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ISSUES BRIEF
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NOVEMBER 2015

WATER AND CLIMATE CHANGE

Building climate change resilience through water management and ecosystems

- Climate change manifests itself primarily through **changes in the water cycle**. As climate changes, droughts, floods, melting glaciers, sea-level rise and storms intensify or alter, often with severe consequences.
- Climate change impacts have direct consequences for **water security and conflict.**
- In order to achieve the Sustainable Development Goals, **climate change adaptation** will have to build **climate resilience**.
- **Climate resilience** is strengthened through **healthy ecosystem services** that rely on **well-functioning river basins**.
- Effective **country-driven climate change adaptation** should reflect the importance of water management in reducing vulnerability and building climate resilience.

What is the issue?

Water and weather, the delicate balance between evaporation and precipitation, is the primary cycle through which climate change is felt. As our climate changes, droughts, floods, melting glaciers, sea-level rise and storms intensify or alter, often with severe consequences.

Only 3% of the planet's water is freshwater, and of this, two-thirds is captured in glaciers and polar ice. In the current climate predictions, safeguarding the water we have in the supplies we need for a global population set to reach 10 billion by 2050 will be a challenging task.

Why is this important?

There is much at stake. The World Economic Forum ranked water crises as number one in its 2015 assessment of global risks, with potential to cause damaging economic and social impacts across entire countries and sectors. Living with climate change will mean coping with the impacts on water, whether too much or too little, and taking the necessary steps to reduce the vulnerabilities of communities and economies.

Water security

Climate change impacts will have direct consequences for water security. The Intergovernmental Panel on Climate Change (IPCC) alerted the global community to the great vulnerability of freshwater resources as a result of climate change. A recent study by the International Food Policy Research Institute found that 4.8 billion people – more than half the world's population – and approximately half of global grain production will be at risk due to water stress by 2050 if business-as-usual persists.

Water cooperation

Water management helps to drive transboundary cooperation, including on climate resilience. Water cooperation helps to reduce the risk of conflict within communities and among countries.

https://www.youtube.com/watch?v=GdO1XehxL_U

What can be done?

In order to achieve the Sustainable Development Goals, climate change adaptation will have to build climate resilience. Adaptation must better equip societies to withstand shocks and disasters.

Nature-based solutions such as mangroves protecting shorelines from storms, lakes storing large water supplies and floodplains absorbing excess water runoff, are a key part of this strategy. These natural services perform an infrastructure-like function. Yet they are not built infrastructure, they are shaped, grown, eroded or deposited by nature. Working with this natural infrastructure can optimise the performance and financial benefits of engineered infrastructure.

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Climate resilience can be strengthened through healthy ecosystem services that rely on well-functioning river basins. The experience of the IUCN Global Water Programme in integrating environment and development has shown that four components combine to build climate resilience in practice:

Diversity – more diverse economies, livelihoods and landscapes withstand shocks better and allow for a faster adaptation to uncertain futures

Capital and innovation – combining built with natural infrastructure optimises performance and financial benefits (see infographic)

Self-organisation – through participatory governance and empowerment in adaptive institutions

Knowledge and learning – from improved climate information and capacity building, enabling people and institutions to recognise and adapt quickly to shocks and change

Transitioning dialogue into implementation

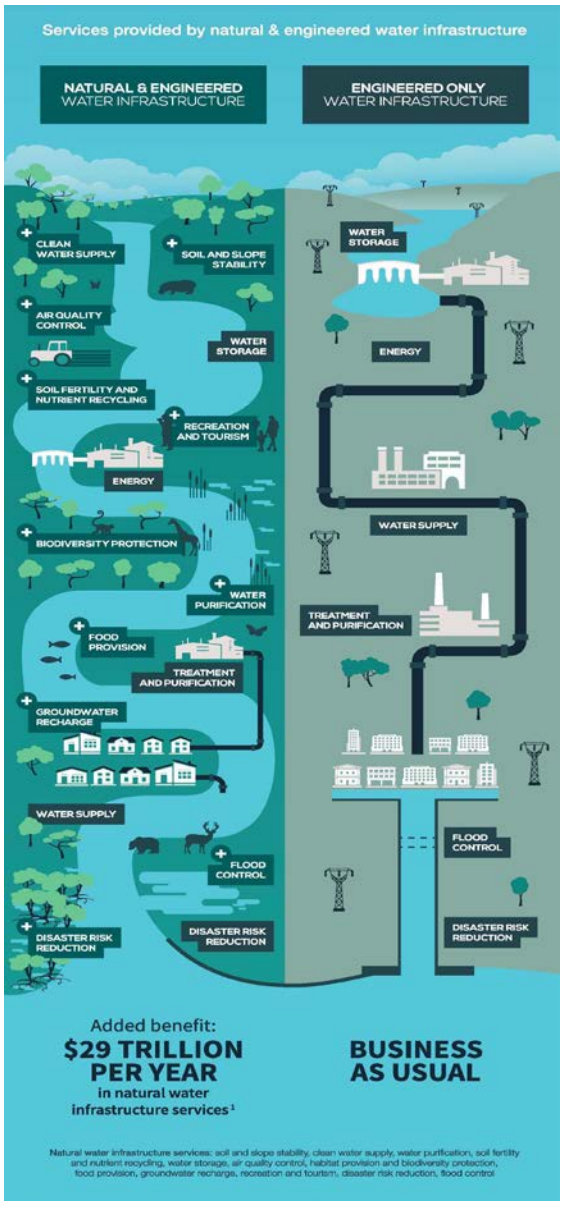
Adaptation actions such as developing or adapting drainage or water storage, whether with built or natural infrastructure, should be implemented within this strategy. The strategy should guide policies, planning and investment across sectors, including economic planning, poverty reduction strategies, agriculture, energy and water resources development. The resilience framework is a practical means of mainstreaming climate change in development and implementing the Sustainable Development Goals.

Global dialogue on climate change adaptation must transition into implementation and country-driven action. Support for country-driven implementation can be provided through the IUCN Global Water Programme for action on water and climate change that builds on three pillars.

To guide effective country-driven climate change adaptation, activities should reflect the importance of water management for reducing vulnerability and building climate resilience, by:

1. **Putting adaptive Integrated Water Resources Management (IWRM) at the centre of planning and investment for climate change adaptation.** Efforts to reduce greenhouse gas emissions also depend on access to reliable water resources, as all mitigation actions need water to succeed.

2. **Promoting investment and implementation that incorporates management, restoration and sustainability of 'natural infrastructure'** – the ecosystem services provided by healthy watersheds and coasts – and their benefits for climate resilient development of the food and energy sectors.



3. **Supporting actions at scale to build climate resilience by combining watershed management, sustainable infrastructure, empowerment and learning through adaptive institutions.**

Climate-driven water hazards risk setting development off track. If we are to achieve climate and development goals, water must be at the core of adaptation strategies. Water is also important to achieve mitigation targets. IUCN supports and assists climate change adaptation through its global network of members and partners, covering Latin America, Africa, the Middle East, Asia and Oceania.

Where can I get more information?

iucn.org/water

More on IUCN at COP21:

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