

ECCR Open Debate: `Water Sustainability: The Challenge to Business`

ECCR's 2007 open debate was held at Methodist Church House, London, on 27 September 2007. Water shortages are a major environmental challenge. How can companies, particularly in water-thirsty industries, manage water use sustainably? What more needs to be done? ECCR brought together speakers from the business and environment sectors and an audience of faith-based and responsible investors, corporate responsibility and sustainability practitioners, justice and peace groups, and other members of civil society.

Stephen Hucklesby, Methodist Church Secretary for International Affairs and ECCR Board member, welcomed speakers and audience, and introduced Claire Foster, National Policy Adviser to the Archbishops' Council of the Church of England, to chair the debate.

Claire Foster remarked on the degree to which planet Earth, 80 per cent of its water, has been `re-plumbed' by human activity. Our increasing impact on the world's water resources and flows amounted to that of a `rogue species' with too much power and insufficient wisdom. The challenge facing society and business was considerable.

Tom Le Quesne (WWF-UK): `Challenges and risks to global freshwater sustainability`

Human water usage constitutes the biggest pressure on water ecosystems. 70 per cent of global water use is for food production – mainly irrigation to feed the growing human population, directly or via the production of animal foodstuffs. Water availability is the chief constraint on food production.

One fifth of the world's energy is produced by hydroelectric power, with a direct effect on downstream ecosystems, leading in some cases to major river systems drying up, such as the US/Mexican Rio Grande. Use of hydroelectric power is set to increase significantly. The social and environmental impacts of large dams are of considerable concern.

With increased interest in biofuels, water is being switched from food production to biofuel crops. This has reduced the production of staple foodstuffs, leading to price increases that impact on the poorest communities.

Overall the world has enough water, even projected to 2050 when the world population is likely to reach 10 billion. Much of the water is in the right place to support equitable use sustainably, although there is also a great deal in places such as Canada and Russia where it is not needed in such vast quantities.

Major problems arise when water `ownership' is in the hands of a corruption-prone government or political elite, or a corporation. In such cases, access for local communities may be refused, restricted or allowed only at a high price. Inequitable access is often a source of local conflict.

Much of our food, and cotton for our clothes, is therefore the product of an unjust process of allocation of user rights. Solutions lie in political decision-making and in the position taken by corporations. Major companies must do more than seek water-efficient production; they should also address social and equity issues.

The right to water is increasingly also a matter for socially responsible investors.

Jacob Tompkins (Waterwise): `Water demand: options and innovations for effective stewardship`

Water is a simpler issue than climate change. Abstracting water from its natural sources damages ecosystems, with fewer uncertainties surrounding the nature and distribution of damage than with climate change.

Average UK water consumption is 3,500 litres per person per day. An average household sees around half a tonne of water purified, delivered, used and taken away daily. This is a huge amount, with an added embedded energy cost and carbon footprint from purification and transport. Most domestic water is used for central heating and other domestic appliances, including baths and showers; a third is flushed down toilets; little over 1 per cent is drunk.

People in the UK could cut individual consumption by around a third by eliminating wasteful practices. Water is wasted because it is thought of as free and abundant.

In fact, the densely populated UK is more water stressed than many people realise. London's 'water footprint' is huge. Not only southern England suffers drought, but also southern Scotland. UK demand is predicted to rise by around 1 per cent a year, which is unsustainable. Consumer trends in the luxury market have seen shower appliances capable of discharging 1,000 litres a minute, and other wasteful designs.

Waterwise is working with manufacturers to produce water-efficient yet desirable goods, including an efficient shower head which mixes the water stream with air. It also distributes a simple timer device to remind people how long they spend in the shower. The code for sustainable homes has been an opportunity to introduce more water-efficient practices, but most reductions can be achieved through simple changes in personal and domestic habits.

Domestic appliances have made big strides in energy efficiency, so water efficiency is now often the key differentiator between models.

As UK water resources become overstretched through rising demand, we increasingly source our food abroad. In effect, we are 'exporting drought' to food-supplying countries.

David Gardner (The Co-operative Farms): 'Water stewardship in the farming sector'

The Co-operative Farms cover some 70,000 acres in England and Scotland, producing foodstuffs, especially for the Co-op's own stores. Concerns around water relate to pollution, abstraction and flood management.

Point sources of pollution have largely been cleared up. More important now is diffuse pollution, with pollutants washing through different systems. Nitrate and phosphate are particularly problematic and cause nutrient enrichment. This produces algal blooms in rivers and lakes which render life impossible. Pesticide contamination has appeared in 7 per cent of samples tested.

Other problem pollutants include animal-dung-borne pathogens resulting from livestock wading in rivers and lakes or from run-off from yards and manure heaps. These pollutants are carried by sediments that settle at the bottom of rivers and destroy fish. Sediments carry phosphorus and pesticides. Risk factors include slope, soil type, rainfall and land use.

Government has taken the initiative to improve management, both by legislation and by voluntary codes of practice. Approaches include catchment sensitive farming, and soil, nutrient and manure management plans

The Co-op has its own initiatives, such as minimum cultivation. By avoiding ploughing and cultivating only the surface soil, nitrification is reduced. Precision farming methods and nitrogen models are used. The nitrogen requirement is calculated based on previous applications of fertilisers, so that only the required amount is applied.

The Co-op also practises roof water harvesting, advises other farmers, registers its sprayer operating staff nationally, tests sprayers, and practises careful crop protection management. To keep water abstraction as low as possible, reservoirs are filled in winter when rivers are in flood, and trickle irrigation is used, taking less water than spray or flood irrigation. In future, water protection zones are expected to be introduced by the government.

Nicole Lander (Dairy Crest): 'Water minimisation in the food and drink industry'

Dairy Crest's business covers the production of dairy products such as milk, cheese and spreads. It has 17 manufacturing sites across England and is the leading producer of spread for France and Italy. The UK's largest milk deliverer, it takes milk to 1.6 million homes, which means some 500 million bottles each year.

Dairy Crest is addressing water sustainability by reducing the water-to-milk intake. Water comes into the factories in the milk and also via mains water, boreholes, wells and collection and use of rainwater. Output of water is through waste water, which is limited as much as possible, in processed food and through steam and evaporation. Water is recycled as far as possible. Both water-related costs and environmental impact are constantly monitored.

The company's showpiece factory is the £49 million Davidstow Creamery, which has greatly improved water efficiency. Davidstow processes 1.6 million litres of milk per day and 55,000 tonnes of cheese a year using milk from mainly local farms. Water-to-milk intake has been reduced by 50 per cent by reducing evaporation.

Milk pasteurisation at Dairy Crest's Foston Dairy has had an independent water audit by a leading consultancy. Considerable further water savings have been identified through technical modifications, using alternatives to mains water to rinse drains, and replacing old steam traps.

Milk bottles are an environmentally benign way to deliver milk. Between 5 and 10 per cent of the water from washing bottles is reused to wash crates. The amount of water used to wash one bottle is equivalent to a can of Coca Cola.

The company is committed to protecting the environment and seeks to use resources efficiently, minimise waste, and reuse and recycle water wherever possible. As with other food and drink suppliers, Dairy Crest is under pressure from retailers to improve its corporate responsibility performance.

Questions and discussion

Questions and observations from the audience, with responses from the panel, followed.

Where privatisation of water supplies in developing countries has had harmful social impacts, are these the responsibility of the host government or of the multinational water company involved?

Tom Le Quesne (TLQ): The privatising trend is coming to an end, along with this issue, which has been blown out of proportion. But water supply and sanitation in developing countries involve major problems. WWF advocates local people having first call on water use, with environmental concerns secondary, and water for industry and production taking third priority. Who pays for infrastructure is problematic, but people should not be excluded because of inability to pay.

Jacob Tompkins (JT): Water provision is not a matter of private versus public. The UK has various models of provision, governed by an effective regulatory framework. We need to ensure similar standards in developing countries. Multinationals don't want to cause negative impacts. Difficulties arose because companies and host governments did not take into full account difficulties of providing water to poor communities. To meet the problem, they raised water prices. Global standards should

ensure that all water users receive a basic supply free. Successful examples of privatisation exist, such as in Casablanca, Morocco.

How optimistic are panel members regarding the rate at which we are improving water sustainability?

David Gardner (DG): We are improving sustainability in the UK. In developing countries there are serious concerns about water extraction in rural areas, where water tables are falling.

Nicole Lander (NL): The outlook is positive. Corporate responsibility is increasingly mainstream. Companies continue to improve performance.

TLQ: The global picture is mixed. Good policies are emerging in developing countries, but will they be properly implemented?

JT: Positive developments include defeat of Spain's national hydrological plan and the ejection of Coca Cola from Kerala, India. Negative trends include water-wasteful appliances in luxury markets and China's plans to reverse the flow of some rivers – with potential consequences similar to the Aral Sea.

UK water privatisation unleashed human greed, and effects in developing countries have been similar. What will become of the infrastructure when contracts are handed back to governments in 20 years' time?

JT: It depends on the companies. Water treatment plants in India have not worked well because of poor electricity supply. The companies will not be permitted to hand over failing infrastructure, however. Thames and Suez increasingly enter into local partnerships, which helps avoid some of the problems. Societies are learning how to manage these issues better.

Among the impacts of climate change, glaciers are disappearing, reducing freshwater availability. How will climate change impact on water globally?

DG: This is increasingly a major issue, with potentially huge impact, and difficult to manage. Communities relying on glaciers will be hard hit. Temperature rises will change rainfall patterns.

TLQ: Pressures are mounting on freshwater even in the UK. Intermittent droughts and floods harm rivers. How will communities in South and East Asian countries that depend very largely on Himalayan glaciers and rivers survive?

Claire Foster (CF): Society will need to adapt, and companies must plan to deal with shocks.

NL: Although the nature of the crises to come is hard to predict, companies will need to plan for more extreme weather events. Dairy Crest helped distribute bottled water during this year's west of England floods.

How do you educate people to ensure they use water-efficient domestic appliances?

JT: Water-efficient appliances are increasingly available. They need to be made 'eco-chic' and desirable. Spin, style, glamour can help. Waterwise and retailer B&Q are running a good campaign on water efficiency.

Most developing countries lack the UK's well-developed infrastructure. Should multinationals operating abroad do more to help?

DG: The Co-op applies an ethical sourcing approach, with links to Fair Trade. Wealth needs to be created across society in developing countries to support environmental protection. Wealth creation brings problems but also provides resources to tackle environmental problems.

TLQ: It is not always possible to wait for wealth creation before addressing environmental damage. We need to look after freshwater now. The people who suffer most when rivers dry up are the poorest.

The food miles involved in transporting milk to Dairy Crest's plant and then distributing the produce must be enormous.

NL: About 200 Dairy Crest supplier farmers are based near the plant, which was located in the area to reduce food miles. Home milk delivery using electric vehicles and reusable glass bottles is environmentally friendly. The company is experimenting with a new online service for households to order home delivery of a range of produce.

DG: The food miles debate can be simplistic. Centralisation may be more energy efficient than large numbers of small-scale local deliveries. It remains to be proven whether UK or overseas food production is more water- and energy-efficient. Milk production's biggest carbon footprint comes from nitrogen fertiliser use.

Large amounts of water are wasted in supply by utility companies. Can supply be made more efficient?

JT: The UK's supply leakage rate has fallen significantly and is now around the European average. The difficulty is that the infrastructure is old. But there is now significant investment. Besides good government regulation, people should actively engage with the water companies and make them more accountable.

Claire Foster closed the debate, thanking panel speakers and audience for a lively and informative discussion.