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## Water-energy-food – do we need a nexus perspective? The Bonn Nexus Conference

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# The Current Column

*of 14 November 2011*

## Water-energy-food – do we need a nexus perspective?

Bonn, 14 November 2011. Under the patronage of the Federal Chancellor, the German Federal Government is organising an international conference known as *“Bonn2011: The Water, Energy and Food Security Nexus – Solutions for the Green Economy”*, to be held from 16 to 18 November 2011. The aim is to develop new solutions to providing global water, energy and food security. This conference, to which 500 decision-makers and shapers from politics, science, international organisations, civil society and the private sector have been invited, is a contribution from the German Government to the United Nations Conference on Sustainable Development *“Rio2012”*.

### **Why a nexus perspective?**

Global population, economic growth and climate change will lead to a rising demand for energy, food and water. This brings with it the danger of natural resources being further overused, entailing possible tipping points for the Earth’s climate, and of conflicts over their distribution being exacerbated. At the same time, almost a billion people are currently undernourished, nearly a billion have no access to safe drinking water, and a billion and a half have no electricity supply.

Against this background, the nexus approach takes account of all three sectors, water, energy and agriculture simultaneously, because approaches adopted in just one sector often have negative effects on other sectors, and their objectives may be conflictive.

A prime example of a technology which should be regarded critically from a nexus perspective are biofuels: while biofuels contribute to low-carbon development and in some places strengthen the agricultural sector, they may also displace food production (*“fuel not food”*) and are often accompanied by pollutant discharges into bodies of water and by high water consumption. Wind power, on the other hand, attracts little or no criticism in these respects. An approach viewed positively from a nexus perspective is the reuse of treated waste water and treatment of sewage

sludge for water supply, food production and energy generation. To give another example: in arid regions fresh water is increasingly being produced through the desalination of sea water with the aid of fossil energy sources. As, however, many dry countries are rich in solar radiation, this negative example could be converted into a positive one if solar energy was used.

### **The approach at the Bonn Conference**

The Bonn Nexus Conference will focus on three action fields: 1. Accelerating access, integrating the bottom of the pyramid (the social dimension), 2. Creating more with less (the economic dimension) and 3. Investing to sustain ecosystem services (the ecological dimension). The aim is, in particular, to gain a better understanding of interdependences between the water, energy and agricultural sectors, including the influence of trade, investment and climate policies, as a basis for fostering synergies and precluding trade-offs. In addition, the Conference will also seek to identify favourable enabling conditions and incentives for the consideration of these interdependences in decision-making and for facilitating the transition to a green economy. However, it is noticeable that the programme does not set aside a great deal of time for these latter issues.

### **Is the nexus approach new?**

From a water perspective it might be argued that integrated approaches are not new. Various actors have, for example, been advocating Integrated Water Resource Management (IWRM) for some twenty years. This calls for the *“coordinated management of water, land and related resources”*, including the coordination of different water-using sectors. One lesson learnt from the IWRM approach is that coordination and balancing the interests of the various water-using sectors continue to be a major challenge. The researcher François Molle even speaks of a nirvana concept. One reason for this is that the energy and agricultural sectors, for instance, have little incentive to concern themselves with the effects their decisions

have on water.

The nexus approach can thus be understood – at least from a water perspective– as an attempt to involve the energy and agricultural sectors in the analysis of the problems from the outset and so to raise awareness of the interdependences of energy, food and water security. But it remains to be seen whether this will succeed. It will also be apparent from the numbers attending *Bonn2011* from all three sectors.

### **Why do we need a nexus approach?**

Another lesson learnt from the IWRM concept is that integrated approaches always entail higher transaction costs than purely sectoral approaches. Hence the importance of proceeding in a pragmatic and problem-oriented way. For the nexus approach this means having a clear understanding of when that approach is necessary and when good sectoral policies suffice. Most countries lacking access to safe water supply and sanitation, for example, are not necessarily short of water. But this means that any approaches adopted in such countries to improve food security and energy supplies are unlikely to have serious adverse effects on the availability of water and that the three securities can thus be improved independ-

ently of one another (although growing biofuel crops may reduce food production). This situation is, however, fundamentally different in arid regions, where many emerging economies in particular are to be found: in such countries production decisions taken by the agricultural and energy sectors are highly relevant to water security.

### **What now?**

If we want water, energy and food security in the long term, a nexus perspective is crucial. Yet implementing the nexus approach continues to be politically challenging. If, for example, the decentralized treatment and reuse of wastewater is such a miracle weapon, why is it not a more common practice? The Bonn Nexus Conference and other nexus apologists should take very seriously not only the generation of good ideas for mobilising synergies and avoiding trade-offs but also the question of how institutional obstacles can be removed and how suitable incentives to take external effects into account can be created. For, As emphasised by the experience with IWRM, the implementation of good ideas and concepts stands or falls with the interests, acceptance and capacities of the actors involved and with the institutional framework conditions.



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