Wetlands Matter: Valuing wetland ecosystems in a changing climate

International Symposium, 24 February 2011, Edinburgh

Communiqué

"**Wetland conservation, management and restoration offer essential and effective strategies for climate change mitigation and adaptation, particularly though the role of wetlands in regulating the water cycle, on which all life depends. At the same time, wetlands are themselves vulnerable to change, and increased efforts are required to conserve and restore them in all countries. Methods for assessing the full value of the services provided by wetlands are becoming better developed, and this is key to informed decision-making on these issues.**"

This was the consensus reached by over 100 government representatives and international experts on wetland science, policy and management who met for a one-day symposium in Edinburgh, UK on 24 February 2011. The symposium was organised and hosted by the Scottish Government, Scottish Environment Protection Agency, Scottish Natural Heritage and Wetlands International.

Symposium participants reviewed a range of case experiences, challenges and opportunities, including the following:

ON BENEFITS…

- **When wetlands are functioning well, they provide a range of benefits to people**, including food security, cultural services, and the production, protection and purification of water. Wetlands also support the functioning of other ecosystems.

The UK National Ecosystem Assessment has classified wetland benefits and quantified their significance; and has modelled the spatial relationships between ecosystem services at a water catchment level.

- **Well-managed, maintained and restored wetlands act as "green infrastructure"** for water and biodiversity. In addition to the other "ecosystem services" mentioned above, they play a **crucial role in mitigating climate change and increasing resilience to its effects**, locally as well as globally. Peatlands, for example, store a larger total amount of carbon than any other living ecosystem.

- Holistic spatial planning, adaptive management of catchments and floodplains, balancing water use for agriculture, space for living and flood storage in wetlands all help (often across one region of the world to another) in responding to the increased risk of high rainfall events causing significant flooding, and with situations where drought and water scarcity are becoming more severe.

The "Room for the River" programme in the Netherlands is implementing "de-poldering" and other innovative floodplain solutions to flood risk management, as an alternative to ever-higher dykes. In Scotland too, natural wetland systems are increasingly being used in similar schemes.

ON THREATS…

- **Wetlands, their biodiversity and the services they deliver are vulnerable to changes in climate**, including changes in rainfall, temperature and sea levels, indirect impacts (for example from displaced human populations) and the exacerbation of other causes of change. This is compounded in situations of degradation or poor management, including wastage and leakage of water. Oxidation or burning of the organic carbon in peat soils, associated with destruction or mis-management of these habitats, is contributing over 6% of global greenhouse gas emissions.

The Inner Niger Delta (Mali) is a vast interconnected socio-ecological system, dependent on seasonal flooding. Its crucial productivity for fish, rice and migratory birds is being seriously affected by dams and water diversions upstream, putting the livelihoods and food security of more than a million people at increasing risk.

- The causes of wetland loss and its effects can be very distant from each other in space and time, for example through the "water footprint" of traded commodities. The impacts are felt much more severely by those living in poverty.

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ON RESPONSES…

- There is a need to improve our technical knowledge of these ecosystems and future scenarios of change, along with a **full appreciation of the values of wetlands and the costs of their loss and degradation**. Experience, evidence and methods are, however, developing and becoming more available all the time.

Bio-rights, payments for ecosystem services, mitigation banking, agri-environment measures, carbon credits and related approaches are beginning to integrate more of the true economic values of wetlands into market systems.

- Wetland-related options for climate change mitigation and adaptation, and disaster risk reduction, need to be fully factored in to relevant decision-making processes. **Restoration of wetlands is a proven strategy** which can help to meet these needs; although precautionary planning and **avoidance of loss** and degradation in the first place **is always preferable** (and less expensive).

Channel-blocking has restored water to 5000 ha of the Ruoergai peatlands (China), reducing CO_2 emissions, flood risk and drying-up of pasturelands. Hydrological management to restore Chilika lagoon (India) has safeguarded both its biodiversity and ecological functions that are worth millions of rupees every year to local inhabitants.

- **Good decision making depends on effective governance** mechanisms to guide public and private sector policies and practices, and in turn to guide the actions of all users of wetland resources. Experience shows that the most effective systems ensure active, equitable stakeholder participation and are informed by sound knowledge of ecosystem values and services, (including traditional and indigenous knowledge), transparently accounting for trade-offs between different objectives and communicating effectively with relevant audiences.

Recent legislation in Scotland integrates climate change, flood management and biodiversity objectives in an "ecosystem-based approach" to wetland knowledge, policy and management.

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** A CALL TO (SMARTER) ACTION **

The meeting called upon governments, wetland specialists and relevant organisations (including IPBES, the Intergovernmental Platform on Biodiversity and Ecosystem Services, in setting its initial priorities), to take action to address the following issues:

- Identify ways to include wetland conservation, management and restoration in national and international governance mechanisms, policies, plans, development assistance programmes and investment strategies that address climate change.

  [Who? Governments, intergovernmental bodies, development agencies, private sector]

- Forge new partnerships as a means to engage key sectors in putting greater weight on wetland values in their own work, and to learn shared lessons from experience that will enable better anticipation of future events and options for responding.

  [Who? NGOs, Conventions, IPBES, academics, private sector]

- Develop global, national and corporate policies and activities to protect and restore carbon-rich wetlands.

  [Who? Governments, private sector]

- "Scale-up" the application of innovative financial mechanisms (such as bio-rights, payment for ecosystem services and carbon markets) to support wetland conservation practices that also benefit local people.

  [Who? Governments, development agencies]

- Improve understanding of the many socio-economic and cultural values of wetlands, through research linked to practical action and case examples.

  [Who? Research institutions, advisory bodies, IPBES, knowledge-exchange networks]

- Encourage research and long-term monitoring to improve technical knowledge of the ways in which different wetland ecosystems may mitigate climate change or contribute to resilience against its effects.

  [Who? Governments, research funders, IPBES, other monitoring and assessment initiatives, academics]

- Use research, case examples and reviews of evidence to demonstrate successful and cost-effective methods, tools and approaches for promoting the management and restoration of wetlands as "green infrastructure".

  [Who? IPBES, environmental management agencies, NGOs]

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