water for other mining operations, but it is cheaper for the Xstrata/Anglo-American mine to divert water from the river. Mining interests also control the public water supply: the water company is itself privately owned by Antofagasta plc, a British mining company, now majority owned by the wealthy Chilean Luksic family. In addition to the water company, Antofagasta plc also owns the regional railway system, Ferrocarril de Antofagasta.<sup>21</sup>

In the capital Santiago, there is a similar dispute. The water company, Aguas Andinas – which is also privatised - has agreed to sell 2.5m<sup>3</sup> of water per second from the Laguna Negra y Embalse del Yeso, built as a reservoir to supply drinking water for the city, to the energy multi-national AES, for a 530MW hydro-electric project, Alto Maipo. The opposition is based on protests about the environmental impact, the effect on the water supply for Santiago, and the effects on other businesses such as tourism. The Chilean parliament has asked the water regulator SISS to investigate the legality of the contract, although the government argues that there should be no interference with “acuerdos entre privados” [private contracts]. The opposition argues that this is contrary to the “the new declaration by the UN Assembly of the human right to water”.<sup>22</sup>

The water rights regime is thus part of the problem: the current legal systems, notably the law on water rights, are failing to protect environmental and human interests. It continues to be politically and ideologically contested: “competition between private and public interests have often produced unfortunate consequences because of the lack of power of the state to allocate water and to protect the public welfare... ideological conflict continues to characterize much of the discussion of water policy”. When President Bachelet introduced a constitutional reform bill to recognize water scarcity as a threat to national security, and enable the government to restrict private water rights, interest groups of large landowners such as the National Society of Agriculture denounced the bill as leading to expropriation of water without compensation.<sup>23</sup>

### 3.2.2. Ecuador, Peru and Argentina

The Supreme Court in Ecuador has recently confirmed an award of USD \$18 billion in damages against the oil company Chevron for contamination of water in the Amazon basin as a result of oil drilling activities in the 1990s by a joint venture including Texaco, now owned by Chevron. The oil drilling spilled more than 30bn gallons of toxic wastes and crude oil into Ecuador's Amazon basin. The company denies liability in the case, which has continued for 18 years already.

As well as the scale of the damage, the case illustrates how corporations are prepared to deny the legitimacy of the rights of others and of the processes by which they are enforced. The company responded to the latest court ruling by stating: “Chevron does not believe that the Ecuador ruling is enforceable in any court that observes the rule of law. The company will continue to seek to hold accountable the perpetrators of this fraud”. This was criticised by the court for ‘manifest bad faith’ and ‘abusive’ conduct, and by the lawyer for the indigenous communities as racist: “Chevron does not want to ever recognise that indigenous or poor people have the right to access justice.”<sup>24</sup>

In Peru there are over 148 conflicts between indigenous rural communities and mining companies over the use of water and the pollution caused by the mining companies. This is contrasted with a lack of priority

given to human needs: in the Puno region, only 25% have access to drinking water, but 80% of the water resources are said to be polluted. Campaigners are calling for a constitutional amendment which “recognises drinking water and sanitation as a human right whose provision should not be subject to business interests”.<sup>25</sup>

There are many similar disputes in Argentina between communities and mining companies, as well as opposition to paper mills for the same reason. Many of these disputes have continued for a decade or more.<sup>26</sup>

### 3.3. Drinks companies: impacts in south Asia and North America

The largest corporate users of water are companies selling soft drinks or beer, 90% or more of which are water with some other ingredients such as sugar, flavouring and alcohol. The largest corporate water consumers in the world include the drinks (and food) companies Coca-Cola, Pepsico, Nestle and Unilever, and the beer companies.

Table 2. Food and drinks companies with largest water consumption 2006

Company	Water Used (bn litres)	Ratio, litres of water per kg or litre of end product
Coca-Cola	288	2.4
Nestlé	155	4.1
Unilever	66	3.3
Total	613	

Source: JP Morgan<sup>27</sup>

The drinks companies also sell bottled water, which packages water from springs. Bottled water is far more costly than piped water, because transporting water in bottles is very inefficient compared with a piped water network, using 2,000 times as much energy as tap water. It is also subject to less stringent safety and quality checks than piped water, and generates large volumes of waste in the form of plastic bottles. Conflicts have occurred in North America over the impact of drinks companies on local water tables. The Perrier bottled water company (part of Nestle) was forced to close 4 of its wells in Michigan as a result of local opposition, despite hiring local public relations consultants. One reaction by the companies has been to bottle water from public supplies: as much as 40% of all bottled water sold in the USA is taken from a municipal water supply, and Coca-Cola used water from the public supply for its Dasani brand in the UK.<sup>28</sup>

#### 3.3.1. Coca-Cola and other drinks companies in India

There have been a number of conflicts in India between local communities and drinks companies abstracting water. Three examples involve bottling plants of Coca-Cola, which led to deterioration in groundwater levels, so that local people, in particular farmers, were left with less water for their own needs.<sup>29</sup>

Table 3. Groundwater impact of three Coca-Cola bottling plants in India

Location	Change in groundwater levels	
	10 years prior to Coca-Cola bottling operations	10 years since Coca-Cola bottling operations
Mehdigani	+7.95 metres	-7.9 metres
Kala Dera	-3.94metres	-25.35metres

Source: India Resource Centre<sup>30</sup>

Coca-Cola opened a bottling plant at Palakkad, Kerala, in 1999. There were complaints and protests from the local community that the plant was using excessive amounts of groundwater, causing depletion and contamination in local wells. These protests were taken up by the panchayat. The panchayats – local councils – which are a distinctive feature of government in India, are responsible for regulating the use of local resources, including water. In many parts of India panchayats are weak bodies, but in Kerala there has been a deliberate political effort by the State to decentralise money and power to these bodies, providing the elected representatives with both training and professional volunteers to support their work, as well as a system of participatory planning and budgeting. In the case of the Palakkad bottling plant, the Perumatty Panchayat which covered the area, filed a Public Interest Litigation (PIL) in the Kerala High Court, which ruled in the

panchayat's favour. As a result, Kerala's Minister for Water ordered the closure of the plant in 2004. It has not been allowed to re-open, as long as the panchayat continues to withhold permission.

The production of drinks also produces waste sludge which pollutes the environment unless properly treated. In Palakkad, Coca-Cola tried to dispose of waste by offering it as a 'free fertiliser' to local farmers. It was found to be useless as a fertiliser, and contaminated with toxic chemicals including lead and cadmium. The company only stopped distributing its waste when ordered to do so by the state government. The state of Kerala also appointed a High Power Committee of experts to investigate civil and criminal claims against Coca-Cola, which concluded that the company had depleted water resources, caused environmental damage, and could be held responsible for causing economic losses to local residents totalling Indian Rupees 216 crore (US\$ 48 million), that a special claims tribunal should be set up to facilitate such claims, and that Coca-Cola had breached a number of laws. The state government then passed a law to create the tribunal.<sup>31</sup>

Coca-Cola opened another bottling plant in Kala Dera, Rajasthan, in 2000, although the area's groundwater reserves had already been declared to be 'over-exploited' in 1998. A report by the Energy and Resources Institute (TERI) in 2008 noted that "The company's assessment of water availability in the vicinity of a bottling operation should be from a perspective that is wider than business continuity..... Siting policies need to recognize and respect the existing (formal and informal) riparian rights. For instance, the informal rights of the farmers to extract groundwater for irrigation need to be respected." It specifically condemned the opening of the plant at Kala Dera, and recommended closure as "the plant's operations in this area would continue to be one of the contributors to a worsening water situation and a source of stress to the communities around." The report also noted that: "the state governments in India have not been able to value their water resources appropriately. The water use charges levied by various state governments render this important input into the production process virtually free". Groundwater levels fell a further 3.6 metres between 2009 and 2010.<sup>32</sup>

A third plant in Mehdiganj, in the state of Uttar Pradesh, opened in 1999. The economic benefits of employment opportunities were not as great as hoped: many jobs went to workers from other areas, wages were low, and the company resisted attempts to organise its workers in unions. There were problems with wastewater: a spill in 2002 contaminated agricultural land. But the greatest problem was the depletion of groundwater by the new plant: the levels fell by 7.9 meters in 11 years, whereas previously they had been rising. A local political institution, the Lok Sabiti ('people's committee') organised protest, using the slogan "coca cola pani chor" ('Coca-Cola steals water'). The company has not negotiated with the local organisation, but rather treated it as a security problem, with police called in to arrest protestors.<sup>33</sup>

The above cases all involve Coca-Cola, but other companies have similar impacts. For example, nine out of 34 PepsiCo bottling plants in India were operating in areas officially designated as water-stressed ('over-exploited', 'critical' or 'semi-critical').<sup>34</sup>

### 3.3.2. Economic efficiency, water neutrality

Companies argue that these impacts are compensated for by other actions, by which they can become 'water neutral' or even 'positive'. Coca-Cola claims to aim at 'global water neutrality'; PepsiCo argues that overall it has a positive water balance in India: "essentially this means that we were able to give back to society much more water than we used to manufacture our products by recharging and replenishing water through various sustainable initiatives". These corporate actions fall into three categories – reducing the water footprint of their own products; supporting the water efficiency of other users; and promoting recharge schemes and rainwater harvesting. Only the third of these, however, mitigates the local impact of their water abstractions.

Coca-Cola has analysed its global water footprint, which consists of multiple local demands to produce all the ingredients in the drink. This full supply chain footprint, including for example the water used to grow sugar and other ingredients, is between 300 and 600 litres for every litre of drink produced. Nearly all of this is consumed through growing and manufacturing the various ingredients, especially sugar and vanilla. Similarly, studies by SAB Miller show that the total supply chain footprint of beer is between 45 litres and 155 litres per litre of beer. But global reductions in the water footprint of the product, for example by

reducing the water use of vanilla growers in Madagascar, does nothing at all to offset the local impact of a bottling plant in India.<sup>35</sup>

PepsiCo finances agricultural efficiency schemes and community schemes, such as rainwater harvesting, which between them save 10 billion litres of water, which the company compares with 5.8 billion litres used to produce Pepsi products in India, and argues that it is therefore 'water positive' in India. Coca-Cola has funded drip irrigation systems for 15 farmers in India. SAB Miller has financed small-scale demonstration fields for local farmers on reducing water use by greater water efficiency, use of more water-efficient plant varieties, or planting less water-intensive crops. While improving efficiency in agriculture does reduce overall demand for water, small-scale temporary donations, which are subject entirely to corporate decision-making, are not a sustainable way of delivering this. When the company decides to stop paying, the measures may become unaffordable, even for the chosen few. Moreover, the water saved by these schemes may be in different areas to the abstractions, and so does not balance the impact in terms of local availability and demand for water. It does not make sense to claim to be water neutral on the scale of a sub-continent such as India. For these water-stressed areas, recharge schemes in some other part of India are useless.<sup>36</sup>

PepsiCo and SAB Miller are in effect investing in other producers' water efficiency, but the economic return for the company is a public relations gain, improving the company's public image. This is similar to the carbon offset schemes.

One way of reducing the local impact of abstraction is to increase the rate at which the aquifer is recharged, so that the amount available for all users is increased. SAB Miller has attempted to offset the water abstraction by its brewery in Alwar, Rajasthan, by funding the construction of water recharge dams in the same locality, which it claims will raise the groundwater levels by over 9 metres by recharging about 300m litres of water per year – about the same as the annual volume extracted by the brewery. There is as yet no measurement of the actual impact. Coca-Cola has claimed that it has created an annual recharge of 1.3 billion litres in Kala Dera, without providing any evidence for the figure. Although increasing recharge of aquifers is a genuine way of reducing local water stress, these initiatives are not sustainable ways of delivering it. The companies do not have any direct economic incentive to fund such recharges - the economic return is a public relations gain from being seen to act responsibly. In effect, the incentive for water efficiency is created entirely by public campaigns against the abstractions, and by general public and political pressure for greater environmental responsibility. Finally, the companies themselves decide the scale and nature of the activity, and control the measurements, so the possibility of criticism or independent verification is reduced, and the actual benefit to the local community and aquifer is hard to verify.<sup>37</sup>

## 4. Global corporate initiatives

This context of conflicts over use of water resources is relevant to understanding why companies have been active in trying to shape debate on water resources. This section examines three major global corporate initiatives:

- the Water Resources Group (WRG) formed at the World Economic Forum
- the CEO Water Mandate, under UN auspices
- the Water Footprint Network

### 4.1. The World Economic Forum and the Water Resources Group

The World Economic Forum (WEF), held at Davos, Switzerland every year, is the main platform for business discussions of the world economy. Since 2008 it has been used to launch a series of reports by a group of multinational companies and others, now known as the Water Resources Group. It has also set up projects in India, Southern Africa, Mexico and Jordan. In 2012 it was announced that the group would become 'a new global entity as part of a new international institutional architecture on water to be hosted within the International Finance Corporation' (which is the private sector arm of the World Bank).<sup>38</sup>

The framework for this group can be seen in two questions posed at the 2012 Davos session on 'water: scarcity and stress': 'How can governments and industry collaborate to ensure that water is distributed and used as efficiently as possible?' and 'How can consumers play a role in demanding and driving change?' The

first question implies that corporations have equal status to governments on water issues, and share the single object of efficiency, rather than equality, affordability or sustainability. The second question allows people to exercise influence by buying products – but not by taking political and social action.<sup>39</sup>

#### 4.1.1. Companies

The table below sets out all the companies which have been members of the WEF group at various stages. It also shows which ones have signed up to the CEO Water Mandate. Very few are involved in privatised water supply – only Veolia, and perhaps CH2M Hill, fall into that category – and companies which dominate that sector, most obviously Suez, are missing. The other companies have no obvious interest in privatisation of public water utilities.

Instead, the majority of companies fall into two clear groups – the ‘consumers’, for whom water is a large input to their business, and the ‘service’ companies, who sell products to companies looking to conserve or manage water and wastewater. In the first group are the drinks and food companies (D), and the mining companies (M). These are the groups involved in the conflicts described in the previous section, and the persistent members of the WRG, who also appear in other initiatives such as the CEO Water Mandate, are these large consumers – Coca-Cola, PepsiCo, Nestle and Unilever. The second group includes suppliers of machinery, fertilisers or seeds which can contribute to water efficiency in agriculture (A), or water engineering and services companies (W) which provide water and wastewater technology and consultancy to others: both of these groups therefore have business interests in potential markets for water and wastewater management.

Table 4. Corporate membership of WEF Water Resources Group

	Sector	Home country	Type	WRG 2008-2010	WEF partner 2012	CEO water mandate
Alcan	Metals and mining	Canada	M	X		
Barilla	Food	Italy	D	X		
Cargill	Commodities	USA		X		
CH2M Hill	Water	USA	W	X	x	x
Cisco	IT	USA		X	x	
Coca-Cola	Drinks	USA	D	X	x	x
Dow Chemical	Chemicals	USA	A	X	x	x
Halcrow	Engineering	UK	W	X	x	
Hindustan Construction	Construction	India	W	X	x	x
McKinsey	Consultancy	USA		X	x	
Nestlé	Drinks, food	Swiss	D	X	x	x
New Holland Agriculture	Agricultural machinery	USA	A	X		
PepsiCo	Drinks	USA	D	X	x	x
RioTinto	Mining	UK	M	X	x	
SABMiller	Drinks	USA	D	X	x	x
Siemens	Engineering	Germany	A	X		x
Standard Charter	Finance	UK		X	x	
Syngenta	Seeds, pesticides	Swiss	A	X	x	x
Unilever	Food	Holland	D	X	x	x
Veolia	Water, waste	France	W	X		x
IFC	Development bank				x	
World Wildlife Fund	NGO			X	x	x

Sources: WEF, CEO Water mandate<sup>40</sup>

In addition to the companies, there are two other important participants. One is the IFC, the private finance arm of the World Bank, which in 2012 has become the hosting organisation for the group. It thus brings the

legitimacy and financial support of the World Bank. The other is a large global NGO, the Worldwide Fund for Nature (WWF), which features repeatedly in corporate-supported organisations, at global and European level. This provides the legitimacy of a civil society organisation as a participant, but one which has strong links with the corporate sector. WWF is a global association financed mainly by individual donations and legacies, but is also financed by companies and aid agencies. In 2010 it received €56 million, 11.6% of its donations, from companies and €89 million, 18.5% of its income, from governments. The WWF also has formal ‘partnerships’ on water with some companies, including Coca-Cola, SAB Miller, and IKEA. These focus on improving water efficiency in production processes: the WWF gives as an example of its success “improving the company’s [Coca-Cola’s] water efficiency 13 per cent since 2004”. It also supports corporate positions in water policy at national level. In the UK, for example, it has issued a joint statement with the regulator OFWAT on water abstraction licenses, which supports the introduction of scarcity charges but also for allowing trade in water rights: “Abstraction trading has an important role to play in the transition towards sustainable levels of abstraction. Measures that encourage the trading of water from lower to higher value uses would increase social and economic benefits to society. Trading may become important as a mechanism for responding to the increasing variability and uncertainty of climate change impacts.”<sup>41</sup>

#### 4.1.2. WRG reports

The main function of the WRG has been to produce reports.

The first report, ‘Realizing the Potential of Public-Private Partnership Projects in Water’ was published in 2008, treating the creation of PPPs as an end in itself. It discusses how the Indian Business Alliance on Water (IBAW) has been used to promote PPPs in India, and calls for a similar agency in South Africa to “help shift the mindset”. It includes PPPs involving copper, gold, coal and uranium mining companies in Botswana, Namibia, South Africa and Tanzania: “businesses for whom water development is an input to their core businesses”.<sup>42</sup>

A second report in 2008, “Managing our Future Water Needs for Agriculture, Industry, Human Health and the Environment”, outlined the potential problems for business and others of water stress, and warns of potential impacts: “What if water remains inexpensive for heavy users? What if water prices double? What if water permits for agricultural or industrial uses are revoked or restricted in response to scarcity, conflict or civil society demands?” It called for a business coalition, centred on agriculture, but including also “food, textile, and chemical companies, companies active as suppliers of seed and irrigation equipment, and financial institutions active in financing irrigation and other water infrastructure.” The stated objective was to influence political climate on water governance issues, including “how water is being allocated”, and specifically “to enable more market-based mechanisms”.<sup>43</sup>

A third report was produced for the 2009 WEF meeting, entitled “The Bubble Is Close to Bursting” in partnership with a group of drinks, food, chemicals, mining, and agribusiness multinationals, as envisaged the previous year.<sup>44</sup> This group, with some new members joining and others leaving, and together with the IFC, subsequently formed the 2030 Water Resources Group.

A more substantial report ‘Charting our Water Future’ was written for the group by McKinsey & Co in 2009, and has subsequently been treated as a key document at international conferences such as the Stockholm Water Symposium. The report develops at length an argument that there is a coming ‘gap’ between the demand and supply of water, and proposes a number of approaches to bridging this gap. These are mainly technical, involving the use of new technologies to improve agricultural water efficiency in particular, but also argues that “It is critical to ensure incentive design emphasizes the value of water productivity—for example through clearer ownership rights, appropriate tariffs, quotas, pricing, and standards”. The reference to ‘clearer’ property rights implies clear contractual rights, which, as seen in the previous section, are often used to override the unclear, uncodified traditional rights.<sup>45</sup>

The section headed ‘Pathways for the private sector’ then identifies the main consumers of water, and also the producers of technology and other solutions to improve efficiency, including seeds and fertilizer, for whom McKinsey identifies potential *markets*. This neatly reflects two of the main groups of companies involved in the WRG, who stand to gain from greater expenditure on water efficiency. But this market research is presented in a misleading chart, ‘exhibit 37’. This says it shows ‘annual expenditure’, with the

strong implication that this is expenditure by the companies concerned. But it is not: it identifies markets for these companies, and so the ‘expenditure’ is money to be spent by municipalities, farmers and local businesses – *not* expenditure by the private companies in seeds, fertilizers etc., or even investment by these companies. (The ‘exhibit’ is also a very distorted presentation of its own figures).<sup>a</sup> So when it talks about the potential for more government intervention to “make further measures economically attractive for the private sector, and thus unlock new investments”, McKinsey is simply suggesting that government policies could increase the market opportunities for the seeds, fertiliser, etc., businesses – which are strongly represented in the WRG. The investments ‘unlocked’ will be in the company’s own production of seeds or machinery – not investments in local water systems or conservation of water resources. The table below gives an undistorted presentation of the data in McKinsey’s exhibit 37, from which it is clear that 79% of the expenditure it identifies is money to be spent by farmers, the public sector and households, and the other expenditure will come from locally established businesses, not the seeds, fertiliser, etc., companies.

Table 5. Potential markets for suppliers of fertilisers, irrigation technology etc. 2010-2030 (an undistorted rendering of McKinsey’s exhibit 37) (USD \$millions)

Expenditure by:	India	China	South Africa	Brazil – Sao Paulo	Total	As % of total
Local farmers and agriculture	7141	205	28	10	7384	38
Local industry	287	3585	260	3	4135	21
Public sector and households	1714	5989	295	147	8145	41
Total	9142	9779	583	160	19664	100

Source: PSIRU calculations and McKinsey Exhibit 37

This cannot, however, justify the huge leap which McKinsey then makes to the conclusion that it: “empowers the private sector to engage meaningfully on defining the institutional mechanisms of the future”. The market analysis simply confirms the well-known fact that the private sector seeks profitable market opportunities, and would like to maximise these opportunities. It certainly does not give such entities the right, in democracies, to ‘define institutional mechanisms’.

#### 4.2. UN CEO Water Mandate: corporate risk, ‘shared’ risk and social risk

The CEO water mandate was launched as a UN initiative in 2007. It therefore predates the UN resolution on water as a human right, passed in 2010, but the possibility of such a resolution was already under discussion in 2007. The CEO mandate “recognizes that the business sector, through the production of goods and services, impacts water resources”, and so encouraged companies to endorse the mandate and ‘operate in a more sustainable manner’ and give more priority to managing water resources. It has been endorsed by 84 companies, including 14 members of the WEF group, and a number of companies in sectors which are heavy users of water such as paper and textiles. Its various reports illustrate the conceptual framework of corporate organisations. This includes the idea of ‘shared’ risk; a fear of political activity; and the acceptance of companies as members which have questionable environmental records.<sup>46</sup>

The CEO mandate makes frequent use of the idea of risk assessment. This is a widely used approach in business strategies, applied to water as it is to any other factor of production. There are now a number of online tools and websites created for this.<sup>47</sup>

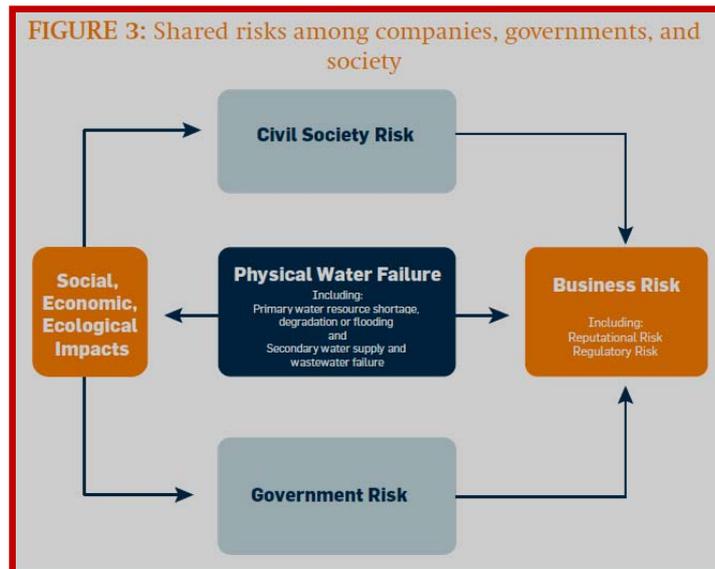
The risks for companies are identified as ‘physical risk’, the local scarcity of water itself; ‘reputational risk’ to the company’s brand image; and ‘regulatory risk’, of restrictions imposed by governments on corporate water use. The CEO Water mandate documents, the WEF publications and many other business documents on water try to extend this approach by talking about ‘shared risks’, shared between companies, governments, communities and other stakeholders. But the risks identified in these approaches remain risks

<sup>a</sup> The ‘exhibit’ is also wildly not to scale – the length of the bars is not consistent with the numbers, neither within the same country nor the same category: the bar showing China’s 103 on irrigation systems is longer than the bar showing China’s 1,204 on Domestic fixtures and appliances, and about the same length as India’s 1,076 on irrigation systems. Fortunately McKinsey’s do not claim it is a ‘chart’, but it is still shows remarkable flexibility with data.

to the company, not risks to society. The only one of these risks shared with society or the environment is the scarcity of water resources themselves, and this is not a 'shared' risk but one in which the interests of the companies conflict with others.

The diagram below, used in a number of CEO publications, expresses this vision very clearly. In the diagram, governments, civil society and the water system itself are all sources of risk for companies. Companies themselves create no risks for anyone. Companies also have no connection at all with the social, economic and ecological impacts which stem from the failure of 'physical water'. But the whole diagram is labelled 'Shared risks'.

Chart B. Business view of risks: from civil society, government and physical water



Source: CEO Mandate Guide to responsible Business Engagement <sup>48</sup>

The obvious flaw in this approach is that it fails to acknowledge material conflicts of interest between companies and society. An assessment of risks and opportunities for society produces a very different result. This would include physical scarcity, but it would also include 'corporate risk' – the risk that companies will control water resources for their own benefit at the expense of households and local farmers.

Regulation also looks very different from a social perspective. For communities and ecosystems, regulation is not a risk but a positive opportunity for democratic and peaceful limitation of competing (including corporate) behaviour. By contrast, the CEO corporate diagram above has the anti-democratic implication that companies would be subject to less risks if there was no democratic government and no civil society.

What companies call 'reputational risk' is a result of communities asserting their interests against those of companies – which is also a positive democratic achievement from social and environmental perspectives. The descriptions of reputational risk in corporate publications are clearly describing political activity. A guide for financial institutions describes it as arising: "through tensions and conflict around access to water or the degradation of local water resources. In a highly globalised information economy, public perceptions can emerge rapidly around business decisions that are seen to impact on aquatic ecosystems or local communities' access to clean water." The IFC makes the same point: "Risks arising from environmental problems or social discontent surrounding a project can be extremely costly in terms of delays and stoppages, negative publicity, threats to operating license, and significant unforeseen expenditures."<sup>49</sup>

Even if a company identifies risks, it does not necessarily avoid them. These risks are themselves assessed against opportunities for profit: so even if a course of action is identified as creating serious 'reputational risk', the company may still conclude that such a risk is acceptable if, for example, admission of moral responsibility or discontinuing the operation would lead to greater losses to the company than the cost of lost

reputation. This business decision assigns no value to the interests of others. This is one reason why the concept of a 'human right to water' is so 'sensitive' for companies.<sup>50</sup>

#### 4.2.1. Dow Chemical as a model company

The booklet on 'Corporate Water Accounting' includes a highlighted example of good practice involving one of the companies which has endorsed the CEO Water Mandate, Dow Chemical ("In 2006, the Dow Chemical Company used the WBCSD Global Water Tool and GEMI Water Sustainably Planner as the bases for a water-related risk assessment for all of its facilities worldwide").<sup>51</sup>

This choice of Dow Chemical raises interesting issues as to what is compatible with being a member of the CEO Water Mandate. The company was the principal manufacturer of napalm, used as an anti-personnel chemical weapon, and Agent Orange, a powerful herbicide used as a weapon in the US-Vietnam war, being sprayed onto forests and crops. Dow Chemical is also now the parent of Union Carbide, the company whose factory in Bhopal, India, killed 25,000 people in a poisonous gas explosion in 1984. The Indian government is seeking to re-open a lawsuit for damages over the Bhopal explosion, in response to which Dow states (as at November 2011) that although it owns Union Carbide, it is not responsible for any of its liabilities; that even Union Carbide "itself is not liable for claims related to the Bhopal tragedy....[that] the Indian courts do not have jurisdiction over [Dow] in this matter ..... [Dow] as a legal entity has never done business in India". Dow's sponsorship of the 2012 Olympic Games has been challenged by campaigners, not only on the basis of the 1984 disaster, but also claiming that: "27 years of ground-water and soil pollution from toxic waste dumped while the factory was in operation. That toxic waste has never been removed from Bhopal and continues to pollute the environment today." Dow notes media reports of groundwater tests, and refers to a 2010 assessment which Dow says is consistent with findings "that all groundwater samples tested were within drinking water standards." The campaign dares the organisers of the 2012 Olympic Games to drink water from Bhopal. Dow has also paid a fine of \$325,000 to settle an action by the US Securities and Exchange Commission alleging that a Dow pesticide subsidiary in India paid bribes of over \$200,000 to Indian officials to 'expedite the registration' of its products.<sup>52</sup>

#### 4.3. Aqueduct: a global database of corporate risk

The limitations of the corporate approach to risk can also be seen in the 'Aqueduct' project'. Coca-Cola has provided a global database for this project (also sponsored by Goldman Sachs, Dow Chemical, General Electric and Bloomberg), in which their collaborators are the World Resources Institute, Aqueduct bills itself as measuring and mapping water risk, but the notes explain that it is limited to "measuring business risks posed by water, thus drawing out elements that are relevant to business and financial institutions". So Aqueduct uses the same categories of physical, regulatory and reputational risk.<sup>53</sup>

This focus is not neutral, as can be seen in the way it treats the environment, and the way it values public debate. It does not yet (as at March 2012) include indicators on the impact on ecosystems. One commentator concerned with the eco-system of the Rio Grande River in New Mexico, USA, noted that under Aqueduct's criteria "the Rio Grande might score well for risk mitigation precisely because of the unsustainable engineering that has so dramatically harmed the river's natural functions." This was confirmed in an Aqueduct response, which added that: "An interesting area for further research might be looking at how an ecosystem approach to resilience management can reduce corporate water risks."<sup>54</sup>

Aqueduct says it plans to add indicators on eco-systems, though it is not clear if this will be done in the global dataset supplied by Coca-Cola. One of the proposed indicators is on groundwater trends, where the data itself may be contested. Another proposed indicator would fall under "regulatory and reputational risk" because of its influence on regulation and public scrutiny. As in the above diagram, the environment itself is seen as a potential source of risk, not a concern in itself.<sup>55</sup>

The database at present has just two indicators on regulatory and reputational risk, one of which is 'media coverage', defined as "the number of media reports per capita covering water-related concerns...which reflects the level of awareness of the public and media on water and how companies are handling this resource. Higher values indicate greater awareness of water issues", which is a fine description of a lively and well-informed democracy. But the database treats these higher values, this greater awareness as

“translating to business risks”, such as regulation, critical press, and lawsuits. For the WRI/Coca-Cola database, greater public awareness is a risk-creating problem –less public awareness and less media coverage, is better.<sup>56</sup>

#### 4.4. Water Footprint Network

A company’s ‘global water footprint’ is an analysis of all the water inputs to all the components in the supply chain of a product to see how much water is consumed in the whole production chain. This can then be used to find ways in which the water input, and the cost, can be reduced. The Water Footprint Network, which promotes the idea and the techniques for carrying it out, has been set up by the IFC and supported by various corporate and non-corporate partners, including, as usual, Coca-Cola, Nestle, PepsiCo, SAB Miller and Unilever.<sup>57</sup>

The idea originally comes from the use of ‘energy footprints’, which enable companies to cut their use of energy. This is not only useful to the companies in reducing the real costs of energy - it is also useful in combating climate change, because reducing the demand for energy also reduces the emission of CO<sub>2</sub>, and so helps combat global warming. It also helps reduce demand for fuels such as oil and coal, stocks of which are becoming depleted. However, there is no such global benefit from companies reducing their water footprint. Using water does not directly produce CO<sub>2</sub> emissions, so reducing water use does not affect climate change. And the world’s supply of water is not being depleted: there is the same amount of water on the planet regardless of Coca-Cola’s production policies.

It is also unlikely to deal with the problem of impacts which create conflicts with local communities. The easiest places where a company can reduce its footprint are unlikely to be the places where they are already in conflict with users. Coca-Cola have identified over 300 litres of water in their global footprint for every litre of the final drink, but it is only the single litre for the final drink which is abstracted in the bottling plants in India which conflict with the interests of those specific communities in India. Reducing water used by the farmer growing the sugar does literally nothing to reduce Coca-Cola’s demand for the final litre at the bottling plant. The general point is well stated in a CEO water mandate paper: “the baseline responsibility of companies is to ensure that their activities do not infringe on the enjoyment of the right of access to water.....a company that does not respect the right of access to water in one community where it operates cannot compensate for that failure by having an extensive philanthropic/CSR program elsewhere.”<sup>58</sup>

The concept of the global footprint is very attractive for companies. If companies do reduce the water consumed by their products, it will at least do no harm. It can only enhance the reputations of companies which make the footprint commitment. And it is also something that companies can do while continuing to ignore the interests and rights of communities with whom they are in conflict.

## 5. The human right to water

### 5.1. The UN resolution and its origins

In complete contrast to this technical and economic ideology from the corporate initiatives is the concept of a ‘human right to water’. One source was the concern for the living conditions of the poor, especially in peri-urban slums whose inhabitants lacked official property rights or tenancy rights, and as a result were being denied access to urban services including water. The UN Commission on Human Rights was persuaded to agree a comment to the effect that there was a human right to water and sanitation, thus providing important support for slum dwellers and others.

At the same time, many rural and indigenous movements, especially in Latin America, were demanding that their rights to local water resources should be recognised, to protect these resources against the impact of mining and agribusiness corporations.

The worldwide resistance to privatisation of public water supplies also adopted the argument that water services should not be put in the hands of private companies because the need for water and sanitation was too important and too fundamental for it to be dependent on commercial decisions based on profitability.

These last two groups, in particular, formed coalitions to get the human right to water adopted in national constitutions, as it was in the first democratic constitution of South Africa in 1994. Following a referendum, Uruguay included the right to water in its constitution, followed by other countries, including Bolivia.

This process culminated on 28 July 2010, when the United Nations General Assembly agreed Resolution 64/292, which recognized the human right to water and sanitation and acknowledged that clean drinking water and sanitation are key factors to the accomplishment of all human rights. The motion was moved by Bolivia, but a number of OECD countries tried to avoid the vote being taken, and considered opposition. In the end, the resolution was supported by 122 states, and opposed by none, with 41 abstaining.<sup>59</sup>

The notion is now used by many groups at local, national regional and local levels to support a range of different positions, reflecting the range of social movements involved in its development. These include demands for extension of water supply as a public service, or for eliminating or reducing charges for water, or to reject privatisation and commercialisation, or to assert that human consumption has priority, or that local subsistence farming has priority, or to insist upon traditional customs of water governance.

The common element in these positions, and the concept itself, is the assertion of equality, not only of equal needs to a fundamental element of life, but also of equal political power – democracy – and of equality before the law. This challenges the corporate position described above, because it implies that conflicts will be resolved by democratic politics, not by markets and the ‘allocation of water to higher value uses’. Water is to be governed by human rights, not corporate strategies. It also challenges the corporate reluctance seen in the case studies above, to acknowledge the rights of others, or even to respect judicial decisions which uphold those rights. As a result, the corporate response has been confused and hostile.

## 5.2. Human rights and policy capture

Following the UN decision in 2010, the CEO Water Mandate produced a paper on water as a human right.<sup>60</sup> It does not treat it as a new opportunity for businesses to demonstrate their commitment to this new right. Rather, the paper refers to “the sensitive nature of this topic”, the “uncertainty” of business responsibilities, and the “concerns” and “caution” of companies. Even in a confidential survey, only two of the companies endorsing the mandate formally acknowledged the human right to water. This was due to fears that others may use the ‘right to water’ to impose constraints on business activity: “hesitancy toward a formal corporate policy on the human right to water in many cases is driven by the ill-defined landscape of stakeholder expectations regarding what actions and outcomes will constitute a legitimate and fulfilled commitment to respect the human right to water.”

The CEO Mandate itself keeps ‘ill-defined’ society at arm’s length. Even the section on ‘Community Engagement’ only commits the companies to : “Endeavour to understand the water and sanitation challenges in the communities where we operate and how our businesses impact those challenges” and even this is limited by the phrase “where appropriate, over time”.<sup>61</sup>

Apart from this corporate nightmare of an ‘ill-defined landscape’ swarming with people with non-commercial agendas, the paper makes no mention of democratic political processes, and avoids altogether mentioning the possibility of conflicts of interest. Instead, it prefers to talk of: “shared social, political, environmental, and economic risks facing civil society, companies, and governments”. With no apparent role for democratic decision-making, and no possibility of the public interest conflicting with corporate interests, the implication is that public policy can always be aligned to corporate policies, and so it is only normal to expect governments to support corporate positions.

This may be one reason why the paper warns against the danger of “policy capture”, and in particular the dangers that some company activities “might be perceived as inappropriate or unlawful by certain stakeholders due to concerns of policy capture”. The CEO Mandate is very aware of this issue. Its Guide to Responsible Business Engagement with Water Policy includes a definition of the process: “Policy capture exists where organizations unduly dominate a policymaking process to an extent that excludes or subdues other stakeholder views, resulting in policy that favors narrow vested interests to the detriment of the public good.” It warns that the appearance should be avoided as much as the reality: “Stakeholder concerns of corporate policy capture are perhaps the largest barrier to companies playing a meaningful and responsible role in the development and implementation of water policy.”<sup>62</sup>

This anxious resistance to the concept of a human right to water can be contrasted with the response of the companies whose business is private operation of municipal water services. For these companies, conflict over rights to water resources are much less important than conflicts over the issue of privatisation itself. Public opposition to privatisation often uses the concept of a human right to water as one reason against it being subject to commercial operators, and so it is a powerful weapon in these political struggles. For the private water companies, it is therefore more important to try and blunt the use of this weapon by persuading people to reject the idea that privatisation is in conflict with human rights. And so the response of the private water companies to the UN resolution was very different: their global association, Aquafed, immediately issued a press release headed 'Private Water Operators celebrate the recognition of the Human Right to water and sanitation by the United Nations General Assembly', which even claimed that they had been "working actively with the United Nations and many other stakeholders for a decade to ensure that the Right to Water and Sanitation is recognized".<sup>63</sup>

## 6. Conclusions

The starting point of this report was that the corporate interest in water is based on from the economic function of water as an input to the companies' activities, manufacturing drinks and food, mining and oil exploration, and agribusiness. This economic use of water brings companies into conflict with communities where local water scarcity is created or exacerbated by the commercial activity. The resolution of these conflicts involves political and legal processes, and ideas and ideology matter in these arenas. Companies have an interest in promoting ideas which

The global corporate initiatives discussed above have been extremely successful. They have mobilised the economic and media resources of the companies themselves, the World Economic Forum, the World Bank and others, and these resources draw in NGOs and academic and other experts as well. This money – much of it public money – sustains a significant global community of people with a common agenda including shared risks, allocation of water resources to higher value uses, and global water footprints.

By contrast, communities in conflict with the same companies over water resources, have no remotely comparable resources. Yet the 'human right to water' has won the powerful backing of the UN, is widely referred to in local conflicts, and has a high level of public legitimacy. The global level corporate hegemony thus may have little local value. Just as the corporate 'global water footprint' has no relevance for its impact at any specific location, so global ideological dominance may be less significant when dispute resolution always happens at the local level.

It remains possible in principle for companies to choose local strategies which recognise human rights and specific water rights of local communities, and accept that decisions will be made by democratic institutions through open public debate. Companies in conflict over water resources, however, make a different judgement. As the Aqueduct database insists, public debate and public awareness are seen as threats. The company in each individual case makes an economic assessment of options, which consistently do not favour recognising human right to water or public democratic decision-making. Corporate lawyers can deliver a better return by denying liability, challenging the legitimacy of courts, and endlessly delaying the final outcome of court cases (e.g. Dow Chemical in Bhopal, Chevron in Ecuador), than they can by recognising rights and engaging in public negotiation. The economic return from 'policy capture', by providing economic and other incentives for politicians to support the corporate position, is more reliable than engaging in political processes in the public domain.

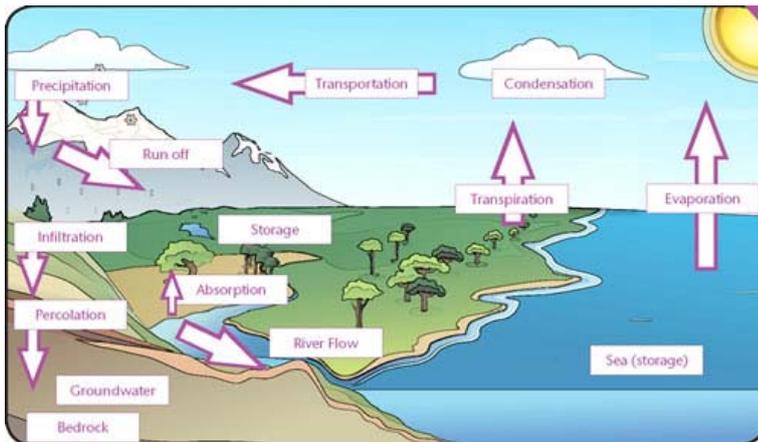
Political contests over privatisation in the water sector itself have largely been won by social organisations. It still remains unclear if corporate interests will dominate in water resource issues.

## 7. Appendix

### 7.1. Global water

The total volume of water on Earth is about 1.4 billion km<sup>3</sup>. This volume does not change: the world is not running out of water. It is not a ‘depletable’ resource like oil or gas. Water is constantly recycled through rivers to the sea and then by evaporation to form clouds and return again as rain or snow.

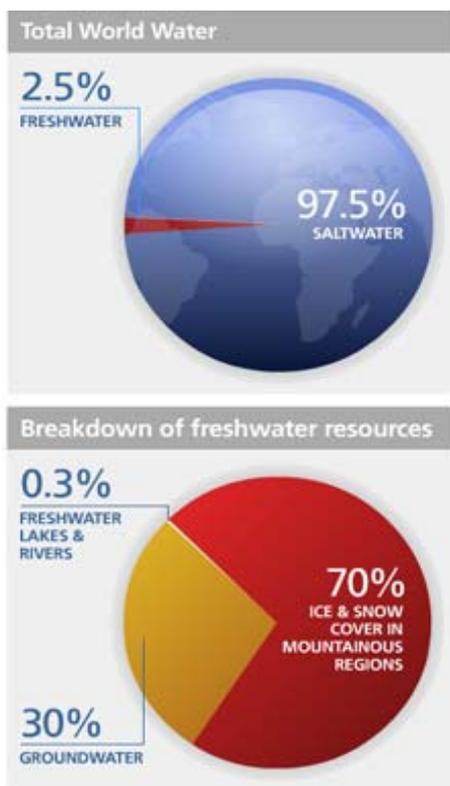
Chart C. The water cycle



Most water (97.5%) is in the sea, and not fit for drinking or irrigation. Of the remaining freshwater:

- 70% is in the form of ice and snow in mountains and Arctic/Antarctic
- Nearly 30% is in underground aquifers (“groundwater”) (10.5 billion km<sup>3</sup>)
- Only 0.3% of freshwater is in lakes and rivers (“surface water”) (105,000 km<sup>3</sup>)

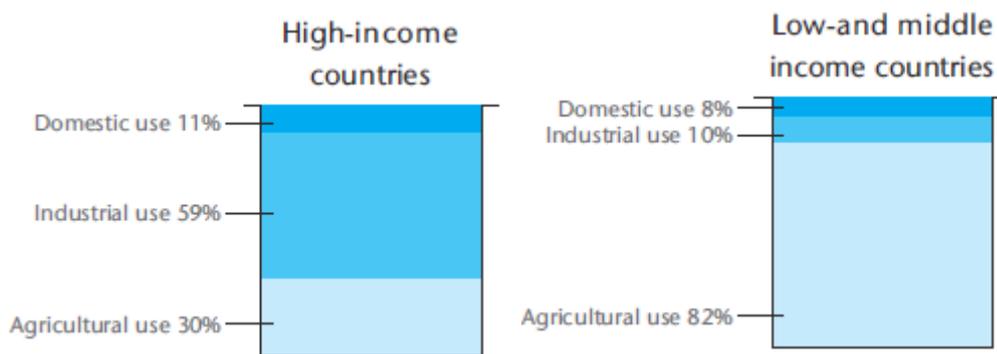
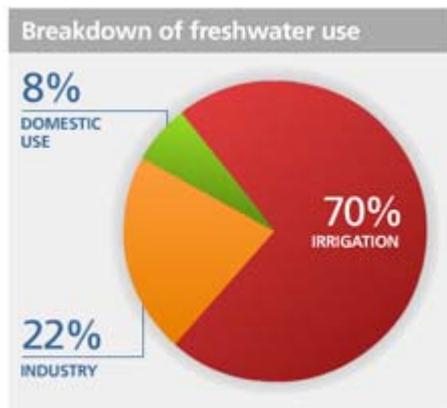
Chart D. Water



### 7.2. Global use of water

The biggest use of water in developing countries, and in the world as a whole, is by agriculture for irrigating fields. Only 8% is consumed by households. In high income countries, industry is the biggest user, accounting for nearly 60%.

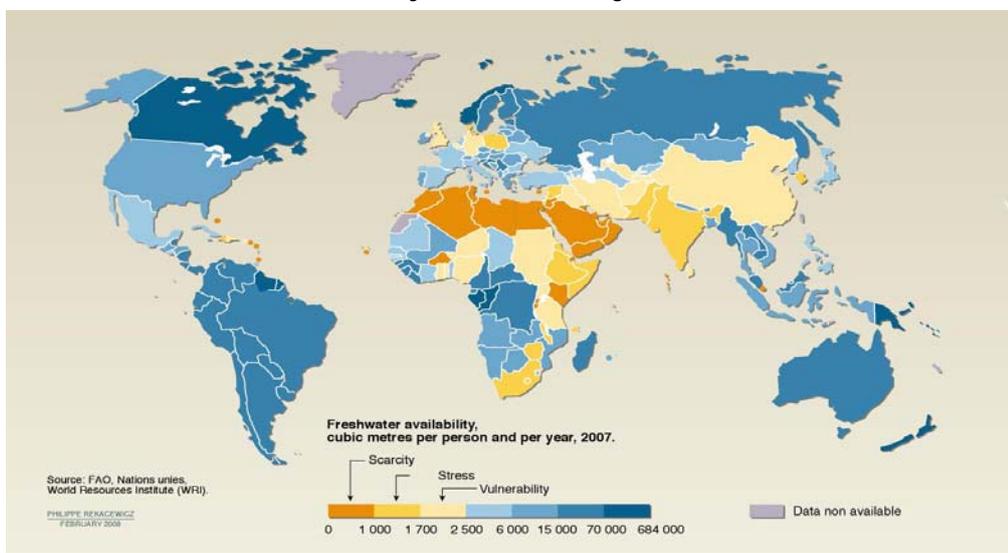
**Chart E. Different uses of water**



Sources: UN Water<sup>64</sup>

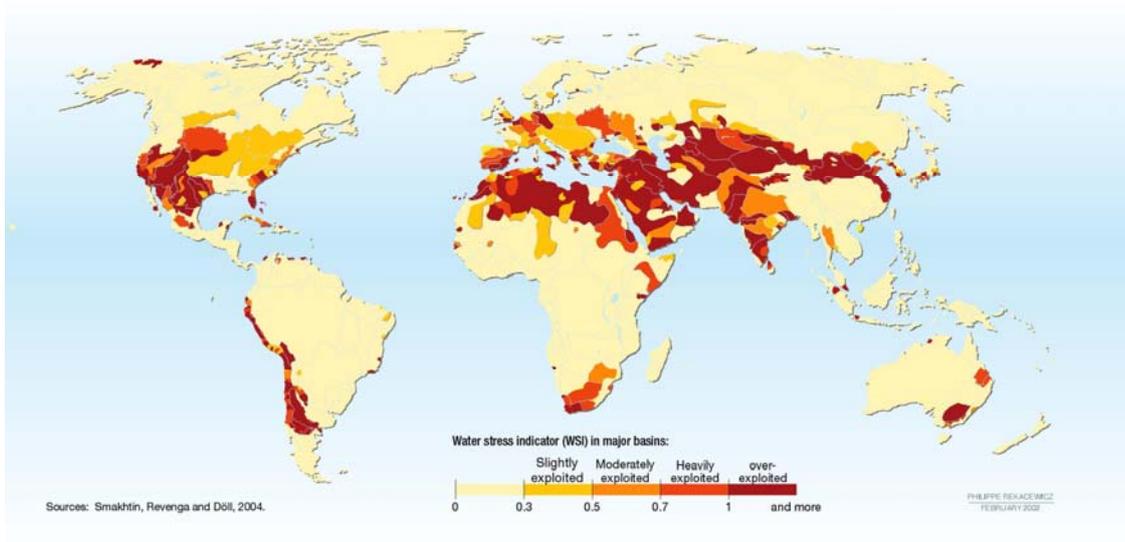
### 7.3. Water scarcity and water stress

**Chart F. Water availability in different regions**



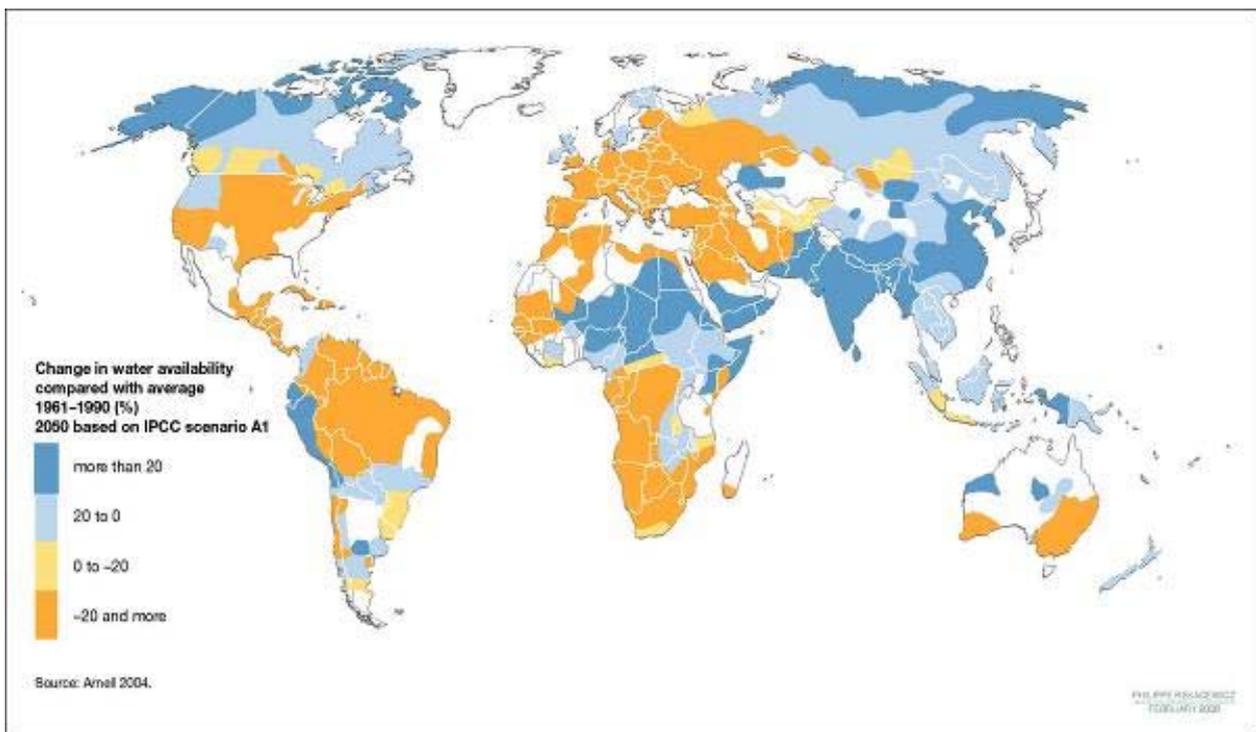
Source: UN Water<sup>65</sup>

Chart G. Water stress



Source: UN Water<sup>66</sup>

Chart H. Differential impact of climate change



Source: UN Water<sup>67</sup>

## 8. Notes

<sup>1</sup> Economist Oct 7th 2010 Deep waters, slowly drying up <http://www.economist.com/node/17199914> ; Wolf, A. et al International Waters : identifying basins at risk. [http://www.unesco.org/water/wwap/facts\\_figures/sharing\\_waters.shtml](http://www.unesco.org/water/wwap/facts_figures/sharing_waters.shtml)

<sup>2</sup> [http://www.unesco.org/water/wwap/facts\\_figures/sharing\\_waters.shtml](http://www.unesco.org/water/wwap/facts_figures/sharing_waters.shtml) Wolf, A. et al International Waters : identifying basins at risk.

<sup>3</sup> Coca-Cola 2008 Annual report 10K p.12 [http://www.thecoca-colacompany.com/investors/pdfs/form\\_10K\\_2008.pdf](http://www.thecoca-colacompany.com/investors/pdfs/form_10K_2008.pdf)

<sup>4</sup> This section draws on a number of key reports:

- World Bank 2010, Rising global interest in farmland: can it yield sustainable and equitable benefits?
- IIED 2009: Cotula, L. and Vermeulen, S., Land grabs in Africa: can the deals work for development? Briefing, September. London: International Institute for Environment and Development (IIED). <http://www.iied.org/natural-resources/key-issues/empowerment-and-land-rights/first-detailed-study-large-land-acquisitions-africa-warns-impacts-poor->
- IIED 2011 Land deals in Africa: What is in the contracts? Lorenzo Cotula <http://www.iied.org/natural-resources/media/report-shows-how-secret-land-deals-can-fail-benefit-african-nations-%E2%80%93-and-ho>
- IIED 2011 African governments signing away water rights for decades <http://www.iied.org/natural-resources/media/african-governments-signing-away-water-rights-for-decades>
- Smaller, C. and Mann, H., 2009, A Thirst for Distant Lands: Foreign investment in Agricultural Land and Water, Winnipeg, IISD, <http://www.iisd.org/publications/pub.aspx?id=1122>.
- P Woodhouse and A S Ganho 2011 Is Water the Hidden Agenda of Agricultural Land Acquisition in sub-Saharan Africa? [www.tni.org/sites/www.tni.org/files/Watergrabbing - Woodhouse paper.pdf](http://www.tni.org/sites/www.tni.org/files/Watergrabbing_-_Woodhouse_paper.pdf)
- Oxfam: Land and Power: The growing scandal surrounding the new wave of investments in land, 2011 <http://www.oxfam.org/sites/www.oxfam.org/files/bp151-land-power-rights-acquisitions-220911-en.pdf>
- Food Crisis and the Global Land Grab <http://farmlandgrab.org>
- International Land Coalition 2011 Land Rights and the Rush For Land Report <http://www.landcoalition.org/cplstudies>

<sup>5</sup> Oxfam: Land and Power: The growing scandal surrounding the new wave of investments in land, 2011

<http://www.oxfam.org/sites/www.oxfam.org/files/bp151-land-power-rights-acquisitions-220911-en.pdf> ; Ray Bush, Janet Bujra &

Gary Littlejohn (2011): The accumulation of dispossession, Review of African Political Economy, 38:128, 187-192

<http://dx.doi.org/10.1080/03056244.2011.582752>

<sup>6</sup> International Land Coalition 2011 Land Rights and the Rush For Land Report

<http://www.landcoalition.org/cplstudies> ; Kendra Patterson 2009 A Case for Integrating Groundwater and Surface Water

Management in: Troubled Waters - Climate Change, Hydropolitics, and Transboundary Resources ed. David Michel and Amit Pandya (Stimson, 2009) [http://www.stimson.org/images/uploads/research-pdfs/Troubled\\_Waters-Chapter\\_5\\_Patterson.pdf](http://www.stimson.org/images/uploads/research-pdfs/Troubled_Waters-Chapter_5_Patterson.pdf) ;

Smaller, C. and Mann, H., 2009, A Thirst for Distant Lands: Foreign investment in Agricultural Land and Water, Winnipeg, IISD,

<http://www.iisd.org/publications/pub.aspx?id=1122>

<sup>7</sup> International Land Coalition 2011 Land Rights and the Rush For Land Report <http://www.landcoalition.org/cplstudies>

<sup>8</sup> P Woodhouse and A S Ganho 2011 Is Water the Hidden Agenda of Agricultural Land Acquisition in sub-Saharan Africa?

[www.tni.org/sites/www.tni.org/files/Watergrabbing - Woodhouse paper.pdf](http://www.tni.org/sites/www.tni.org/files/Watergrabbing_-_Woodhouse_paper.pdf) ; Ray Bush, Janet Bujra & Gary Littlejohn (2011): The

accumulation of dispossession, Review of African Political Economy, 38:128, 187-192

<http://dx.doi.org/10.1080/03056244.2011.582752> ; International Land Coalition 2011 Land Rights and the Rush For Land Report

<http://www.landcoalition.org/cplstudies>

<sup>9</sup> Smaller, C. and Mann, H., 2009, A Thirst for Distant Lands: Foreign investment in Agricultural Land and Water, Winnipeg, IISD,

<http://www.iisd.org/publications/pub.aspx?id=1122>

<sup>10</sup> Saturnino M. Borras Jr, David Fig & Sofía Monsalve Suárez (2011): The politics of agrofuels and mega-land and water deals:

insights from the ProCana case, Mozambique, Review of African Political Economy, 38:128, 215-234

<http://dx.doi.org/10.1080/03056244.2011.582758>

<sup>11</sup> IIED 2011, African governments signing away water rights for decades <http://www.iied.org/natural-resources/media/african-governments-signing-away-water-rights-for-decades> ; IIED 2011 Land deals in Africa: What is in the contracts? Lorenzo Cotula

<http://www.iied.org/natural-resources/media/report-shows-how-secret-land-deals-can-fail-benefit-african-nations-%E2%80%93-and-ho> ; Baumgart, J. 2011. "Assessing the contractual arrangements of large-scale land acquisitions in Mali with special attention

to water rights". GIZ, Berlin. <http://www.oicrf.org/document.asp?ID=10052>

<sup>12</sup> Saturnino M. Borras Jr, David Fig & Sofía Monsalve Suárez (2011): The politics of agrofuels and mega-land and water deals:

insights from the ProCana case, Mozambique, Review of African Political Economy, 38:128, 215-234

<http://dx.doi.org/10.1080/03056244.2011.582758>; see also P Woodhouse and A S Ganho 2011 Is Water the Hidden Agenda of

Agricultural Land Acquisition in sub-Saharan Africa? p.13 [www.tni.org/sites/www.tni.org/files/Watergrabbing - Woodhouse](http://www.tni.org/sites/www.tni.org/files/Watergrabbing_-_Woodhouse_paper.pdf)

[paper.pdf](http://www.tni.org/sites/www.tni.org/files/Watergrabbing_-_Woodhouse_paper.pdf)

<sup>13</sup> Isilda Nhantumbo and Alda Salomão IIED, 2010 Biofuels, land access and rural livelihoods in Mozambique

<http://pubs.iied.org/pdfs/12563IIED.pdf> ; Saturnino M. Borras Jr, David Fig & Sofía Monsalve Suárez (2011): The politics of

agrofuels and mega-land and water deals: insights from the ProCana case, Mozambique, Review of African Political Economy,

38:128, 215-234 <http://dx.doi.org/10.1080/03056244.2011.582758>; see also P Woodhouse and A S Ganho 2011 Is Water the

Hidden Agenda of Agricultural Land Acquisition in sub-Saharan Africa? p.13 [www.tni.org/sites/www.tni.org/files/Watergrabbing -](http://www.tni.org/sites/www.tni.org/files/Watergrabbing_-_Woodhouse_paper.pdf)

[Woodhouse paper.pdf](http://www.tni.org/sites/www.tni.org/files/Watergrabbing_-_Woodhouse_paper.pdf) ; Agencia de Informacão de Mocambique, 28 November 2008. Biofuel project wants Mozambican labour

<http://allafrica.com/stories/200811280929.html>

<sup>14</sup> IIED 2011 African governments signing away water rights for decades <http://www.iied.org/natural-resources/media/african-governments-signing-away-water-rights-for-decades> ; Smaller, C. and Mann, H., 2009, A Thirst for Distant Lands: Foreign

<http://www.iied.org/natural-resources/media/african-governments-signing-away-water-rights-for-decades> ; Smaller, C. and Mann, H., 2009, A Thirst for Distant Lands: Foreign

- investment in Agricultural Land and Water, Winnipeg, IISD, <http://www.iisd.org/publications/pub.aspx?id=1122> ; Ruth Hall (2011): Land grabbing in Southern Africa: the many faces of the investor rush, Review of African Political Economy, 38:128, 193-214 <http://dx.doi.org/10.1080/03056244.2011.582753>
- <sup>15</sup> Madagascar cancels water deal with Saudi Arabia 14 Nov 2009 <http://farmlandgrab.org/post/view/8908>
- <sup>16</sup> SANDIA REPORT SAND2011-0168 January 2011 Biofuel Impacts on Water Vince Tidwell, Amy Cha-tein Sun, Len Malczynski <http://prod.sandia.gov/techlib/access-control.cgi/2011/110168.pdf> ; The water footprint of biofuel-based transport Winnie Gerbens-Leenes\* and Arjen Y. Hoekstra Energy Environ. Sci., 2011, 4, 2658 [www.waterfootprint.org/Reports/GerbensLeenes-Hoekstra-2011-WaterFootprintBiofuelbasedTransport.pdf](http://www.waterfootprint.org/Reports/GerbensLeenes-Hoekstra-2011-WaterFootprintBiofuelbasedTransport.pdf)
- <sup>17</sup> S. S. Suweis, M. Konar, C. Dalin, N. Hanasaki, A. Rinaldo, and I. Rodriguez-Iturbe 2011 structure and controls of the global virtual water trade network GEOPHYSICAL RESEARCH LETTERS, VOL. 38, L10403, doi:10.1029/2011GL046837
- D A Seekell, P D'Odorico and M L Pace 2010 Virtual water transfers unlikely to redress inequality in global water use 2011 Environ. Res. Lett. 6 024017 <http://iopscience.iop.org/1748-9326/6/2/024017> [http://iopscience.iop.org/1748-9326/6/2/024017/pdf/1748-9326\\_6\\_2\\_024017.pdf](http://iopscience.iop.org/1748-9326/6/2/024017/pdf/1748-9326_6_2_024017.pdf) ; HYDROPOLITICS IN THE DEVELOPING WORLD: A SOUTHERN AFRICAN PERSPECTIVE Anthony Turton & Roland Henwood (editors) 2002 African Water Issues Research Unit (AWIRU) Introduction Chapter 2 Water resources in semi-arid regions: Real deficits and economically invisible and politically silent solutions Tony Allan. P.23
- <sup>18</sup> 2003 Water use and sustainable development in coal mining – a case study from central Queensland [http://www.csrsm.uq.edu.au/docs/MCA\\_SOTA.pdf](http://www.csrsm.uq.edu.au/docs/MCA_SOTA.pdf)
- <sup>19</sup> Earthworks 2008 Modern Mining Needs a Modern Mining Law <http://www.earthworksaction.org/files/publications/ModernMiningFINAL.pdf?pubs/ModernMiningFINAL.pdf>
- <sup>20</sup> Andrews, Anthony et. al. (2009). "Unconventional Gas Shales: Development, Technology, and Policy Issues". Congressional Research Service <http://www.fas.org/sgp/crs/misc/R40894.pdf>
- <sup>21</sup> El Ciudadano (Chile) 31 Jan 2012 Mineras e hidroeléctricas amenazan el agua potable <http://www.elciudadano.cl/2012/01/31/47744/mineras-e-hidroelectricas-amenazan-el-agua-potable/> ; Codelco es Noticia 12 Jan 2012 Polémica venta de agua de Calama a Minera Collahuasi [http://www.prensaminera.cl/index.php?option=com\\_content&view=article&id=5532:polemica-venta-de-agua-de-calama-a-minera-collahuasi&catid=40:calidad-de-vida&Itemid=59](http://www.prensaminera.cl/index.php?option=com_content&view=article&id=5532:polemica-venta-de-agua-de-calama-a-minera-collahuasi&catid=40:calidad-de-vida&Itemid=59)
- <sup>22</sup> El Ciudadano (Chile) 31 Jan 2012 Mineras e hidroeléctricas amenazan el agua potable <http://www.elciudadano.cl/2012/01/31/47744/mineras-e-hidroelectricas-amenazan-el-agua-potable/> ; Business News Americas - English, January 31, 2012 [Gener eyeing 530MW Alto Maipo construction tender in H1](http://www.bna.com/Gener-eyeing-530MW-Alto-Maipo-construction-tender-in-H1) ; Global Power Report, June 9, 2011 AES Gener secures water rights to build 531-MW hydro plant in Chile, Latin America
- <sup>23</sup> Water Law, Mining And Hydro-Energy Conflicts In South America: Tales From The Andes And Patagonia Victor M Tafur 2011 Special Edition International Journal of Rural Law and Policy 1 Water Law: Through the Lens of Conflict <http://www.rurallawandpolicy.edu.au/journal/index.php/ijrlp/issue/view/3/showToc>; Borzutzky, S. and Madden, E. F. (2011), MARKETS AWASH: THE PRIVATIZATION OF CHILEAN WATER MARKETS. Journal of International Development. doi: 10.1002/jid.1802 <http://onlinelibrary.wiley.com/doi/10.1002/jid.1802/full>
- <sup>24</sup> ENS 04 Jan 2012 Ecuadorian Court Confirms \$18 Billion Chevron Damage Award <http://www.ens-newswire.com/ens/jan2012/2012-01-04-02.html> ; Guardian 04 Jan 2012 Chevron accused of racism as it fights Ecuador pollution ruling <http://www.guardian.co.uk/business/2012/jan/04/chevron-accused-racism-ecuador-pollution?INTCMP=ILCNETTXT3487> ; Guardian 14 Feb 2011 Chevron fined \$8bn over Amazon 'contamination' [www.guardian.co.uk/business/2011/feb/14/chevron-contaminate-ecuador](http://www.guardian.co.uk/business/2011/feb/14/chevron-contaminate-ecuador)
- <sup>25</sup> El Ciudadano (Chile) 1 Feb 2012 Peruanos inician gran marcha por el agua y contra la minería <http://www.elciudadano.cl/2012/02/01/47775/peruanos-inician-gran-marcha-por-el-agua-y-contra-la-mineria/>
- <sup>26</sup> El Ciudadano (Chile) 29 Jan 2012 Cada vez más conflictos ambientales en la Argentina <http://www.elciudadano.cl/2012/01/29/47678/cada-vez-mas-conflictos-ambientales-en-la-argentina/>
- <sup>27</sup> JP Morgan 2008 Watching water A guide to evaluating corporate risks in a thirsty World [http://pdf.wri.org/jpmorgan\\_watching\\_water.pdf](http://pdf.wri.org/jpmorgan_watching_water.pdf)
- <sup>28</sup> BBC 16 June 2004 Coke's water bomb <http://news.bbc.co.uk/1/hi/business/3809539.stm> ; The Environmental Magazine December 9, 2003 Despite the Hype, Bottled Water is Neither Cleaner nor Greener than Tap Water <http://www.organicconsumers.org/foodsafety/water121003.cfm> Responsible Research 2010 Beverages in Asia [http://www.responsiblebusiness.com/Beverages\\_in\\_Asia-Issues\\_for\\_Responsible\\_Investors.pdf](http://www.responsiblebusiness.com/Beverages_in_Asia-Issues_for_Responsible_Investors.pdf); IGL 2011 Valuing Water: How Can Businesses Manage the Coming Scarcity? [http://knowledge.wharton.upenn.edu/papers/download/031611\\_valuingwater.pdf](http://knowledge.wharton.upenn.edu/papers/download/031611_valuingwater.pdf)
- <sup>29</sup> Responsible Research 2010 Beverages in Asia [http://www.responsiblebusiness.com/Beverages\\_in\\_Asia-Issues\\_for\\_Responsible\\_Investors.pdf](http://www.responsiblebusiness.com/Beverages_in_Asia-Issues_for_Responsible_Investors.pdf); India Resource Center [www.indiaresource.org](http://www.indiaresource.org)
- <sup>30</sup> India Resource Center September 21, 2011 [PRESS: Water Levels Continue Dropping Sharply Around Coca-Cola Plant in Kala Dera](http://www.indiaresource.org/press-releases/2011/09/21/press-water-levels-continue-dropping-sharply-around-coca-cola-plant-in-kala-dera) ; India Resource Center April 25, 2011 [PRESS: Sharp Drop in Groundwater Levels Around Coca-Cola Bottling Plant](http://www.indiaresource.org/press-releases/2011/04/25/press-sharp-drop-in-groundwater-levels-around-coca-cola-bottling-plant)
- <sup>31</sup> Georgina Drew 2008 From the Groundwater Up: Asserting water rights in India. Development, 2008, 51, (37–41) [http://www.conflicts.indiawaterportal.org/sites/conflicts.indiawaterportal.org/files/Asserting\\_Water\\_Rights\\_in\\_India.pdf](http://www.conflicts.indiawaterportal.org/sites/conflicts.indiawaterportal.org/files/Asserting_Water_Rights_in_India.pdf) ; Government of Kerala 2009. Constitution of a High Power Committee [http://www.groundwater.kerala.gov.in/english/pdf/go\\_tor.pdf](http://www.groundwater.kerala.gov.in/english/pdf/go_tor.pdf) ; India Resource Center July 3, 2010 [Government Moves to Claim \\$48 Million Compensation from Coca-Cola](http://www.indiaresource.org/press-releases/2010/07/03/government-moves-to-claim-48-million-compensation-from-coca-cola) ; Responsible Research 2010 Beverages in Asia [http://www.responsiblebusiness.com/Beverages\\_in\\_Asia-Issues\\_for\\_Responsible\\_Investors.pdf](http://www.responsiblebusiness.com/Beverages_in_Asia-Issues_for_Responsible_Investors.pdf) ; BBC 25 July 2003 Coca-Cola's 'toxic' India fertiliser [http://news.bbc.co.uk/1/hi/world/south\\_asia/3096893.stm](http://news.bbc.co.uk/1/hi/world/south_asia/3096893.stm) BBC 25 July 2003 Coca-Cola's 'toxic' India fertiliser
- <sup>32</sup> TERI 2008 Executive summary of the study on independent third party assessment of Coca-Cola facilities in India <http://www.teriin.org/upfiles/projects/Coca-cola-ES.pdf>

- <sup>33</sup> Georgina Drew 2008 From the Groundwater Up: Asserting water rights in India. Development, 2008, 51, (37–41) [http://www.conflicts.indiawaterportal.org/sites/conflicts.indiawaterportal.org/files/Asserting\\_Water\\_Rights\\_in\\_India.pdf](http://www.conflicts.indiawaterportal.org/sites/conflicts.indiawaterportal.org/files/Asserting_Water_Rights_in_India.pdf)
- <sup>34</sup> BBC 13 September 2011 The technology of saving India's precious water supply <http://www.bbc.co.uk/news/business-14847808> ; SAB Miller Working with farmers to save water <http://www.sabmiller.com/index.asp?pageid=2045>; PepsiCo Corporate Citizenship Report 2010-11 <http://pepsicoindia.co.in/Download/Pepsi%20Citizenship%20Report-%202010-11.pdf>; India Resource Center 30 Nov 2011 Deception with Purpose: PepsiCo's Water Claims in India <http://www.indiaresource.org/news/2011/pepsipositivewater.html>; Ercin, A.E., Aldaya, M.M. and Hoekstra, A.Y. (2011) Corporate water footprint accounting and impact assessment: The case of the water footprint of a sugar-containing carbonated beverage, Water Resources Management, 25(2): 721-741 <http://www.waterfootprint.org/Reports/Ercin-et-al-2011-CorporateWaterFootprint-Softdrink.pdf>
- <sup>35</sup> Responsible Research 2010 Beverages in Asia [http://www.responsiblesearch.com/Beverages\\_in\\_Asia-Issues\\_for\\_Responsible\\_Investors.pdf](http://www.responsiblesearch.com/Beverages_in_Asia-Issues_for_Responsible_Investors.pdf); Ercin, A.E., Aldaya, M.M. and Hoekstra, A.Y. (2011) Corporate water footprint accounting and impact assessment: The case of the water footprint of a sugar-containing carbonated beverage, Water Resources Management, 25(2): 721-741 <http://www.waterfootprint.org/Reports/Ercin-et-al-2011-CorporateWaterFootprint-Softdrink.pdf>
- <sup>36</sup> BBC 13 September 2011 The technology of saving India's precious water supply <http://www.bbc.co.uk/news/business-14847808> ; SAB Miller Working with farmers to save water <http://www.sabmiller.com/index.asp?pageid=2045>; PepsiCo Corporate Citizenship Report 2010-11 <http://pepsicoindia.co.in/Download/Pepsi%20Citizenship%20Report-%202010-11.pdf>; India Resource Center 30 Nov 2011 Deception with Purpose: PepsiCo's Water Claims in India <http://www.indiaresource.org/news/2011/pepsipositivewater.html>; Ercin, A.E., Aldaya, M.M. and Hoekstra, A.Y. (2011) Corporate water footprint accounting and impact assessment: The case of the water footprint of a sugar-containing carbonated beverage, Water Resources Management, 25(2): 721-741 <http://www.waterfootprint.org/Reports/Ercin-et-al-2011-CorporateWaterFootprint-Softdrink.pdf>; Responsible Research 2010 Beverages in Asia [http://www.responsiblesearch.com/Beverages\\_in\\_Asia-Issues\\_for\\_Responsible\\_Investors.pdf](http://www.responsiblesearch.com/Beverages_in_Asia-Issues_for_Responsible_Investors.pdf)
- <sup>37</sup> BBC 13 September 2011 The technology of saving India's precious water supply <http://www.bbc.co.uk/news/business-14847808>; SAB Miller Working with farmers to save water <http://www.sabmiller.com/index.asp?pageid=2045>; PepsiCo Corporate Citizenship Report 2010-11 <http://pepsicoindia.co.in/Download/Pepsi%20Citizenship%20Report-%202010-11.pdf>; India Resource Center 30 Nov 2011 Deception with Purpose: PepsiCo's Water Claims in India <http://www.indiaresource.org/news/2011/pepsipositivewater.html>
- <sup>38</sup> <http://www.weforum.org/issues/water#note>
- <sup>39</sup> [http://www3.weforum.org/docs/AM12/WEF\\_AM12\\_ProgrammeWeb.pdf](http://www3.weforum.org/docs/AM12/WEF_AM12_ProgrammeWeb.pdf)
- <sup>40</sup> <https://members.weforum.org/pdf/water/WaterInitiativeFutureWaterNeeds.pdf> , <http://ceowatermandate.org/about/endorsing-companies/>, [http://www3.weforum.org/docs/IP/MM/Water\\_Resources\\_Group\\_Phase2\\_4pager.pdf](http://www3.weforum.org/docs/IP/MM/Water_Resources_Group_Phase2_4pager.pdf), <http://www.weforum.org/issues/water#note>, [http://www.powerbase.info/index.php/2030\\_Water\\_Resources\\_Group](http://www.powerbase.info/index.php/2030_Water_Resources_Group)
- <sup>41</sup> WWF-INT Annual Report 2010 [http://assets.panda.org/downloads/int\\_ar\\_2010.pdf](http://assets.panda.org/downloads/int_ar_2010.pdf); WWF-UK and Ofwat (Water Services Regulation Authority): joint statement on pathways to sustainable abstraction 2009 [http://www.ofwat.gov.uk/competition/review/res\\_ofw\\_090917wwfabstract.pdf](http://www.ofwat.gov.uk/competition/review/res_ofw_090917wwfabstract.pdf)
- <sup>42</sup> WEF 2008 Realizing the Potential of Public-Private Partnership Projects in Water [http://www3.weforum.org/docs/WEF\\_WI\\_PublicPrivateProjects\\_2008.pdf](http://www3.weforum.org/docs/WEF_WI_PublicPrivateProjects_2008.pdf)
- <sup>43</sup> WEF 2008 Managing our Future Water Needs for Agriculture, Industry, Human Health and the Environment <https://members.weforum.org/pdf/water/WaterInitiativeFutureWaterNeeds.pdf>
- <sup>44</sup> WEF 2009 "The Bubble Is Close to Bursting" <https://members.weforum.org/pdf/water/WaterInitiativeFutureWaterNeeds.pdf>
- <sup>45</sup> [http://www.2030waterresourcesgroup.com/water\\_full/Charting\\_Our\\_Water\\_Future\\_Final.pdf](http://www.2030waterresourcesgroup.com/water_full/Charting_Our_Water_Future_Final.pdf)
- <sup>46</sup> [http://www.unglobalcompact.org/Issues/Environment/CEO\\_Water\\_Mandate/](http://www.unglobalcompact.org/Issues/Environment/CEO_Water_Mandate/)
- <sup>47</sup> See for example JP Morgan 2008 Watching water: A guide to evaluating corporate risks in a thirsty world. [http://pdf.wri.org/jpmorgan\\_watching\\_water.pdf](http://pdf.wri.org/jpmorgan_watching_water.pdf). For websites see GRI Aqueduct set up by GRI, Coca-Cola, Goldman Sachs, GE, Dow, etc <http://projects.wri.org/aqueduct/framework>; Aqua Gauge framework and tool for assessing corporate water risk management <http://www.ceres.org/issues/water/aqua-gauge/aqua-gauge>
- <sup>48</sup> CEO Mandate Guide to Responsible Business Engagement with Water Policy November 2010 [http://ceowatermandate.org/files/Guide\\_Responsible\\_Business\\_Engagement\\_Water\\_Policy.pdf](http://ceowatermandate.org/files/Guide_Responsible_Business_Engagement_Water_Policy.pdf)
- <sup>49</sup> WWF/DEG 2011 Assessing Water Risk: A Practical Approach for Financial Institutions [http://assets.panda.org/downloads/deg\\_wwf\\_water\\_risk\\_final.pdf](http://assets.panda.org/downloads/deg_wwf_water_risk_final.pdf); IFC - Sustainability - Managing Environmental and Social Risks [http://www1.ifc.org/wps/wcm/connect/Topics\\_Ext\\_Content/IFC\\_External\\_Corporate\\_Site/IFC+Sustainability/Risk+Management/](http://www1.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/IFC+Sustainability/Risk+Management/)
- <sup>50</sup> Corporate Water Accounting – An Analysis of Methods and Tools for Measuring Water Use and its Impacts A stocktaking and assessment of existing and emerging water accounting methods and tools being used in the private sector. (UNGC/UNEP/Pacific Institute, 2010) [http://ceowatermandate.org/files/corporate\\_water\\_accounting\\_analysis.pdf](http://ceowatermandate.org/files/corporate_water_accounting_analysis.pdf)
- <sup>51</sup> Corporate Water Accounting – An Analysis of Methods and Tools for Measuring Water Use and its Impacts A stocktaking and assessment of existing and emerging water accounting methods and tools being used in the private sector. (UNGC/UNEP/Pacific Institute, 2010) [http://ceowatermandate.org/files/corporate\\_water\\_accounting\\_analysis.pdf](http://ceowatermandate.org/files/corporate_water_accounting_analysis.pdf)
- <sup>52</sup> Lorraine Close Will Lord Coe Take the Bhopal Water Challenge? Huffington Post 17/1/12 [http://www.huffingtonpost.co.uk/lorraine-close/london-2012-bhopal-water-challenge\\_b\\_1208832.html](http://www.huffingtonpost.co.uk/lorraine-close/london-2012-bhopal-water-challenge_b_1208832.html) ; Dow Q&A 28 Feb 2011 [http://www.dow.com/sustainability/debates/pdfs/QA\\_Issuance\\_Notice\\_with\\_respect\\_Curative.pdf](http://www.dow.com/sustainability/debates/pdfs/QA_Issuance_Notice_with_respect_Curative.pdf); Dow Chemical <http://www.dow.com/sustainability/debates/pdfs/TDCC-Response-CP-111811.pdf>; The Platts Petrochemical Report February 16, 2007 Dow to pay \$325,000 penalty for India corruption charge
- <sup>53</sup> Aqueduct: Measuring and mapping water risk <http://insights.wri.org/aqueduct/welcome>

- <sup>54</sup> <http://insights.wri.org/aqueduct/2011/10/closer-look-aqueducts-new-global-water-stress-maps>
- <sup>55</sup> [http://docs.wri.org/aqueduct/water\\_risk\\_atlas\\_indicators.pdf](http://docs.wri.org/aqueduct/water_risk_atlas_indicators.pdf)
- <sup>56</sup> [http://docs.wri.org/aqueduct/water\\_risk\\_atlas\\_indicators.pdf](http://docs.wri.org/aqueduct/water_risk_atlas_indicators.pdf)
- <sup>57</sup> [www.waterfootprint.org](http://www.waterfootprint.org)
- <sup>58</sup> Water and Human Rights: Exploring the Roles and Responsibilities of Business March 2009 Salil Tripathi and Jason Morrison  
[http://ceowatermandate.org/files/research/Business\\_Water\\_and\\_Human\\_Rights\\_Discussion\\_Paper.pdf](http://ceowatermandate.org/files/research/Business_Water_and_Human_Rights_Discussion_Paper.pdf)
- <sup>59</sup> UN GA/10967 28 July 2010 [General Assembly Adopts Resolution Recognizing Access to Clean Water, Sanitation](http://www.un.org/News/Press/docs/2010/20100720100729.htm)
- <sup>60</sup> UN CEO Mandate 2010 The Human Right to Water: Emerging Corporate Practice and Stakeholder Expectations  
[http://ceowatermandate.org/files/Water\\_Mandate\\_Human\\_Rights\\_White\\_Paper.pdf](http://ceowatermandate.org/files/Water_Mandate_Human_Rights_White_Paper.pdf)
- <sup>61</sup> [http://ceowatermandate.org/files/Ceo\\_water\\_mandate.pdf](http://ceowatermandate.org/files/Ceo_water_mandate.pdf)
- <sup>62</sup> [http://ceowatermandate.org/files/Guide\\_Responsible\\_Business\\_Engagement\\_Water\\_Policy.pdf](http://ceowatermandate.org/files/Guide_Responsible_Business_Engagement_Water_Policy.pdf)
- <sup>63</sup> Aquafed press statement 29 July 2010 [http://www.aquafed.org/pdf/UNGA-RTWS\\_AquaFed\\_Press%20Release\\_Pc\\_Rev1\\_EN\\_2010-07-29.pdf](http://www.aquafed.org/pdf/UNGA-RTWS_AquaFed_Press%20Release_Pc_Rev1_EN_2010-07-29.pdf)
- <sup>64</sup> [http://www.unwater.org/downloads/Water\\_facts\\_and\\_trends.pdf](http://www.unwater.org/downloads/Water_facts_and_trends.pdf);  
<http://www.fao.org/nr/water/aquastat/globalmaps/index.stm>
- <sup>65</sup> <http://www.unep.org/dewa/vitalwater/article69.html>
- <sup>66</sup> <http://www.unep.org/dewa/vitalwater/article77.html>
- <sup>67</sup> <http://www.unep.org/dewa/vitalwater/article155.html>