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**Research Report**

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## Sustainable water management through green economy?

### Summary

Twenty years after the international community meeting in Rio de Janeiro agreed on the triad of ecological, economic and social sustainability, the subject of the green economy is gaining ground in debates on the environment and development. Many international organisations have developed their own definitions and programmes designed to boost economic growth, create jobs and protect natural resources all at the same time. In view of the ecological, social and economic problems caused by the overuse of natural resources and the continued increase in greenhouse gas emissions, the question of a sustainable economic order is more urgent than ever. Even the United Nations Conference on Sustainable Development, or the Rio+20 Summit for short, is dominated by the green economy debate, which is almost threatening to supplant the established concept of sustainability. Although it is emphasised that sustainable development remains the contracting parties' principal objective and that the achievement of the green economy is only a means to that end, most of the proposed measures and the debates have so far focused on strengthening environmentally compatible growth, with little attention paid to possible unintended effects on society and ecosystems.

For human development and ecosystems, however, the water sector plays a key role in the implementation of many green economy projects. This paper therefore

analyses the extent to which the green economy may help the water sector to achieve sustainable development and to meet the major challenges. It reaches the conclusion that, while the attention paid to the water sector that accompanies the debate on the green economy is good, the concept has serious weaknesses:

- On the whole, the green economy debate makes little reference to existing norms and discourses on sustainable water management. One result of this is that certain aspects of social sustainability and human development are frequently overlooked. Nor are many of the proposed measures adequately embedded in the overall ecological context, the postulated positive effects for sustainable water management thus being uncertain.
- Too little attention has so far been paid to conflicts of objectives between the implementation of the green economy agenda and the classical social and ecological aspects of sustainable water management.
- It is becoming clear that too much emphasis is being placed on the role of the private sector and too little on the responsibilities of the state as organiser of the sustainable use of natural resources. There is consequently a danger of measures / sectors in which the business community shows no interest being neglected.

## Background

National and international debates have been dominated by the green economy for some time. They are likely to reach their provisional high point in June 2012, when the new "earth summit" takes place in Rio de Janeiro. While the aim during the run-up to the first Rio summit was to have greater emphasis placed on sustainability in economic concepts, the focus now is on the consistent conversion of the economy and the opening up of new areas of the economy and employment to green growth. The concept of a *Global Green New Deal* put forward by the United Nations Environment Programme (UNEP) was followed by UNEP's *Green Economy Initiative* in 2008 and numerous publications and proposals for action from national and international actors. The South Korean government in particular has committed itself to making its economy green and to disseminating the concept. In the many initiatives that have been launched the term "green economy" is, however, defined in a wide variety of ways. UNEP (2011) sees it as a form of economy that leads to improved human well-being and social justice, while reducing environmental risks and the scarcity of ecological resources.

UNEP's and the South Korean government's initiatives share the view that economic growth should be de-linked from the consumption of raw materials and energy and that economic calculations should take greater account of the utilisation of natural resources for economic purposes and of market mechanisms. Overuse and pollution should be penalised more heavily and reduced through investment in improved technology and more efficient utilisation. Greenhouse gas emissions should also be reduced. All these proposals assign a special role to the private sector: to spread appropriate technologies and branches of the economy and to invest in resource protection and efficiency and ecosystem services. Other goals shared by the green economy approaches are job creation and poverty alleviation. They differ, on the other hand, in that UNEP stresses the importance of the state for innovation and growth and for the protection of ecosystems and social justice, while the South Korean government sees the market as the main actor for green growth.

### The green economy and the water sector: socially and ecologically sustainable, too?

The role of water in the green economy is discussed explicitly by UNEP, UN-Water, the Global Water Partnership (GWP), the OECD and, above all, the South Korean government and the World Water Council. The argument is that a green economy will help to enable water to be managed sustainably and that water is of economic importance for the green economy. The OECD, among others, warns that unsustainable water management is an obstacle to growth and that, conversely, the preservation of ecosystems through sustainable water management will save "enormous costs".

#### Box 1: Green economy measures in the water sector

**Economic instruments:** taxes, fees, water markets, trade in water and pollution rights

**Financing of water infrastructure:** reforms of rates charged for water-related services, public-private partnerships, micro-credits

**Investment in environmental capital:** payment for ecosystem services, compensation for protective measures

**Dissemination of innovative technology:** efficient irrigation, improved access to technology and skills in its use

**Improved water resources planning:** balance between water use and protection, strengthening of institutional capacities

Source: UN-Water (2011)

UNEP and the South Korean government believe the measures they propose (see Box 1) will have favourable effects on the labour market and ecological sustainability, for example. In many cases, however, it is still unclear how jobs can emerge and be maintained in the long term, or how it is to be ensured that resources saved will actually benefit the ecosystem. As explained below, the social and ecological sustainability of these win-win solutions is not therefore always certain. This is partly due to the fact that the green economy is not firmly enough embedded in the overall ecological and social context or linked to existing knowledge and achievements, such as Integrated Water Resources Management (IWRM) and the human right to food and water.

**Social sustainability is at risk** where higher or newly introduced prices of water and ecosystem services obstruct access to a basic water supply – for drinking water, sanitation and food production. This may have major impacts on societies and exacerbate conflicts over distribution. UN-Water and other organisations therefore support the explicit retention of the right to a basic water supply. UN Secretary-General Ban Ki-moon similarly warns that the goal of "appropriate prices" may threaten food security and increase poverty. The need to conserve water, for example, is particularly urgent in agriculture, which consumes up to 90 percent of water resources in some developing countries. This is, then, the peg on which many green economy measures are hung – without sufficient account being taken of the socio-economic implications. Market mechanisms may obstruct access to water and therefore may create threats to the incomes of small farmers, who use 60 percent of the world's arable land, and these threats may also impact on the food security of whole economies.

Socially sustainable water management may greatly improve the opportunities for human development in many fields, such as education and health care. However, the effects can often be measured only in the long term. They are in the public interest and not necessarily in the financial

interests of the private sector, which is more likely to focus on lucrative activities. For this reason, too, the state has a duty to pursue a policy geared to the public interest and, if the need arises, to force it through against business interests.

The expected positive socio-economic effects of green economy projects are in urgent need of analysis. The OECD report on 'Agriculture and Green Growth', for example, makes no more than vague references to this aspect, stating that unspecified social contributions by the green economy appear to solve poverty and development problems. The frequently postulated poverty alleviation and the creation of jobs are welcome – but they do not follow automatically and require comprehensive concepts if they are to have a sustained impact.

**Ecological sustainability is at risk** primarily when interactions between technical innovations on the one hand and ecosystems and the social and political environment on the other are not taken into account. The following projects, declared to be contributions to the green economy, illustrate these risks. Investment in efficiency does not automatically solve problems associated with the growing scarcity of resources, let alone guarantee their protection. In some countries, for example, the spread of drip irrigation (and the consequent reduction of water consumption per unit area) has led to an expansion of irrigated areas (rebound effect) – but not to the hoped-for recovery of groundwater reserves.

Ecological sustainability in the case of the project, lauded by UNEP, for the creation of a water market in Australia's Murray-Darling Basin is similarly questionable. Here water extraction licences are sold to the highest bidder. A government agency uses tax revenue to buy shares that are meant to stay in the river as an 'environmental flow' in order to safeguard the river's ecological balance. The amount of water considered necessary for this by scientists and NGOs has, however, been reduced to the benefit of agriculture. The use of groundwater, which is not taken into account in the government eco-balance, is also threatening ecological sustainability.

The South Korean government's *Four Major Rivers Restoration Project* is also the target of fierce criticism. It has invested USD 19bn in the extensive alteration of four river courses as a climate change adaptation measure, the aim being to increase the availability of water resources and to reduce the risk of flooding. The scheme has largely replaced the natural courses of the rivers with an artificial system of canals and lakes. However, critics claim this has had major adverse effects on local ecosystems and biodiversity and increased (drinking) water pollution. Furthermore, the rivers have partly returned to their old courses, leading to the flooding of reclaimed land and the destruction of the surrounding infrastructure. This example illustrates the danger where large infrastructure measures implemented in the name of the green economy lack ecological sustainability.

## Conflicts of objectives and unintended effects

Conflicts of objectives and unintended consequences of the green economy agenda are often overlooked. It is precisely because of the need to strengthen the important societal legitimacy of any change to the green economy that conflicts of objectives should be systematically analysed and discussed. This has already been taken up by the report entitled *A Social Contract for Sustainability* (2011) published by the German Advisory Council on Global Change (WGBU), the *European Report on Development* (2011/12) and the *Bonn Nexus Conference 2011*, which provide the international debate with some interesting points of departure.

There is a particular need, for example, for the green economy debate to focus more on the interactions between measures taken to ensure supplies of water, food and energy. While, for example, the re-use of processed waste water is socially, economically and ecologically appropriate, certain approaches to low-carbon development, such as the cultivation of plants from which bio-fuels can be processed, may have serious adverse effects on the quantity and quality of water. Dams built to generate energy and store water may also be disadvantageous for people living nearby or downstream. Fees that cover costs or the charging of prices for irrigation may increase the informal use of groundwater. In developing countries such conflicts of objectives may hinder the achievement of fundamental development goals and endanger social cohesion. It is in this respect in particular that the sustainability of the green economy depends on the democratic shaping of the processes of transformation. Hitherto, however, the active state for which the WGBU, among others, has appealed has been reduced to taking responsibility for improving the involvement of the business community in the provision of water-related services.

## On the road to Rio: joint efforts to make water management sustainable

If there is to be ecologically, economically and socially sustainable development in the water sector, it needs to be asked whether the green economy concept adds greater value than sustainability. The political attention again being paid to important water issues is welcome. Many of the measures proposed are necessary – but by no means enough – to ensure the sustainable use of water resources. Although the green economy claims to ensure ecological sustainability and to contribute to poverty alleviation, the effects on the environment and society of the instruments proposed for it have yet to be singled out for discussion.

Given the water problems throughout the world and the serious governance deficiencies in the water sector, not only must technological potential be mobilised and business and financing models tested with a view to making development climate-compatible and sustainable: the links between water, food and energy supplies must also be



taken into account, conflicts of objectives must be discussed and development- and environment-oriented priorities set accordingly. Adverse ecological and social effects of low-carbon and low-energy development must be singled out for discussion and addressed politically. This calls not only for private-sector commitment but also for a state that creates suitable conditions and appropriate incentives and enables the people to participate in deciding what form the changes should take. Market solutions may promote the preservation of goods worth protecting, but the market will not do this automatically. It would be naïve to ignore the influence of powerful interest groups and veto players who make it difficult to frame sustainable policies.

In the water sector the debate on how to avoid or minimise negative consequences has been enhanced not least by the World Commission on Dams, which has proposed new decision-making procedures. A whole range of precautionary instruments (such as environmental impact assessment) capable of integrating social and environmental effects and costs into decision-making procedures are also available. At national level, for example, the IWRM concept, which seeks to strike a balance in sustainable water management between the requirements of various sectors and users,

may prompt institutional and organisational innovations. The green economy debate must not lag behind these achievements. It should, indeed, take advantage of them and develop them further with a view to enabling the various sectors to interact (nexus perspective).

The danger in the current debate is that problems which do not necessarily figure among a green economy's priorities (such as major water governance reforms and rural drinking water supply and sanitation) will be neglected, especially in developing countries, and when it comes to allocating development cooperation resources. In Rio the decision-makers should therefore seek to ensure (1) that greater emphasis is placed on aspects of social sustainability (as in access to water and sanitation, including waste water purification and recycling, and in protection against drought and flooding), (2) that more attention is paid to aspects of ecological sustainability (e.g. protection and re-naturation of bodies of water) and (3) that unavoidable conflicts of objectives are taken into account at local, national and international level. Global norms, approaches based on human rights and the established IWRM concept may help in this respect if they are adapted to local circumstances, implemented and developed further in keeping with the nexus approach.

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