WWF-UK
Registered office
Panda House, Weyside Park
Godalming, Surrey, GU7 1XR

Tel: +44 (0)1483 426444
Fax: +44 (0)1483 426409
info@wwf.org.uk
wwf.org.uk

Rio +20: Water – five key messages

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Summary

- Securing food, water and appropriate energy for all is one of the great challenges of this century. Better management of freshwater - rivers, lakes and aquifers - is fundamental to meeting this challenge.

- Well-managed, climate-resilient freshwater systems will provide a flow of clean water for downstream users and for maintaining the aquatic ecosystem. Governments should ensure that national and local water allocation frameworks are in place to ensure good management.

- Freshwater systems which cross national boundaries present a particular challenge requiring effective international co-operation. The 1997 UN Watercourses Convention should be brought into force to provide a framework for such cooperation.

- Public and private sector investment in water storage and hydropower needs to take account of the role and value of the natural water infrastructure. Engineered infrastructure should be based on international standards of good practice.

- Increased coherence of policy for agriculture, energy, climate adaptation and water management should underpin water allocation frameworks and infrastructure investments. It is critical to strengthen institutions which can inform and implement climate-resilient water management decisions.

Context

1. The availability of freshwater will impact on food and energy security.

Demand for food and energy is set to increase massively over the next decade. Agricultural water demand is likely to increase by 70% by 2050[1]; energy demand will rise 60% by 2030 compared to 2002[2]. At the same time climate change will affect water resources changing the amount, frequency and intensity of rainfall. Addressing the food-water-energy nexus is now a global priority.

[1] Comprehensive Assessment of Water Management in Agriculture. 2007. *Water for Food, Water for Life: A Comprehensive Assessment of Water Management in Agriculture.* London: Earthscan, and Colombo, International Water Management Institute
[2] International Energy Agency). 2006. *World Energy Outlook 2006*. Paris: Organisation for Economic Co-operation and Development, and International Energy Agency

2. Adopting and implementing national policies which prioritise the maintenance of water flow in rivers and through lakes and aquifers is critical, especially in the face of changes in climate.

During the 20th Century, the Yellow River, the Murray-Darling and many other rivers have run dry; the Aral Sea has all but disappeared. Socio-economic, political and environmental impacts have been profound. Freshwater biodiversity has declined rapidly. Many countries, such as South Africa, Pakistan and Mexico, now have water laws which prioritise the maintenance of river flows along with water for basic human needs. Water allocation is best implemented through frameworks which ensure the allocation is environmentally sustainable, socially equitable and economically efficient.

3. Management of rivers which cross national boundaries is a particular challenge. International tensions fuelled by competing water demands are likely to increase unless there is effective cross-border cooperation. These tensions can undermine water, food and energy security. Sustainable cross-border water allocation, supported by appropriate international agreements and institutions, is even more necessary than ever.

There are 263 international rivers and lakes, encompassing territory in 145 countries, which cover almost half of the Earth's surface, support around 40% of the world's population, and generate about 60% of global freshwater flow[3]. The 1997 UN Watercourses Convention, which is not yet in force, would help ensure sustainable, equitable and productive water allocation across national boundaries. The UK should accede to the Convention and promote wider ratification.

4. The natural infrastructure of rivers, wetlands and aquifers can help store water, grow food and mitigate flooding. Dams and other built infrastructure can complement this, including through hydropower. We now have the knowledge to design and build the right type of dams in the right places and to manage them to balance social, economic and ecological benefits.

Aquifers, wetlands, lakes and rivers store, clean and transport water. They provide fish protein for hundreds of millions of people across the globe; they soften the impacts of floods; and, critically, they transport sediment to replenish the deltas and coasts on which many of our greatest cities are built. Properly valuing this natural infrastructure is central to 21st Century water management. Engineered infrastructure can be useful but historically many mistakes have been made in the siting, design and operation of the world's 50,000 large dams. Public and private institutions can use tools such as the Hydropower Sustainability Assessment Protocol to guide infrastructure investment which optimises benefits while minimising adverse impacts.

5. Political and business decisions regarding food, water and energy security need to be based on information and policy options developed jointly across agriculture, trade, energy, climate, environment and water sectors. Key to this is investment in stronger water management institutions which gather data, provide robust technical advice, and implement policy decisions.

There will inevitably need to be trade-offs between water use for food and for energy but good information and joined-up policy development are needed for reaching decisions. Funding for adaptation to climate change provides an opportunity to strengthen institutions which provide advice or implement policies as means of enhancing resilience. This will help ensure water allocation and infrastructure development are overseen by competent water management authorities capable of balancing trade-offs between short-term energy and agricultural water demands and the longer-term need to maintain river flows and other ecosystem services.

Contact	Dave Tickner or Penny Evans
Email/Tel	dtickner@wwf.org.uk, pevans@wwf.org.uk
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[3] Human Development Report. 2006. *Beyond scarcity: Power, poverty and the global water crisis.* New York: UNDP, 2006