

Second Mekong River Commission Summit

International Conference

Cooperation for Water, Energy and Food Security in Transboundary Basins under Changing Climate

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Keynote 2: Water, Energy and Food Security Nexus in Transboundary Basins

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The date of the Conference is timely, because of the presentation of the New IPCC

Report of Working Group II on impacts, adaptation and vulnerability where water plays a more prominent role than in the reports before, acknowledging water as a connector linking the key sectors such as energy, food and industry. And in addition, the importance of a transboundary approach to managing shared waters is mentioned including the role of transboundary institutions in ensuring national security and territorial integrity, and advancing cooperation across nations in sharing a river basin.

The Mekong River Basin is one the best places in the World for illustrating whats outlined in the IPCC Report in underlining the interdependencies and interlinkages between water, food, energy and ecosystems neglecting the transboundary dimension with all the major impacts resulting from a sectoral and “silo-driven” approach and neglecting the transboundary dimension.

There is no new evidence, in 2012 the well respected Transatlantic Academy in its report “The Global Resource Nexus” addressed the challenge very clearly:

„Access to water, food, land and energy are central challenges in people´s every day lives in the resource nexus on the ground. Resource depletion and environmental degradation can lead to local competition for resources, migration, violence, terrorism, and the emergence of ungovernmental spaces, with the potential for international repercussions”.

Similarly, already 2011 the World Economic Forum highlighted in its Global Risk Report that the substantial risks for economic and social development which may result from scarcities in energy, food and water can only be overcome if we consistently incorporate the interaction and interdependencies among these areas in developing of policies and strategies.

No doubt, climate change impacts tend to increase the pressure. And climate change is directly linked to energy production as major source of CO² emissions. Other global trends like demographic growth, urbanization and changing consumption patterns also increase pressure on the resources water, land and energy.

Therefore, today, many have recognized a clear need for new approaches to address the interconnections between the resources water, energy and land as well as the transboundary cooperation in shared river basins. Assuring water, energy and food security cannot be reached in a business-as-usual-scenario, because resources are too limited..

But a new approach means more than asking for new technologies. It also means a **new way of thinking**. Energy is one of the keys to tackling the challenges of the future. But focusing on energy will not be enough. Water and food security are

equally important for sustainable development. Above all, we have to understand **how these three issues are related.**

- Water is needed for irrigation: up to 90% of water use for irrigation in arid countries. Water is also needed for energy generation (via hydropower and for cooling power plants). And, most importantly, water is needed as drinking water.
 - Energy is needed for the provision of drinking water: approx. 30% of water supply costs are energy costs. And for food supply 30% of the world's available energy is being used.
 - Land is essential for the water cycle, for agricultural production and for the production of biofuels.
- That means: A secure energy supply is not possible without water.
 - Conversely: modern water management is not conceivable without energy. Irrigation, water processing and distribution, collection and treatment of wastewater - all these processes require energy.

But these different needs often lead to overuse of water resources, pollution of surface water and groundwater, shortage of water resources for other uses, damage to important eco-systems and impairment of other water uses, e.g. agricultural irrigation. On top of that, a lag of transboundary cooperation is focussing on national boundaries with the consequence to handle water unilaterally in ignoring up-stream and downstream needs and interlinkages.

We have to think of energy, water and food systems as a nexus and plan them in an integrated and transboundary way: legal arrangements and frameworks, support instruments and subsidies need to be closely scrutinised on a riverbasin level and worldwide.

This is the only way to reverse the trend of water-intensive energy solutions and energy-intensive water solutions that the OECD has identified in many countries.

Restructuring our energy systems to achieve greater energy efficiency and a large share of renewables offers one excellent opportunity to reduce the energy sector's water footprint - both the amount of water it uses and the level of water pollution it causes.

Disputes about the expansion of hydropower or energy crop cultivation show that here, too, there are conflicts and cases where careful consideration is required. In such areas there needs to be a political will to shape developments and willingness to make corrections in the face of unexpected negative developments or unintended consequences.

The same applies for the lack of transboundary cooperation amongst countries in transboundary river basins to avoid negative impacts on other riparian states.

There are lots more examples, the Mekong is very prominent one in this regard.. They all show that **water security, energy security and food security are very closely linked**. In most cases, activities in one area have an impact on the others and on downstream countries.

We have made some good progress. It applies also for transboundary cooperation, as we can see from the Second Assessment of the UNECE on "Transboundary Rivers, Lakes and Groundwaters".

But still there is a lot to do, many people do **not** have **enough to eat**. And they have **no access to water and sanitation** or modern forms of **energy**.

Three factors **are making the situation even more difficult**. **Firstly**: the **world population** will soon reach 8 billion. **Secondly**: many parts of the world are **becoming richer**. As a result, the demand for resources is increasing. **Thirdly**: **climate change** has a negative impact on water management and farming.

The people who are hungry are often those people who have no access to energy – energy they could use to increase their harvests, to pump water from the ground or to preserve their produce.

Access to both water and energy is the key to enabling people to enjoy a dignified standard of living and to play an active role in social and economic processes. Water and energy are prerequisites for securing food supply, economic development, economic growth and political stability.

In this region we have to recognize, that the overexploitation and overuse of fresh water has been an essential component of Asia's rapid growth. We can clearly see, if nothing changes, that "water scarcity is set to become Asia's defining crisis by mid-century, creating obstacles in its path of continued rapid economic growth and stoking new interstate tensions over shared basin resources".(B.Chellany,Water:Asia's new battleground,2011) Furthermore, we have to realize, in this context water quantity and water quality (often overlooked in the debate) are two sides of the same coin, because enough but heavily polluted quantity makes water also scarce.

This connection between water, energy and food security is a key challenge for the future of our planet and the people living on it. This was clearly underlined by the outcome of the **Bonn 2011 conference on "The Water, Energy and Food Security Nexus – Solutions for the Green Economy"** , and recently by the University of North Carolina at Chapel Hill Water Institute "**Nexus 2014: Water, Food, Climate and Energy Conference**".

Both conferences came to the clear conclusion that "business as usual" is not an option. We do not have two or three planets to meet all the needs of the world population. If we keep going along the same path, in 20 years we will have only two thirds of the water we require for food, energy and other human needs.

So we have to find **smarter solutions**. We need a real transformation.

It is essential to **avoid negative impacts** on other areas. For example, it makes no sense to subsidise flower-growing – which requires a lot of water – if it means that people do not have enough drinking water.

The best thing is to find **combined solutions**. For example, wastewater does not have to be wasted. It can be used to produce biogas-energy or fertiliser, or for irrigation.

That is the "**nexus perspective**". It helps us to understand how water, energy, food and climate impact on each other. It helps us to develop solutions that will achieve **three aims**:

- To ensure that people, especially the "bottom billion", have quick **access to these vital resources**.
- **To produce more with less.**
- To **invest** in preserving **ecosystems**, which are needed to produce water, energy and food for all.

These changes require the right political understanding and incentives. They also need the right institutions, leadership and empowerment, research and education.

To underline it very clearly, the NEXUS approach is not a "perfect" blueprint for a new governance architecture and immediate implementation, nor is it a concept to creating unclear new responsibilities. The call for action stays with the relevant sectors but following common principles to avoid unintended consequences and to ensure a coherent policy. A iterative and pragmatic process is needed. Perfection is no option, a second or third best option is better than doing nothing, when waiting for a perfect "solution". Furthermore a balanced approach amongst the sectors is vital.

Water, energy and food all have a prominent place in the Rio + 20 **outcome document**. However, the connections between the three issues and the transboundary dimension are not yet really addressed.

The ongoing debates on the post 2015 agenda and Sustainable Development Goals provide ample opportunities for taking account of these connections and inter-linkages in a more comprehensive way. But we have to make clear, even if water is “everywhere”, we need a single water SDG to avoid a situation that water is finally nowhere.

The interlinkages between water, energy and food security and its transboundary relevance should be given adequate attention in this context.. That is the only way to bring together the three dimensions of sustainability: access, efficiency and environmental sustainability.