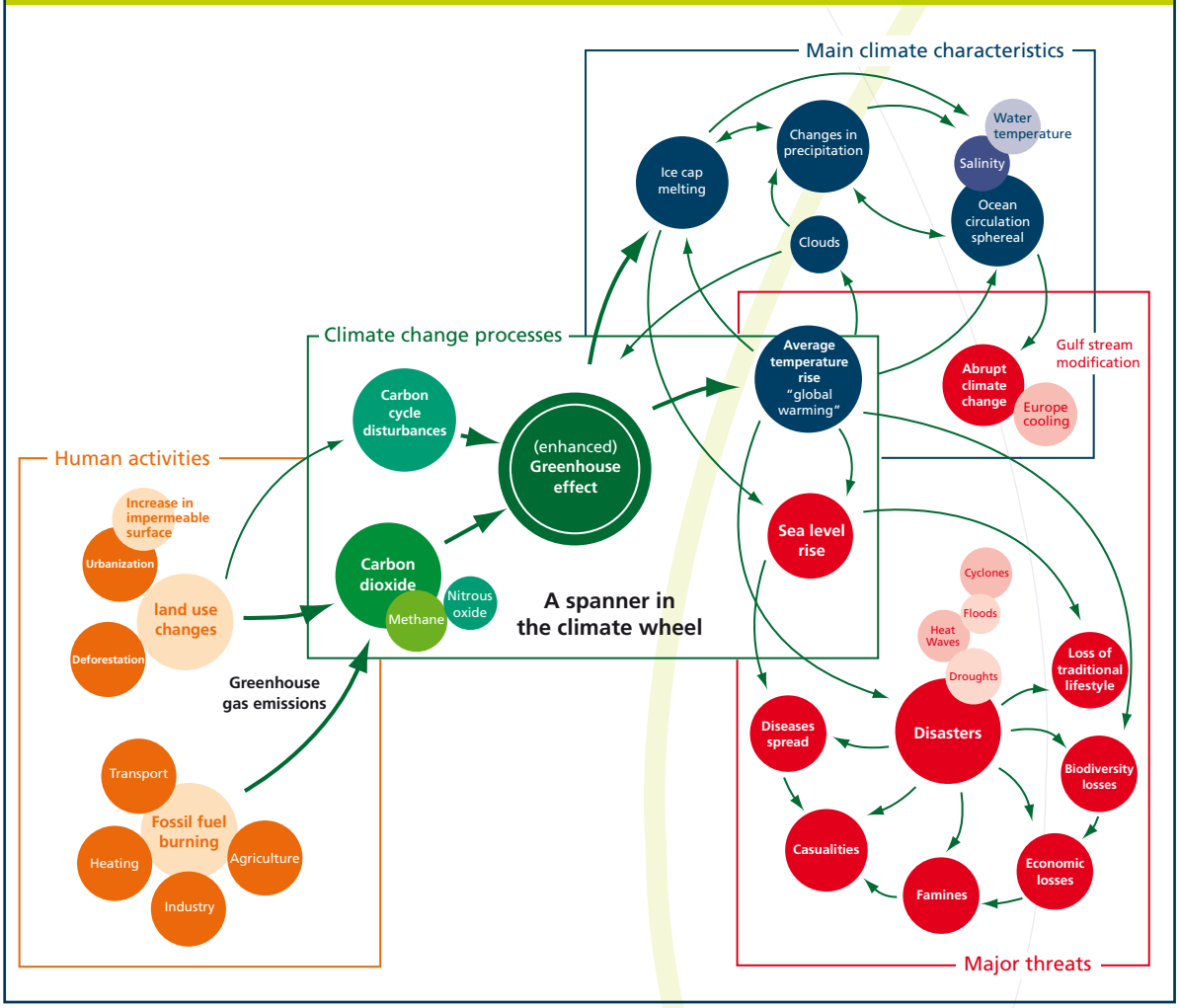
Climate Change and Water-related Risks

The Future We Want, adopted at Rio+20, reaffirmed that climate change is one of the greatest challenges of our times and expressed profound alarm that emissions of greenhouse gases continue to rise globally[1].

Water is the fundamental link between the climate system, human society and the environment, and is the primary medium through which climate change influences Earth's ecosystem and thus the livelihood and well being of societies.

Climate change is likely to intensify and accelerate the hydrological cycle and consequently affect the distribution and availability of water resources in space and time, which will affect every aspect of development and environmental health that depend on the management of water resources. This, in turn, will have significant repercussions on human development and security.

Climate change: processes, characteristics and threats



[1] "The Future We Want," paragraphs 190-192, outcome document to the Rio+20 United Nations Conference on Sustainable Development. Available online at: http://www.uncsd2012.org/thefuturewewant.html

Developing countries are the most vulnerable to the adverse impacts of climate change and are already experiencing increased impacts, including persistent drought and extreme weather events, sea-level rise, coastal erosion and ocean acidification, further threatening food security and efforts to eradicate poverty and achieve sustainable development.

Adaptation to climate change is hence an urgent matter. Water plays a pivotal role in it, but the political world has yet to recognize this notion. As a consequence, adaptation measures in water management are often underrepresented in national plans or in international investments portfolios. Therefore, significant investments and policy shifts are needed. These should be guided by the following principles:

- Mainstream adaptations within the broader development context;
- Strengthen governance and improve water management;
- Improve and share knowledge and information on climate and adaptation measures, and invest in data collection;
- Build long-term resilience through stronger institutions, and invest in infrastructure and in well functioning ecosystems;
- Invest in cost-effective and adaptive water management as well as technology transfer;
- Leverage additional funds through both increased national budgetary allocations and innovative funding mechanisms for adaptation in water management[2].

Application of these principles would require joint efforts and local-to-global collaboration among co-riparian countries and among sectoral, multisectoral as well as multidisciplinary institutions. Responding to the challenges of climate change impacts on water resources requires adaptation strategies, adaptive institutions and solid legal frameworks at the local, regional, national and global levels, including across political borders in the case of shared rivers basins, lake basins and transboundary aquifers. Countries are being urged to improve and consolidate their water resources management systems and to identify and implement "no regrets" strategies, which have positive development outcomes that are resilient to climate change. In particular, countries are being urged to pay greater attention to the role of healthy ecosystems for effective climate change adaptation. Ecosystems are adapted to specific water conditions and yet can adjust to changes. However, significantly altered water flows may hamper the ability of ecosystems to deliver services and sustain biodiversity. The litmus test of well-managed, climate-resilient freshwater ecosystems is the continued flow of clean and sufficient water, as the basis for environmentally sustainable, socially equitable and economically efficient outcomes. Accordingly, around the world, governments are increasingly adopting water management and allocation frameworks that prioritise securing sustainable flow regimes towards ensuring the long-term availability of water for all.

Finally, water provides a clear-cut example of the linkages between mitigation and adaptation, and the necessity to mitigate and adapt in a coherent way. Biofuels, forest carbon, hydropower, ecosystem services and agriculture are all heavily dependent on sustainable, resilient water resources management. However, mitigation and adaptation run the risk of becoming competing, even antagonistic approaches. It is thus of

[2] "UN-Water Policy Brief - Climate Change Adaptation: The Pivotal Role of Water." Available online at: http://www.unwater.org/downloads/unw_ccpol_web.pdf

utmost importance that policies and institutions on all level facilitate and promote coherence and cooperation. Uninformed compartmentalized decision making risk paving the way for incoherent or insufficient national, regional, and global measures.

Key Questions:

Application of these principles would require joint efforts and local-to-global collaboration among sectoral, multisectoral as well as multidisciplinary institutions. Responding to the challenges of climate change impacts on

- How does climate change directly and indirectly affect you?
- What key actions should be taken in your country to tackle the impacts of climate change on water resources?
- What can you (and/or your organization do) to adapt to climate change?
- Should water-related adaptation to climate change be any different from adaptation to climate variability?
- How do we mainstream climate change resilience in the green economy through improved cooperation between water, agriculture and energy management?