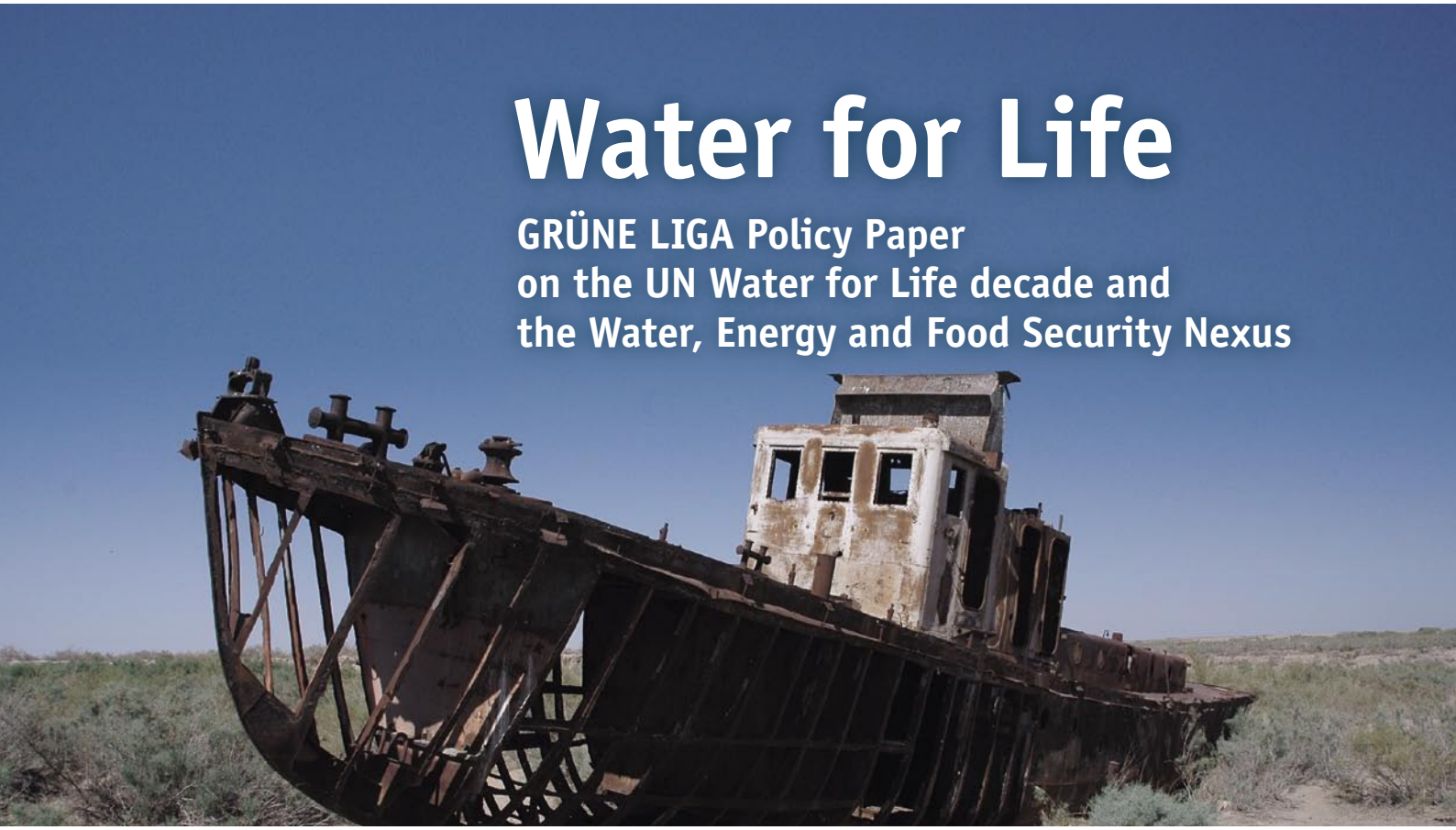
GRÜNE LIGA Netzwerk Ökologischer Bewegungen

Forum Umwelt und Entwicklung

Water for Life

GRÜNE LIGA Policy Paper on the UN Water for Life decade and the Water, Energy and Food Security Nexus



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The handling of our water resources is mainly driven by sectoral water demands. It still lacks a Water Management approach that integrates a wide array of policies and economic activities taking into account ecosystem requirements. This policy integration would much better reflect how we value water not only economically, but also socially and culturally – for people, for nature, for life.

Besides climate change, there are further aspects of a globally changing world that all influence the water cycle, such as population growth, land use and urbanisation. In many regions water scarcity and even rising temperatures are not caused by climate change or natural scarcity and droughts, but by poor water governance. Mismanagement of water services, caused by corruption, misplaced investments or lack of funding – no matter if public or private – often lead to a failure in providing safe drinking water and sanitation where they are needed most. Overuse and pollution of surface water and groundwater continue to pose a threat to human lives and to the prospects for humane living conditions and increasingly impair diversity and productivity of natural ecosystems.

Ever since the pronouncement of the first Water Decade in Mar del Plata in 1980, water has been high on the international agenda. If they are to be successful in the long run, national and global development policies cannot ignore to sustain the availability of natural resources. As Agenda 21 stresses, water is a key factor across many sectors. German non-governmental organisations (NGOs) under the umbrella of the German NGO Forum on Environment and Development advocate sustainable water policy in the context of development co-operation from a German and European point of view – in their own country and in their international activities.

Introduction

Brown trout. photo: Ludwig Tent

Water for Nature

Water is, along with sunlight, the basis for all life and biodiversity on the planet. It is essential for securing biodiversity and providing the conditions for further evolution.

Rivers and lakes, wetlands and floodplains, lagoons and coastal waters – those ecosystems that are particularly water dependent respond most visibly to changes of our water resources. Among the basic components that characterize and shape aquatic and water dependent ecosystems are 1) water quantity and distribution over time, 2) water quality and temperature and 3) aquatic and riparian habitat structure. These ecosystems are shaped by the dynamics of the water cycle and the energy of the water flow: A river forms a continuum of permanent interaction between water and land from source to mouth. Living rivers transport sediment from headwaters to deltas. Inundations of floodplains are the pulse of entire landscapes on which an outstanding diversity of plant and animal communities depend. Migratory fish like salmon and eel depend on linear continuity in river systems to reach their spawning grounds, most species need lateral connectivity of river and floodplain habitats in order to survive.

We are on the verge of a major freshwater biodiversity crisis: Freshwater fish are considered the most endangered group of animals on the planet, with more than a third threatened with extinction. In general terms, freshwater ecosystems are among the most threatened in the world.

Water and the habitats it shapes and maintains ought to be protected for their own sake, as demanded by the Biodiversity Convention. Within the water cycle, different ecosystems perform irreplaceable functions, secure a stable water balance in terrestrial areas and thus enable the use of water by humans. It is only within the confines of this natural cycle that water can be regarded as a renewable resource. Only a sustainable use adjusted to this can maintain the productive interplay between water and nature on a lasting basis.

Water retention in forests, natural floodplains and soil layers as well as the renewal and self purification of rivers, lakes and groundwater are among the most important natural functions of the water cycle. These and other ecosystem service are of high economic value.

For any water policies to be sustainable, this key message of the Millennium Ecosystem Assessment must be the starting point: "In order to balance competing needs, it is critical that society explicitly agrees on ecosystem water requirements (environmental flows)."

Water for People

Water is both, a means of survival and a crucial factor in economic development. Organised and secured availability of water is essential for maintaining human settlements in the long run. This is why water management has required intelligent organising by society ever since the early high cultures.

Water management ought to be understood as an integrative task for society as a whole. The basis for this to succeed is open information and the participation of citizens in decision-making processes. This is why good water governance is far more than a mere issue of economic policy concepts. Water management must be transparent and publicly owned, while privatisation efforts must be treated with caution.

Almost everywhere in the world, historical experience and the stability, health and development requirements of larger communities have resulted in the organisation of water supply and wastewater management as a responsibility of municipalities and communities. Thus, water is a common good and heritage providing a basis for human life as such.

Moreover, water is, beyond its immediate use, seen by humans as a symbol of life. This is reflected in the arts and cultures of civilisations around the globe. The livelier these traditions are, the more the values of water are stressed. It is essential to reclaim the social and cultural value of water and defend it against a purely technocratic and means-to-an-end oriented view.

1. The Human Right to Water and Sanitation

With the overwhelming support of countries from the global South, the United Nations General Assembly passed a historic resolution in July 2010 recognizing water and sanitation as a human right. This was a great success for human rights and environmental NGOs, who had demanded this step for many years. In the Rio+20 preparatory process NGOs urge the G77 group of states to take leadership on this vital issue and support the human right to water and sanitation in the Rio+20 text:

"The global water crisis has become a powerful symbol of inequality in our world. Still today, more children are killed by drinking dirty water than by war, malaria, HIV/AIDS and traffic accidents combined. Among the 1.4 billion without access to safe drinking and the more than 2 billion without access to sanitation, a vast majority are from the developing world. A newborn baby in the global North consumes between 40 and 70 times more water than a baby in the global South.

"On October 31, the world's population [reached] 7 billion. Unless there is a firm commitment to human rights and environmental justice, these inequalities will only deepen. By 2030, if things continue, demand will exceed supply by 40 %.

"As economic and environmental crises collide, the Rio+20 Earth Summit provides an opportunity for countries to recalibrate, change the disastrous course that has led us thus far and set priorities that will benefit people and nature. Market fundamentalism has demonstrated its inherent weaknesses across a number of sectors, and we must not let it encroach any further, especially not in water. It is therefore crucial that Rio+20 not serve as a platform to pave the way for greater corporate control of scarce water resources. Rio+20 must enable the international community, led by the United Nations Members States, to commit to clear mechanisms to implement the human right to water and sanitation.

"The human right to water and sanitation must be at the forefront in Rio to ensure policies of equitable access to limited supplies and responsible use to safeguard water for future generations."

2. Sustainable and Productive Sanitation – a Perfect Example of the Water, Energy and Food Security Nexus

Sanitation and Water

Adequate sanitation without water is not imaginable. The toilet might need little or no water for flushing but sanitation includes hygiene practice of hand washing with safe drinking water. Insufficient sanitation options – lack of containment of faecal matter and treatment of wastewater – pose risks to drinking water sources and to public health.

Treated domestic wastewater is an excellent source for irrigation because of its constant flow all year round and its contents of various plant nutrients. Examples for this re-use of wastewater can be found worldwide. Unfortunately, re-use is often practiced as act of necessity, without safe regulations, due to the lack of other water sources. That is why legislators need to recognise the need for the use of treated wastewater and assure its safety through better regulations and incentives for an adequate treatment and re-use according to the WHO guidelines (2006).

Sanitation and Food Security

The use of treated sanitation products – urine and faeces – as fertilisers can help mitigate poverty and malnutrition, and improve the trade balance of countries importing chemical fertilisers, especially regarding phosphate fertilisers, a non-renewable resource. Food security can be increased with a fertiliser that is available free for all, regardless of infrastructure and economical resources (Richert et al 2010 on http://www.ruaf.org).

Source separation and safe handling of nutrients from the toilet systems is one way to facilitate the recirculation and use of excreta in crop production. Urine contains most of the macronutrients as well as smaller fractions of the micronutrients excreted by human beings: Nitrogen, phosphorus, potassium and sulphur as well as micronutrients are found in plant available forms. Urine is a well balanced nitrogen-rich fertiliser that can replace and give the same yields as chemical fertiliser in crop production (Richert et al 2010 on http://www.ruaf.org). Additionally, treated and sanitised faecal matter contains a number of nutrients and organic matter that improve soil fertility and combat desertification. Safe handling of urine and faeces including treatment and sanitisation before use according to the WHO guidelines (2006) is paramount.

Sanitation and Energy

Conventional sanitation systems require high energy inputs, especially for the aerobic wastewater treatment targeting nitrogen removal. Technical nitrogen fixation for chemical fertilisers is very energy intensive.

Sanitation products – wastewater, urine and faecal matter – contain a lot of energy. Firstly, heat can be recovered from wastewater. Secondly, biogas can be generated by anaerobic digestion which is already applied in large scale plants in industrialized countries, using the sewage sludge at the 'end of the pipe'. The energy yields would be even much higher if anaerobic systems were applied at source (e.g. pour-flush biogas toilets, upflow anaerobic sludge blanket – UASB – treatment of wastewater).

» Political will and adequate incentives towards sustainable and productive sanitation are needed for poverty reduction as well as job creation along the whole sanitation, wastewater treatment and re-use chain in the green economy.

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WECF is member of the German WASH Network (see also http://www.susana.org).

3. Integrated River Basin Management

The Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) has been ratified by 36 UNECE-states and is intended to strengthen national measures for the protection and ecologically sound management of transboundary surface waters and groundwaters. Such a legal framework is still missing outside Europe as the corresponding UN International Convention on Non-Navigational Uses of International Watercourses (The UN Watercourses Convention) has not been ratified by a sufficient number of UN member states. The European Union established the most advanced legal basis for water management including transboundary waters: The Water Framework directive.

European experiences after 10 years of implementing the Water Framework Directive

The European Union's Water Framework Directive (WFD) marked the beginning of a new era of European Water Policy when it came into force on 22nd December, 2000. For the first time ever, objectives for the ecological status of surface waters were defined along with a binding timeframe for their achievement and respective monitoring requirements. A non-deterioration clause for the status of water bodies was introduced.

River basin wide management plans were launched, requiring a high degree of transparency and public participation. Water management under the WFD is based on a combination of legal provisions including command-and-control mechanisms, planning instruments and a set of economic instruments. In doing so, the WFD continues to be the role model for progressive environmental policy in Europe.

Emissions, discharges and losses into the environment have to be reduced for substances that are toxic, persistent and bio-accumulative (hazardous substances) and stopped for priority hazardous substances. Groundwater must be protected not only from chemical pollution but also from overuse.

The River Basin Managements Plans completed in 2009 mark a milestone in the EUs new water policy. These plans do, however, also present substantial shortcomings and considerable differences between EU member states. Environmental NGOs in Europe therefore continue to call for better implementation in order to meet the ambitious environmental objectives of the Water Framework Directive and – most importantly – for better integration of its water resources protection aims into other policies.

The successes of the last decade regarding the improvement of water quality in small European lakes and ponds is threatened because of increasing input of fertilizers and agro chemicals from corn cultivation for biomass production. Also the increasing discharge of fermentation residuals of biogas plants contributes to the contamination of small lakes and ponds.

So far, negative effects of biomass production on water quality are not detected in deep lakes and drinking water reservoirs such as Lake Constance. But European Union member states and regional governments should not wait until negative impacts become detectable, but implement prevention measures such as the creation of bigger buffer zones between all kind of lakes and corn cultivations or the cultivation of wild herbs for biomass in the surroundings of lakes. Due to the high economical profits of corn production for biomass, those measures can be only be successful by implementing corresponding legislation and/or compensation for farmers (e.g. agro-environmental programmes).

European policies: Failure to achieve the water, energy and agriculture nexus

Whereas the achievement of good ecological status in European rivers, lakes and costal waters is required by the WFD, the lack of policy integration in the field of renewable energy and agriculture leads to major counter effects.
Newly set incentives for enhanced biomass production on both national and European level have considerably increased the pressure on land use. Arable land that was either used as grassland or had been set aside allowing for biodiversity recovery has now been cultivated for biomass production on such a scale and with such intensity that all other measures for reducing nutrient emissions from agriculture are overcompensated in quite a number of regions. The conditions on which the substantial biomass subsidies are granted are so loose that it is highly questionable whether ongoing biomass production can actually contribute to climate change mitigation. Additionally, biomass competes with food production.

With regard to hydromorphological conditions and biological continuity of rivers, the promotion of a large number of hydropower projects is posing considerable pressure on European rivers especially in mountain regions. Were it not for these additional subsidies, quite a number of these projects would not be considered economically reasonable. So instead of generally improving river basin management, the European Union might lose some of its last wild rivers without respecting their protection status under the NATURA 2000 directive or the RAMSAR convention.

Missing integration into agricultural policies is among the biggest shortcomings of implementing the WFD on the political level. Agriculture is responsible for most of the inputs of nutrients and pesticides, the impairment of riparian zones and floodplains, continued drainage of wetlands as well as overabstraction for irrigation. The intended reform of the Common Agricultural Policy (CAP) has so far failed to deliver a substantial contribution to reducing subsidies that are harmful for the health of European waters including its seas. So, virtually no progress was made in the policy field where by far the largest amount of European funds is spent. More stringent and applicable cross compliance regulations are urgently needed.

Key shortcomings of the Common Agricultural Policy (CAP) of the EU with regard to water resources protection:

► CAP payments (EUR 6 billion to Germany in 2004 according to www.farmsubsidy.org) have, by and large, an ecologically detrimental impact.

► To date, the "Cross Compliance" obligations have not been linked to the environmental objectives for water bodies.

► Best farming practices codes are not sufficient in terms of water protection; it is necessary to tighten the requirements and introduce a dynamic further development similar to a state of the art.

► New financing instruments (e.g. agri-environmental programmes) for water protection are in competition with subsidies for harmful agricultural practices.

Fundamental requirements for ecological payments to agricultural businesses:

► Ecological payments must be linked to clear environmental objectives.

► Such payments require a clearly defined baseline and should be granted only for ecological accomplishments beyond the so defined basic requirements.

► Cross compliance requirements must not endanger the ability to achieve good status of water bodies. Rather they should safeguard it.

► Correcting subsidies with adverse ecological effects should have priority over the disposition of additional grants and funding.

Much better integration of WFD environmental objectives is also needed in policies for navigation, hydropower and fisheries as well as flood protection.

» Water is not a commercial product like any other but, rather, a heritage which must be protected, defended and treated as such.

River Basin Management Planning obliges authorities to achieve good ecological status of rivers, lakes and coastal waters + Ecological goals include macrophytes, phytoplankton, invertebrates and fish. + Status classification of water bodies (2005) gave a realistic picture of the dramatic ecological situation of Europe's rivers, lakes and coastal waters: most of all water bodies were estimated at risk of not achieving good status.	− Specific goals for achieving good ecological status in 2015 in individual river systems drastically lower the general ambition of the WFD. Exemptions became the rule. − EU-wide eutrophication of rivers, lakes and seas caused by excessive agricultural and other emissions is by far not sufficiently addressed in management plans and programs. − As of 2011, River Basin Management Plans are still missing in some EU-member states.
Combating harmful chemicals in the aquatic environment – "Priority Substances" + The WFD calls for a combined approach (emission and immission oriented) and "phasing out" of the most problematic toxins in the aquatic environment.	− Adopted after years of delay, a daughter directive regulates only a tiny portion of highly problematic chemical substances in the aquatic environment.
Protection of Groundwater + Good chemical and good quantitative status of groundwater are addressed as environmental goals.	− Adopted after years of delay, a daughter directive does not apply a strictly precautionary approach and allows "filling up" with problematic substances to critical threshold levels.
Cost recovery, polluter pays principle and other economic instruments + EU member states are required to integrate environmental and resource costs into cost recovery and water pricing schemes.	− Enormous misallocation of water resources caused by non-existing cost-recovery for irrigation continues − The economic analyses of river basins fail to estimate the enormous social cost of water pollution − The 2010 deadline for new water pricing schemes was not met in most countries
Common Implementation Strategy and international cooperation + EU-wide implementation strategy has improved cooperation. + Authorities have established working structures to cooperate in international river basins.	
Transparency and public participation in water management + The obligation to foster public participation has increased transparency of water management and public awareness for water policies.	− The level of transparency and public participation varies considerably among states and river basins.

4. Large Dams – Beware of False Solutions

There are more than 50,000 large dams around the globe. On more than half of the world's rivers, there is at least one dam. Thousands of new dams and hydropower projects are currently being planned. Dams serve a range of purposes such as irrigation, energy generation, drinking water supply or flood protection. While they can make an important contribution to satisfy human needs, their negative impacts too often outweigh their benefits. As the World Commission on Dams concluded in the year 2000, "in too many cases an unacceptable and often unnecessary price has been paid to secure those benefits, especially in social and environmental terms, by people displaced, by communities downstream, by taxpayers and by the natural environment".

Worldwide, 40–80 million people have been displaced by large dams. Massive violations of human rights occur as regulations in major dam building countries often do not comply with international standards for compensation and relocation of the affected population. Their participation in the planning of projects is not guaranteed, protests are often enough suppressed by force. Along with their villages, cultural heritage of the former inhabitants is lost; numerous cultural sites of international importance have already been buried under large dams.

Large Hydropower under the Clean Development Mechanism (CDM)

Most big hydropower projects that are realised in the framework of the Clean Development Mechanism (CDM) raise severe concerns, especially those in China and India. Many of them do not additionally contribute to climate protection compared to a scenario without CDM. They would be built without the financial contribution of CDM credits, as they are profitable without CDM and/or have been planned long ago. But according to UN regulations, the principle of additionality should be the central criterion for assessment of environmental integrity of CDM projects. After all, the generated CDM credits will be used in industrialized countries to fulfil their emissions targets based on the Kyoto Protocol. Lame certificates that are not drawn from additional projects hence lead to a global increase of greenhouse gas emissions.

Furthermore, many CDM hydropower projects lead to serious ecological and social damage, e.g. because of deforestation or by relocation and displacement of inhabitants from their hereditary territory. Inadequate public consultation is a common feature despite the immense negative impact hydroelectric power plants usually have on the livelihoods of the affected communities. In extreme cases major human rights violations by project developers have been reported.

477 big hydropower projects were registered by the UN under CDM regulations worldwide by September 2011, and thus confirmed according to the UN regulations. Another 371 projects have been submitted for registration. It is estimated that large hydropower projects will account for more than 20 % of CDM-certificates by 2020.

Large hydropower projects should not be accepted as CDM projects neither by the UN nor by national licensing offices. The granting of emission credits should be stopped for the registered projects.

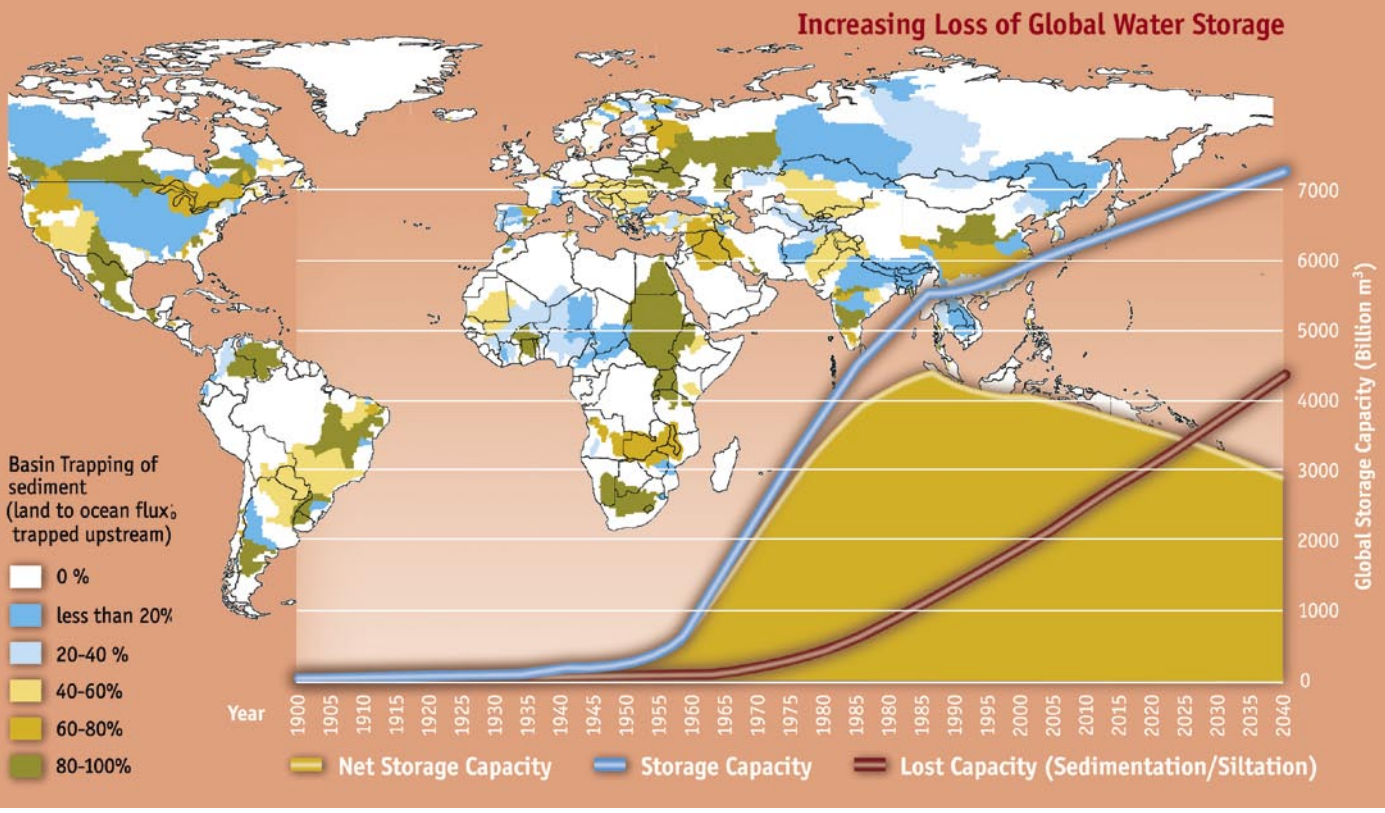
Environmental impacts

The environmental impacts of dams are dramatic. Running rivers are turned into lakes in which poor water quality and habitat conditions lead to a fundamental transformation of the former river and riparian ecosystems and a drastic change and decrease in their biodiversity. Dams interrupt the migration corridors of fish and disconnect spawning areas from other habitats. The collapse of fish populations as well as the alterations in hydrological regime and water quality cause dramatic effects for those who settle along the river and whose livelihood depends on the river ecology – infringing upon their right to water, food and life.

Environmental and social impacts percolate far downstream. Many rivers do not even reach their mouths any more. As sediments are held back behind dams and decrease their storage capacity, their lack downstream results in drastically increased erosion of riverbeds and shrinkage of entire deltas. Dams on transboundary rivers can exacerbate regional conflicts if not planned in cooperation with neighboring states in accordance with international law. Further problems are extreme increases of costs and delays. Dams, esp. for irrigation, often do not meet the expectations. Large dams mainly benefit large farms and enterprises, while the rural population often remains without improved access to water and energy.

Dams and climate change

With regard to climate change, the two paramount risks of dams are that 1. dam reservoirs emit greenhouse gases and 2. river flows are increasingly unpredictable. Many dam projects do not have a positive balance regarding their climate effect: Particularly large reservoirs in the tropics release enormous amounts of methane and can cause even more greenhouse gas emissions per megawatt than coal-burning power plants. As climate change is likely to cause unpredictable changes in the hydrological regime, dams are turning into a more and more risky technology that puts the live of millions of people at risk in case of dam failure due to unprecedented floods. At the same time, increased droughts cause energy shortages in countries with a high dependency on hy-



Since the early 1990s, the loss of reservoir space through sedimentation exceeds the storage capacity of newly built dams. Based on data from Jenzer and Cesare (2005) and GWSP Digital Water Atlas (2008), Map 51: Sediment Trapping by Large Dams (V1.0), available online at http://atlas.gwsp.org

dropower as these plants can no longer run at their projected capacity.

Dams can therefore not per se be regarded as a solution for water, food security, energy and climate problems. This is also true for smaller hydropower plants that often are argued to be an environmentally friendly and socially acceptable alternative to large dams. Small dams might just as well have massive impacts on ecosystems and human rights if former river stretches run dry and access to water is constrained.

WCD framework for dams and development

The World Commission on Dams (WCD) in which a broad spectrum of interests including both hydropower industry and critical non-governmental organizations were represented, reviewed problems of large dams based on extensive studies. On this basis, it produced a framework for decision making with recommendations on how large dams can better benefit society and produce less ecological damage. The WCD calls for a rights-and-risks-based approach with negotiated outcomes and establishes a set of seven priorities: Gaining public acceptance, comprehensive options assessment, addressing existing dams, sustaining rivers and livelihoods, recognising entitlement and sharing benefits, ensuring compliance, sharing rivers for peace, development and security.

With its final report, the WCD fulfilled its mandate to establish internationally acceptable criteria, guidelines and standards for the planning, design, appraisal, construction, operating, monitoring and decommissioning of dams.

However, in contrast to the WCD framework, dam and hydropower industries in their efforts to promote hydropower as climate friendly aim to establish the Hydropower Sustainability Assessment Protocol (HSAP) as a new reference for dam projects. This protocol lacks basic requirements and undermines existing standards. Dam opponents and affected communities regard the HSAP as greenwashing.

Sediments

Dams have a limited lifetime of just a few decades. The WCD estimates that 1% of reservoir storage capacity is lost per year, causing 20 % of all reservoirs to be inoperable by 2015. Projected dams are not even able to compensate the loss of reservoir volume through sedimentation. Sediments trapped behind dams not only impair the functioning of reservoirs, but are also missing downstream, resulting in increased erosion of river beds and deltas. Technical solutions to allow sediments to pass through dams are urgently needed as they could help to mitigate environmental impacts and prolong the lifetime of existing dams. New dams must not be built unless sufficient sediment transport as well as biological continuity are guaranteed.

Decommissioning

For existing dams, dismantling of these immense infrastructures has rarely been addressed early on, leading to enormous risk for the safety of inhabitants downstream and often leaving the high costs of maintenance of inoperable dams or their dismantling with the public.

The WCD recommends that provisions for decommissioning should be included in dam design and project licenses should define “the responsibility and mechanisms for financing decommissioning costs”. Also, funds should be “set aside for decommissioning at commissioning and/or during the period the project is under license and generating revenues”.

For more information please refer to
GegenStrömung / CounterCurrent
Heike Drillisch:
▸ *http://www.gegenstroemung.org*
World Commission on Dams:
▸ *http://www.dams.org*
International Rivers:
▸ *http://www.internationalrivers.org/de*
CDM Watch:
▸ *http://www.cdm-watch.org*

5. Agriculture and Irrigation – Reducing Wastage and using Water well

Agricultural impacts on water

The main water problems caused by agriculture are well known: They include overabstraction of ground and surface water (often

for highly inefficient irrigation), massive eutrophication and pollution of groundwater, rivers, lakes, coastal waters and seas with fertilizers and pesticides as well as large scale ecosystem destruction particularly through drainage, often transforming farmed peatlands into hotspots for greenhouse gas emissions. An estimated average of 60 % of all irrigation water is wasted unproductively in developing countries. Almost anywhere in the world, agriculture seems to have the right to pollute and to overuse available water resources.

What role for agriculture?

Under the current agricultural policies it seems largely impossible to meet the challenge of reducing wastage and using water efficiently. As agriculture is among the most heavily subsidized industries, it remains necessary to reconsider which kind of agriculture we want, and what we expect from agriculture: Do we want industrialized production systems based on high inputs of fossil fuels and high emissions or do we want multifunctional land use? Do we focus on maximum net productivity at any social cost or do we expect the provision of goods and services along with benefits through land and water stewardship?

Industrialized agriculture as practiced in Europe is even more capital intensive than industry. For example, the capital stock per agricultural employee in Germany (as of 2010) amounted to EUR 281,000 – in comparison to an average of EUR 172,000 per industrial employee. Should this type of agriculture really be the role model for agriculture in developing countries?

Valuing water in agriculture

More sustainable agricultural water use will most importantly require economically sensible policies to better allocate water resources and implement the polluter pays principle. This includes to reconsider which water demands are paramount (re-assignment of property rights) and how external costs of farming can be reduced. The setting of water-saving objectives will need to be coupled with the introduction of fair water pricing. Efficiency in agricultural water use needs to be increased through both supply and demand side management: Tapping the enormous potential of water saving requires the promotion of technologies for more efficiency and water recycling, less water consuming crops and generally more sustainable farming systems, particularly organic farming.

Productive water use

80 % of the people suffering from hunger live in rural areas. Farming and herding are the main economic activities of these groups. Access to water is a core prerequisite for rural communities to produce food and other products. Thus, water governance and conservation efforts must not reduce poor people's access to these resources.

A human rights based approach should be applied when it comes to water governance, conservation or irrigation projects and policies. The negotiations on Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security should result in a core reference paper. In contrast to this, large scale agricultural projects (e.g. sugar cane plantations or soy production) often use water resources in an unsustainable manner. This does not only inhibit future generations' access to productive water for future generations but also regularly entails negative effects on access to water for local populations.

Social cost of farming in France – environmental and resource costs inflicted on water users

The study "Assessing water pollution costs of farming in France" published by the French minister for Ecology in September 2011 shows that agricultural nitrogen and pesticides surpluses lead to additional treatment costs in the range from EUR 640 millions to EUR 1.14 billion per year. These are paid by households through their water bills.

6. Water Pricing and Cost Recovery – Implementing the Polluter Pays Principle

A core task of water policy is to create the framework for allocating a public good. If the goal of allocating water resources is the benefit of society as a whole – including healthy ecosystems – and not the profit of a single sector, there is no alternative to meeting the basic requirements of full transparency of public spending (investment, subsidies and incentives) and getting the prices right in order to reflect and recover immediate and external costs.

Economic instruments in water policy are not ends in themselves. They are to support the achievement of environmental objectives and should build on and support existing regulatory and planning targets. Furthermore, they serve as important instruments for the integration of water protection into other policy fields.

As for the European Union however, it can be concluded from a review carried out by GRÜNE LIGA, that economic instruments provided by the Water Framework Directive have so far been insufficiently implemented in the national water policies and in River Basin Management Plans of EU member states.

Key challenges that need to be addressed by policy makers and authorities:

- Apply the polluter pays principle more consistently: oblige energy producers, mining companies, agricultural business and other intensive water users to pay adequate contributions to the recovery of costs.

- Develop quantity-dependent water prices as a key incentive for more sustainable water use.

- Assess external costs of water uses and internalise these using taxes.

- Quantify subsidies with adverse ecological effects and correct these as quickly as possible.

- Introduce additional economic incentives and sanctions as a means for achieving water management objectives.

The polluter pays pays principle as environmental policy guideline assigns responsibility to those causing environmental pollution and/or consuming resources (e.g. agricultural irrigation water losses and pesticide, phosphate and nitrate emissions to surface and groundwater). In line with that, water pricing is a key instrument for sustainable water allocation and use. In general terms, this means to a) assess the immediate costs of water services and uses and b) recover these costs through water charges. Water prices based on the principle of cost recovery should be paid by households, but need to be kept at socially acceptable levels. To implement the polluter pays principle, it is important to also apply the cost recovery requirement to all other water abstractions and discharges, and in principle to all water uses.

Moreover, water pricing offers a way to internalise environmental and resource costs. With regard to the immense impacts particularly of water uses in agriculture, mining, industry and the energy sector, it is necessary to a) assess the externalities of all water uses (environmental and resource costs) and b) internalise these costs into the water price using charges, fees and/or taxes.

In the case of lakes and rivers, not only public water services, industry or farmers are users of the ecosystems, but also the tourism and recreational sector. Lakes are the main attraction for water sports and vacations in lakes regions. Tourism and recreational companies are benefiting from these ecosystems. Therefore they should also contribute financially to the maintenance of lakes – additionally to paying an adequate price for water and waste water treatment.

The adverse effects on hydromorphology caused by navigation, hydropower, urban and tourism uses, as well as pollution and overuse by agriculture need to be reflected in economically effective incentives in order to promote sensible economic action. Accordingly, damage to wetlands and floodplains caused by large-scale lowering of the (ground)water level, which is associated with these uses, should also be factored in. In this way, water pricing helps to integrate water needs of ecosystems and costs of ecological compensations into decision making.

Example of effective cost recovery from Germany

1. Quantity-dependent water prices for public water supply in Germany, which by and large recover costs, have been a successful model – also when compared to other EU countries – and have led to a significant reduction in drinking water consumption since 1990. As they have proven an effective incentive, quantity-dependent prices that recover costs should also be charged for other water abstractions and uses, particularly farming, mining and energy production.

2. In Germany, water abstraction taxes and the wastewater tax are currently the most important instruments for allocating environmental and resource costs to polluters. These resource usage fees are a means to include the ecosystem service of providing clear and healthy water into the economic system – at least partially. Such fees serve both incentive and financing functions. Earmarking the revenue for water protection objectives is essential.

In the light of European and international discussions and experiences of the past years, there is an urgent need to make better use of water pricing as an economic instrument. It is obvious that the allocation of a resource can never be efficient if the price does not reflect the true cost of its abstraction and use.

Protests against big Hydropower projects are a key driver of civil protests in Chile

Correcting harmful subsidies

The large number of ecologically harmful subsidies should be evaluated comprehensively in terms of their extent and their impact on water resources. To date, there are still no precise figures available about the scale of environmentally damaging subsidies related to water resources. There are only rough estimates for environmental harm caused by subsidies. Estimates by the European Environmental Bureau (EEB) show that the Common Agricultural Policy (CAP) is responsible for EUR 40 billion worth of ecologically damaging subsidies. In view of the volume and its ecological importance, agricultural subsidies including those on biomass production must most urgently be assessed in detail in terms of the pressures and impacts they impose on water resources.

It is necessary to take corrective action for subsidy policy, particularly in the area of agricultural funding, and this must have priority over the disposition of additional grants and funding. Public money must not be spent on the destruction of public goods.

Other economic incentives

Among the various economic instruments in discussion to reduce water pollution, taxes on mineral fertilizers and pesticides can be highlighted as easy and effective incentives for the reduction of emissions from agriculture.

Ever since the TEEB (The Economics of Ecosystems and Biodiversity) Study was published, the immense economic benefits of ecosystems and biodiversity have become a prominent topic in environmental policy. Such benefits need to receive greater recognition in the field of water protection.

7. Publically Owned Water Management – Reclaiming Transparency

After years of involvement in developing countries, global corporations have realized that it is not easy to make business with people who live on less than a dollar a day. Especially rural areas would remain unserved.

Even if private companies use development funds to make business in areas which would otherwise not be profitable, good governance and public control over water services is essential.

Governments should feel responsible to ensure their citizens' rights. However, mismanagement is even common in the public sector and includes corruption, misplaced investments and lack of funding. This shows that civil society pressure must not only be directed towards private corporations, but also towards governments: If the private sector is to take over a service, it must at least be under public control in order to ensure access to water for all citizens.

Uncontrolled private sector involvement usually leads to an inhibition of democratic and transparent water management. Confidential contracts between private companies and governments are common, resulting in exclusion of the public from water management, e.g. through untransparent pricing policies.

Demanding publicly owned water management is not restricted to the provision of drinking water and safe sanitation. Water management includes all decisions and policy changes made regarding water resources. Here, the public needs to be involved as there is an immense impact of water quality and security on everyday lives. Such involvement can only be achieved with a high level of transparency.

Mechanisms of involvement of the public must be low-threshold in order to get a broad picture of the public opinion. If water management decisions are based on high involvement of the general public, experts and other stakeholders, obstacles during the implementation process can be reduced. Different methods of public participation are available. These include amongst others facilitated working groups and online tools. Awareness building in the general public is needed as the connection between political decisions and peoples' personal lives is not commonly recognized.

"It's our water": 666.235 citizens of Berlin voted "yes" (98,2%!) in a people's referendum on full transparency of the contracts that led to the partial privatisation of the Berlin water works – an impressive call for more public ownership of the water sector in Germany's capital (February 2011).

We conclude that water management can only be sustainable and problem-solving if it is publicly owned, transparent and focused on the needs of the poor.

GRÜNE LIGA

The Ecological Movements Network GRÜNE LIGA was founded in preunified East Germany in 1990 as a platform for all environmental causes. It deals with subjects like climate change, traffic, mining, biofuels and East European cooperation. It also runs an organic marketplace. GRÜNE LIGA is a leading NGO in the field of water policy in Germany. It is a member of the German League for Nature and the European Environmental Bureau in Brussels.

The Water Policy Office has been part of the Water Working Group of the European Environmental Bureau (EEB) for years and participated in the EU-wide drafting process for the EU Water Framework Directive and other European water legislation processes and has coordinated the statements of German environmental organizations nationwide.
Michael Bender manages projects on the European Water Framework Directive for GRÜNE LIGA with focus on the protection of aquatic ecosystems. He coordinates the water working group of the German Forum on Environment and Development (FUE). One of the main topics there is the human right for water and sanitation. He is working in the water working group of the EEB since 1998.
GRÜNE LIGA has – together with partners in the German League for Nature Conservation (DNR), the European Environmental Bureau (EEB) and WWF – over the past ten years closely followed the implementation process of the WFD in Germany and neighbouring countries, with a particular focus in the Elbe river basin.

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