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## Water: conserving our most precious resource

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**Water: conserving our most precious resource  
26 – 28 October 2012**

**Summary**

This was a thoughtful discussion on a vital and still neglected issue. While there was enough fresh water in the world overall, its distribution did not match that of the global population. Climate change, continuing population growth, urbanisation and altered dietary habits were all exacerbating existing problems of fresh water availability. But there was little new action at national or international level, though local and private sector decisions were making a difference in some places. In the end we might have to take the water to the people rather than expecting the people to go to the water, as had historically been the case. But this would mean much bigger investments than were currently contemplated.

The biggest single issue remained putting a true value on water, financially and in other ways, and allocating and pricing it accordingly. Progress here remained slow at best. The private sector might get ahead of governments and academia by starting to take seriously the water risks they faced, and pricing it into their investment and other decisions.

The nexus of water, food and energy was seen as a valuable lens through which to look at the issues. Most water by far still went to agriculture, so that changing the habits of farmers and food producers was crucial, preferably through the right kind of incentives. On the energy side, the linkages were complex, but at the end of the day energy producers had to pay a reasonable price for their high water consumption (hydropower was obviously a special case). The tantalising possibility of 'arbitrage' between water, energy and food was raised but not properly explored.

Public and private sectors needed to work together, rather than being seen as competitors. Water allocation and regulation had to be in the hands of public authorities, for legitimacy and accountability reasons, but the private sector then needed to be helped to find profitable ways of providing services and investing in infrastructure.

On the international side, we saw regional action as more likely to be productive than, for example, a new global water body. But international standards and norms could play a bigger role than currently. New 'Sustainable Development Goals' about water storage capacity and reduction of damage from water-related disasters could also be helpful. Big dams should not be excluded in looking at storage issues.

We identified no easy solutions but a number of pointers to the right directions for future action. Better international exchanges of ideas and best practice are still needed. But the biggest challenge remains lifting political eyes above the short term.

**Introduction**

Ditchley and Las Vegas are concepts which do not usually meet in the same sentence, but holding a conference on water in the most water-stressed area of the US made a lot of sense. Having a Chair most of whose working life had been dedicated to managing and conserving water in this area made

even more sense. We were therefore in the right place with the right leadership at an important moment. A side trip to see the Hoover Dam was a real life reminder of the impact of infrastructure on water management, and what could be done with determination, resources, and political will. We had assembled a diverse group of players, with 17 nationalities around the table, which made for a wide-ranging and fascinating discussion. As always not everyone we might have wanted was there on the day – more politicians and more private sector water consumers, not least food companies and farmers, would have helped. But we did our best to ensure that their perceptions and views were factored in.

### **The essence of the problem**

We know that water is basic to all life, and that our future depends on managing it better. Why then does so little seem to be happening to deal with major issues staring us in the face: wasteful use of scarce fresh water supplies; pollution and environmental degradation of water sources; lack of investment in basic water infrastructure, particularly in developing countries; continuing lack of access to clean water and sanitation of much of the world's population; the effects of climate change and population growth on water availability.

The answer around the table seemed to be that senior politicians around the world still did not take the issue seriously. They were certainly not willing to spend the necessary resources on it. There seemed to be several explanations for this. In many countries, though by no means all, the crisis in water supply was not yet sufficiently manifest, and could still be ignored. Knowledge and data about what was really happening were seriously inadequate, which complicated the task of making the case. And communication from experts was perhaps not well-judged: instead of essentially negative messages about the effects on poverty and development of poor water management, a more positive and dynamic narrative about the crucial importance of water for economic growth and investment might have more impact.

As at the last Ditchley conference on water in 2005, the basic perception was that we had enough fresh water to supply even a much bigger world population. But it was not distributed evenly in any sense, and that unevenness was being exacerbated by the effects of climate change, by continuing population growth in some of the poorest and most water-stressed parts of the world, and by dietary habits which tended to consume ever more water. The often-heard claim that the amount of water in the world did not change was incidentally challenged as far as fresh water is concerned – glaciers and snow-pack which contain 70% of the world's fresh water are melting, and groundwater stocks are also being depleted. Salt water stocks are therefore rising at the expense of fresh water.

We discussed whether the biggest threat to water availability and access came from climate change, or from population rise and changing dietary and other habits, such as eating more meat. We could not resolve this, but could agree that climate change was exacerbating the other trends – at the end of the day, climate change was all about water in one way or another. We believed that the global hydrological cycle was accelerating, but we had few hard facts about how or how fast. In any case, whether or not we believed human agency was involved, the climate was changing and the need to adapt to this was clear and urgent in the water area. This was what made politicians' current insouciance so frustrating – time was running out for serious remedial action.

The historic response to lack of water was migration. However this was increasingly difficult to envisage, given the political resistance to large-scale population movements across borders. If the people could not go to the water, we would have to move the water to the people. This would require massive investments and meant maximising use of existing and future technologies. We were not even at first base in this area, either in government projects or commercial trading. There was certainly no sign of the huge resources required becoming available, either from the public or private sectors, for example for ideas such as moving water from the Democratic Republic of Congo to refill Lake Chad.

Many participants thought that the most fundamental problem remained the difficulty of putting a true value on clean water, and the associated challenge of persuading people that there was a price they had to pay for its availability, reflecting both the financial cost of the services provided, and the environmental cost of using fresh water resources, including the cost of not using it wisely. Even in advanced developed countries we were mostly still a long way from success in either area, and in most developing countries the kind of processes which could lead to this had barely started.

Was water a local or global issue? The immediate problems were almost always local, but the consequences of our action, or inaction, could be and often were global. National boundaries usually meant little where water was concerned. The essential level for sensible water policy was the basin. Cooperation between those living in and around a basin and using its water was vital. We also agreed that solutions could and should often be sought at regional rather than national or global level.

### **Water, food and energy**

The nexus, or triangle, of water, food and energy was much discussed. Most participants saw it as an essential lens through which to view water problems, though some pointed out that there were other vital angles such as land or environment which also needed to be factored in. We were constantly and rightly reminded that at least 70% of fresh water was consumed by agriculture – and the figure might rise to 90% if we included the whole food supply chain. Unless we fully involved farmers and food producers in the solutions we were seeking, we would only be dabbling round the edges. It was particularly hard to bring farmers to accept the need to pay a realistic price for water, or to reduce their consumption. They constituted, around the world, formidable political lobbies. Nevertheless, a growing world population meant much greater food needs, which meant much greater use of water. This would quickly prove unsustainable if nothing changed.

Technology could be part of the solution, through more precise irrigation techniques, better-adapted crop varieties, use of GMO, varieties, more targeted use of fertiliser, desalination, and so on. Reducing food waste, estimated at 40%, would automatically reduce water waste too. Changing dietary habits so that less water-intensive food was grown and consumed could also make a huge difference. We should encourage small-holder farmers more, for example in Africa, But even more fundamental was behaviour change by farmers – which was also the most difficult nut to crack. So what was most needed was incentives, financial or otherwise, to induce them to change their behaviour. Another way forward was to eliminate subsidies, or at least reduce them and target better those that remained. Subsidies which created an illusion that water was free or cheap, or encouraged inappropriate crop production in water-stressed areas, should be stopped.

While markets were largely water-blind, one promising avenue towards valuing water properly was coming from the major food production companies, and other big private sector consumers. Some of them had begun to look seriously at their water consumption, and the availability of water for their production processes, and to factor the true costs into their calculations, for example about future investments. They were way ahead of governments and the academic/scientific world in many ways. Other parts of the private sector could follow. One participant suggested that the world would in the end be saved by accountants changing the rules about water costs, not by water experts.

On the energy side the calculations were complex. Lots of water was needed to produce energy, but lots of energy was also needed to produce and distribute water. Hydropower did not usually consume water, and often made it available for other uses. But other energy processes did consume water, at least in the sense that water used had to be reprocessed afterwards before it could be used by others. Obvious examples were nuclear power and 'fracking' to extract shale gas. How was the balance to be struck here? Again the key had to be ensuring that energy producers paid a proper price for the water they used/consumed. We also discussed biofuels briefly. Second generation biofuels, using 'stalks' rather than the crops themselves, were a way out of the problem of taking land out of food production,

but might not solve the water issues in the same way. Much depended on the crop and the geography: sugar cane for ethanol in Brazil was for example a different issue from corn in the US.

It was suggested that one way of ensuring that water costs were properly reflected, and private resources mobilised, was to exploit the 'arbitrage' possibilities presented by the nexus, in other words the trade-offs which could be made between litres of water, calories of food and kilowatts of power. There was a good deal of interest in this concept but unfortunately we never quite got into the detail of what it might mean, and how such a system might work in practice.

## **Water and urbanisation**

We all knew that the world was urbanising rapidly, particularly the developing world. Cities consumed much less water than agriculture but the population was rising dramatically in many cases, and the difficulties of maintaining access to enough fresh water, recycling what is used, and promoting sensible and reasonable use were increasing accordingly. Again, changing the true cost of water had to be the key to long-term success, as well as incentivising conservation (as Las Vegas had done so successfully, for example). But the challenges in developing countries remained huge.

This led us on to a discussion of the roles of public and private sectors in areas such as these. There was a consensus that old arguments about the efficiency of the private sector v. the incompetence of the public sector were no longer relevant, if they ever had been. The roles could and should be complementary. Ownership was less important than the right skills and technology. Public-private partnerships were the best way forward in many contexts, though good examples were still too rare. In any case we agreed that basic decisions about allocation had to be left in the hands of public authorities, since only they had the legitimacy and accountability to take such decisions. Thereafter private sector companies could play a vital role in providing efficient and cost-effective services, as long as the charging regimes and regulatory oversight were appropriate.

But this left the issue of financing large-scale investments. Private sector companies could not be attracted to putting in the necessary resources unless the costs could be recovered, which implied high charges, hard to sell politically, and long-term contracts. The public sector could in theory raise finance more cheaply than the private sector, and had the responsibility to provide basic infrastructure for citizens, but politicians were unwilling to face up to the need for such large investments in an area they did not take seriously enough, and taxpayers were also often unconvinced of the value for money. Leaks were for example invisible – and so was action to fix them. Showing consumers that investment directly benefitted them was therefore vital, as was persuading private sector investors that there really were good investment and profit opportunities in this sector.

There were no magic solutions here, or one-size fits-all recipes. Rather the problems had to be addressed in their specific contexts, and the right mixture of public responsibility, private enterprise, and regulatory control established and pursued. Communities had to decide how much risk they could reasonably and responsibly take in the area of water, and make decisions accordingly. Getting the right people round the table and agreeing a way forward was the key.

## **International approaches**

As in the 2005 conference, there was little or no support for a new international water body, even though there was an obvious gap where one should be. The fear was that this would only add extra discussion and bureaucracy in return for few practical results. Although better and more widely respected international standards and norms would be highly desirable, and helpful for governments and communities trying to take sensible decisions, experience so far, for example over the still un-ratified 1997 UN Convention, was not encouraging. The point was that the immediate problems were

essentially local, and required local solutions, and the global context was too broad to be easily applicable, even though we knew local decisions had global consequences. Nevertheless there was significant support for more trans-border, basin-wide approaches, and for regional consideration of water issues.

We looked at where there could be international agreement on new water-related objectives, particularly in the context of the Millennium Development Goals (MDG), due to expire in 2015, and what might replace them. We were agreed that the existing MDG aims in the water and sanitation field were well-meaning, but inadequate and un-measurable. Future 'Sustainable Development Goals' should fully reflect water concerns. Two possible, measurable, objectives were identified:

- (i) a specified significant increase in storage capacity in developing countries, for example doubling it in the relevant time period. This would require significant investment, but was possible, as countries like Ethiopia had shown. The resulting increase in resilience would be invaluable.
- (ii) A specified reduction of country losses from water-related disasters – floods, droughts and landslides – for example below a certain percentage of GDP such as 10%. Reducing the losses by a certain percentage would be another possible approach.

Discussion of the value of increasing storage led on to the issue of dams. Many participants believed that it was time to rehabilitate the idea of large dams, and look again at their benefits in terms of controlling flooding, hydropower, storage and irrigation. Of course the environmental and displacement problems could not be glossed over, but it was time to challenge the automatic presumption against building new large dams. This was not to ignore the potential benefits of smaller dams, including check dams at village level to prevent rainwater run-off. The point was that dams of different sizes could be appropriate for different contexts.

Others thought a renewed focus on big dams could well prove a wild goose chase – the combination of raising the money and overcoming the local objections would make nearly all such projects unmanageable in any reasonable time frames. Storage also needed to be looked at in the round. It was not all about surface water. Soil moisture and groundwater were also extremely important.

## **Trade**

The question of trade in water came up in various guises. Direct trade in water, within and between countries, was still scarcely developed but would need to increase if the uneven distribution of water resources, potentially exacerbated by climate change, was to be overcome – moving water to people, however difficult, rather than the other way round, was likely to be a better option.

But water was also traded in less visible ways. Agricultural commerce was essentially an exercise in trading 'embedded' water, just as commerce in manufactured products could be seen to be an exercise in trading carbon emissions. We thought the concept of 'virtual' water was a valuable tool in looking at this, but one which was so far under-exploited. More 'granularity' was needed. As with carbon, the trick was how to set a value or price on the water concerned, and help ensure that water-intense crops were grown where this made sense, not in water-stressed areas. This would be helped by getting rid of, or at least reducing, e.g. US and EU agricultural subsidies, which seriously distorted markets.

## **Recommendations**

Not surprisingly in such a complex and difficult area, we identified few easy answers. Indeed I detected much frustration that discussion of water often seemed to be going round in circles, with little forward progress or resulting action. There was a strong feeling in several quarters round the table that

discussions between water experts were not enough – we needed other actors, new ideas, out-of-the-box thinking, people from sectors who too often seemed water-blind.

Nevertheless some clear pointers emerged from the discussion:

- Better data about water is essential. If anything our knowledge about what is happening has gone backwards in some ways and some areas. Too many governments still see water data as a state secret.
- Setting a realistic value and price on water, financially and in other ways, remains fundamental to progress. What is not paid for is never truly valued.
- Communications and messaging are powerful tools which are being consistently under-used at present. The link between water availability and higher growth/productivity needs to be emphasized. The water 'narrative' can also be emotionally appealing if done right, including between generations.
- Politicians need to be sensitised much more to the strategic importance of water, particularly in economic terms, but also from a security point of view.
- Countries need national strategic plans for water, but effective planning can only be done on a regional basis in many cases.
- Basin authorities are the most important building blocks for good policy-making.
- Doing something about water means above all doing things with farmers and food producers, and incentivizing them to change behaviour – preferably through increased productivity, not just enforced conservation.
- The private sector is in many ways ahead of others in its appreciation of the risks surrounding water availability and quality. Risk appreciation and management may be a good way into the crucial area of putting a real value on water.
- Pricing and allocation/quotas are both powerful tools to influence water use. They are complementary, not alternatives.
- Public authorities should remain in control of the important allocation decisions. The private sector can then aim to provide efficient services within that framework.
- Climate change is a reality, and adaptation measures are needed now. Uncertainty over causes and impacts must not be allowed to prevent vital decisions being taken.
- Reducing the impact of climate/water related disasters is a crucial objective for the future, and should be part of the planned Sustainable Development Goals (SDGs) from 2015.
- Greater water storage, particularly in developing countries, is essential to improve resilience, and should again be a specific SDG for the future. Among the many ways of doing this, the possibility of building large dams should come back on the agenda.
- More professional expertise and capacity, including hydrologists, are needed, especially in developing countries.
- Technology still has much to offer e.g. in areas like desalination, irrigation techniques, crop varieties, smart metering. But it needs to be combined with the right incentives, financial and otherwise.
- Despite many conferences on water, there is still not enough real international exchange of ideas and best practices.
- Best practices are available and should be studied: for example Singapore and Korea for national government policies; the Danube Basin and Great Lakes for cross-border water management.

## **Conclusion**

Water remains an under-appreciated and under-valued resource. The risk is that we will only come to see its true importance and value when it is too late. As in other fields of global cross-cutting significance, such as energy and the environment, the experts are aware of what needs to be done but are too often voices crying in the wilderness, while politicians concentrate on the short term. Changing this is the biggest need but also the most difficult challenge.

*This Note reflects the Director's personal impressions of the conference. No participant is in any way committed to its content or expression.*

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