



# International Rivers and Lakes

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The editor encourages contributions of news items for an exchange of information with interested readers.

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Director  
Division for Sustainable Development  
Department of Economic and Social Affairs  
United Nations, Room DC2-2220  
Two UN Plaza, New York, N.Y. 10017

## **I. Northern Sinai Agricultural Development Programme (NSADP)<sup>1</sup>**

The Northern Sinai Agricultural Development Programme (NSADP) is a controversial agricultural project.

Critics of the project itself, without considering the complicating political issues discussed later, argue against environmental consequences, based on anticipated water scenarios. It is claimed that it will lead to increased salinity in the project area and total loss of productivity. FAO recommends that, “A cautious approach to increasing the use of drainage water is likely to be in Egypt’s long-term interest.” Egypt is one of 17 countries projected to suffer ‘absolute water scarcity’ by 2025. The World Water Commission, listing the Nile as one of the most polluted rivers in the world, faults the overuse and misuse of land and water resources as a primary cause.

Although the current atmosphere in the Nile Basin is one of cooperation, the situation is critical, because the Nile water is not sufficient to cover the needs of both Egypt and Ethiopia, not to mention the needs of the other riparian countries.

According to a study by the Australian EIA Network, “The Nile is not an infinite resource. The control of its waters has almost reached its limit. The gap between demand and supply is bound to increase, bearing in mind that riparian countries have population growth rates over 2.6% per year. The possibility of a technological breakthrough in agricultural practices and production is remote.”

The implications of the NSADP project far exceed the boundaries of Egypt. The main threat of this project (and the more recent Tushka project) is that it may lead to an environmental (water) conflict between Egypt on one hand and other Nile riparian countries, particularly Sudan and/or Ethiopia.

Also, there is the perception that one purpose of the NSADP would be to transfer Nile water to Israel by connecting the Nile to the National Israeli Water Carrier, as promised by President Sadat when he ordered the feasibility studies. This is supported by the Israeli request for 1% of the Nile waters during the peace negotiations with Egypt. However, it is important to note that Egyptian President Hosni Mubarak, the Minister of Agriculture and the Minister of Public Works and Water Resources categorically deny that the project will deliver water to Israel.

It is argued that Egypt is actually using more than its share of the Nile water, wasting it on desert land of doubtful value, at the expense of better use elsewhere in the Nile valley, e.g in Uganda and Sudan, to irrigate more fertile land that only lacks water.

It is claimed that the project should adhere to one of the main policy recommendations of the EIA Network:

“In order to reduce the negative impacts on the local population in Sinai and to avoid large-scale irreversible destruction of archaeological sites and monuments, prospective funding

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<sup>1</sup> From: <<http://www.geocities.com/khodari/home.html>> Posted 20 February 1998. Last updated 19 November 2000.

agencies should make financing of the NSADP subject to conditionality with respect to the following points:

- a) Development by the Egyptian Authorities of a positive integration strategy for the indigenous population of the Sinai, based on equity and preservation of cultural values and heritage.
- b) Appeal of the Egyptian Government to the international community for technical and financial assistance for the implementation of an emergency archaeological rescue plan for North Sinai.”

Recent developments may suggest a change in Egyptian policy towards Nile riparian countries. International organisations seem to appreciate the dangers of the situation along the Nile. A Nile Basin Initiative (NBI) was launched in Dar es Salaam (Tanzania) in February 1999. Also, the Canadian International Development Agency (CIDA) launched a Nile Basin Support Project in October 1999. UNEP, UNDP and the World Bank launched an Internet-based Interactive Forum on Land and Water Initiative in Africa. Moreover, enlightened Ethiopians are calling for cooperation with Egypt on Nile water. In November 1999, Sudan, Egypt and Ethiopia agreed to cooperate on Nile water. According to the Sudanese Irrigation Minister, the three sides have agreed upon “... the sustainable development of the Nile water through the equitable exploitation of the river for the common benefit of all the river basin States.” The Minister added that, “All projects to be launched on the river should seek the common benefit of all member States. This should be included in accompanying feasibility studies.”

An environmental impact assessment, submitted to the World Bank and the Government of Egypt in January 1992, will now be released and may shed light on the different aspects of the NSADP project.

## **II. Dams Could Delay European Union Entry for Poland<sup>2</sup>**

It is claimed that Poland risks delaying its membership in the European Union if it goes ahead with two controversial river engineering projects, warned the World Wide Fund for Nature (WWF), the conservation organization. The two projects are:

- a) A proposed new Euro 270 million dam on the Lower Vistula at Nieszawa, that would irreversibly damage one of Europe’s last large and almost free-flowing rivers and some of Europe’s most outstanding natural landscapes.
- b) The Euro 2.5 billion Odra 2006 project involving two new dams and major river engineering works for shipping, flood defence and water quality improvement.

It is argued that greener, more efficient and economically and socially beneficial alternatives put forward by WWF and Polish organisations have been ignored by the Polish Government. “Poland has already been warned by the Commission that early accession is threatened by its poor environmental performance,” said Tony Long, Director of WWF’s European Policy Office. “Going ahead with these two projects will fuel the European

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<sup>2</sup> From: <http://www.wwffreshwater.org/newsroom/newsroom19.html>; WWF International website: WWF European Freshwater Programme – Home; 19 September 2000 Press Release.

Commission's belief that Poland is not taking seriously its obligations to conform with EU environmental law."

The EU-Poland Association Agreement states that Polish development policies must be guided by the principle of sustainable development and take full account of environmental considerations. The EU-Poland Accession Partnership Agreement makes it a priority for Poland to adopt EU environmental law.

"The Nieszawa dam project is in breach of Environmental Impact Assessment, the Access to Environment Legislation and the Birds and Habitats Directives as well as being contrary to the Amsterdam Treaty commitment to sustainable development," commented Mr Long. "Poland can put its environmental record back on track for early EU membership by cancelling these projects and working with the Commission and NGOs like WWF to implement greener and more cost-effective alternatives."

The European Commission has criticised Poland many times for not making enough progress in adopting EU environmental law. During a visit to Poland in March, Commissioner Wallström expressed her concern about the impact of the proposed Nieszawa dam. The Commission, in response to an oral question from former Danish Health Minister Torben Lund, ruled out EU funding for the Nieszawa dam, but has confirmed that funds could be available for alternative schemes. Most EU countries are moving away from big dam projects towards more cost-effective and eco-efficient solutions.

The dams are opposed in Poland by many organisations including WWF, the World Conservation Union, Klub Gaja Eco-Cultural Society, Polish Society for the Protection of Birds, and Angling World Magazine.

### **III. The Prespa Basin: Transboundary cooperation to maintain and enhance wetland functions and values<sup>3</sup>**

Lakes Mikri and Megali Prespa are situated in the Balkans, at the borders of Albania, Greece and the Former Yugoslavian Republic of Macedonia (FYROM). The area is widely known for its natural beauty, its high biodiversity and its rare water bird populations, as well as for its cultural value, including Byzantine monuments, traditional architecture, unique fishing methods, etc.

A large part of the lakes and their catchment basins have been characterised as a Wetland of International Importance under the Ramsar Convention. The lakes are of tectonic origin and do not have a surface outflow. Mikri Prespa flows into Megali Prespa, which in turn flows to Ohrid Lake through subterranean channels and thence via the river Black Drin to the Adriatic Sea.

Since the 1960s, human interventions in the three countries have negatively influenced the hydrological regime of the area and consequently its ecological functions. Environmental degradation has also had a negative impact on the socio-economic situation of the local communities in all three States. This has resulted in depopulation and unemployment, despite the

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<sup>3</sup> From: <http://www.wwffreshwater.org/seminars/sem2/malakou.html>, WWF International website, WWF European Freshwater Programme – Home.

costly development projects implemented by the governments, especially in Greece, in recent years. The unbalanced and unresponsive kind of development that was implemented did not improve the living standards of the local people and did not succeed in retaining the younger population.

Since the early 1970s, Greek and other European conservationists have struggled for the protection of the area. Their efforts resulted in the establishment in 1990 of an umbrella association called the Society for the Protection of Prespa (SPP) based in the Greek part of Prespa. Within ten years, the SPP succeeded through conservation work to rescue and establish the biggest single breeding colony of Dalmatian pelicans in the world, a vulnerable species. In addition, through grassroots work, SPP successfully gained the participation and involvement of the local community in planning for the future of Prespa and for the sustainable management of its natural resources.

In 1999, the SPP received the Ramsar Award for its ability to motivate and persuade all stakeholders to work cooperatively for the sustainable management of the Prespa wetlands. The Award stimulated State authorities in the three countries to begin cooperation for the protection of the Prespa area. The SPP and the WWF took the initiative to submit to the Greek government a proposal for the establishment of the first transboundary area in the Balkans in Prespa. The response of the Greek Government was very positive; thus on 2 February 2000, the three Prime Ministers of Albania, Greece and the FYROM signed the declaration for the establishment of the Prespa Balkan Park.

Future priorities include: the formulation of a common vision among stakeholders in the three countries; the completion of a feasibility study for the organisation of the Park; the implementation of a Strategic Action Plan on the sustainable development of the whole area; and the establishment of a monitoring scheme.

#### **IV. World Bank Seminar on Groundwater<sup>4</sup>**

A report on an important seminar on 'Groundwater: Legal and Policy Perspectives' held by the World Bank in 1999 has been released. The structure of this report follows closely the design and format of the seminar held in Washington on 19 April 1999. Like the seminar, the report consists of an introduction and four separate, but interrelated parts, each with a separate set of chapters:

The Introduction includes the keynote address delivered at the seminar. It argues that water crises are likely to result, not from physical scarcities, but rather from quality deterioration and lack of investments in the water sector as a whole, including groundwater. The Introduction also highlights the linkages between groundwater and energy, and the need to ensure proper recharge of groundwater.

The first part of the report deals with understanding groundwater. Chapter I explains some basic technical aspects of groundwater and discusses how groundwater is insufficiently understood, irrationally exploited, and inadequately protected. The chapter highlights some essential concepts for groundwater regulators. Chapter 2 deals with groundwater and society,

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<sup>4</sup> From World Bank Technical Paper No. 456, "Groundwater: Legal and Policy Perspectives" edited by Dr. Salman Salman, World Bank 1999.

and describes how the perception and treatment of groundwater as a private resource has thwarted the attempts to exercise a measure of equity and control over abstraction and protection of groundwater. The chapter underscores the importance of engagement of users to encourage sustainable use of the resource.

The second part deals with the regulatory framework for groundwater. Chapter 3 surveys a number of groundwater regulations, and traces the move from private ownership of the resource to the current practice where most governments exercise a wide range of regulatory authority. The chapter discusses some issues, options and best practices associated with such regulation. Chapter 4 deals with institutional and legal issues relevant to the implementation of water markets and explains how groundwater markets are used in different parts of the world today, both as a tool for efficiency, and for improving access to the resource. The chapter discusses how groundwater marketing without appropriate knowledge and management of the aquifer could prove unsustainable.

The third part deals with the World Bank's experience with groundwater. Chapter 5 discusses the objective and components of the Bank-financed Bangladesh Arsenic Mitigation - Water Supply Project. The chapter underscores the importance of considering all aspects of groundwater quality in the environmental impact assessment of development projects that impinge upon groundwater. Chapter 6 deals with groundwater resources management in Jordan, and discusses some policy and regulatory issues. The chapter explains the sources and uses of groundwater and the challenges that scarcity poses for the management of groundwater, including the issue of cost recovery. Chapter 7 deals with legal and institutional issues related to groundwater management in Mexico, and summarises the aquifer stabilisation study conducted for some of the overexploited aquifer. The chapter emphasises the importance of user involvement, water rights and water markets and tariffs. Chapter 8 discusses the World Bank's experience with groundwater irrigation in Nepal and highlights some major issues that arose in some of the Bank-financed projects there. Those issues include lack of farmers' involvement and ownership in groundwater development, analogous to the situation in Mexico. Chapter 9 describes the groundwater situation in Yemen and the World Bank's involvement there. The chapter stresses the urgent need for a regulatory and legal framework for water resources in Yemen, a need which is typical of many developing countries.

The fourth part deals with international groundwater law. Chapter 10 describes the evolution and context of the legal principles that govern the use and protection of shared groundwater resources, including a discussion of what constitutes international groundwater. The chapter discusses the sources of such principles and concludes that international groundwater law is still in the embryonic stage. Chapter 11 deals with international groundwater law and World Bank policy for projects involving transboundary groundwater. After similarly tracing the legal principles for shared aquifers, the chapter analyses World Bank practice in a few cases involving such shared aquifers. The chapter underscores the need for the policy to incorporate the practice as enunciated in the few projects involving transboundary groundwater. Chapter 12 highlights principles of international environmental law that may be relevant to transboundary groundwater, particularly those incorporated in the Rio Declaration and the concept of sustainable development. The chapter discusses how the application of precautionary modalities could be extended to transboundary groundwater.

## V. Arab-Israeli Water Issues<sup>5</sup>

(The following article was originally published in the *Globe and Mail* in July 2000, before the breakdown of peace talks between Israelis and Palestinians.)

“If there is political will for peace, water will not be a hindrance. If you want reasons to fight, water will give you ample opportunities.” (Uri Shamir, Israeli hydrologist)

**Cooperation, not conflict.** As Israelis and Palestinians approach final status talks, water is high on the agenda. As Israelis and Syrians jockey for negotiating room, the waters of the Golan and of the Sea of Galilee are points of contention. Yet, tough as these issues are, there is little danger that inter-state conflict will erupt over water. Even in the Middle East, where water is scarcer than anywhere else in the world, water has served as a greater cause for cooperation than for conflict.

The notion of cooperation over international water resources will strike most readers as anomalous. Most of us have heard that “the wars of the 21st century will be about water,” as World Bank Vice President Ismail Serageldin stated a few years ago. Or that water was the only conceivable reason for Jordan to go to war with Israel, as the late King Hussein is alleged to have said.

There is, however, very little evidence that disputes over water have led or are about to lead to international conflict. (Nor has anyone been able to document King Hussein’s remarks about going to war with Israel over water.) Though some have asserted that Arab-Israeli warfare has been motivated in part by the desire to assert control over water resources, historical evidence shows that water was not a factor in strategic planning by either side during the hostilities of 1948, 1967, 1978, or 1982.

**Water problems.** If water wars are unlikely, does this mean that we need not be concerned about conflict over water? Not at all. Worldwide, water use increased more than six-fold in the 20th century, and it continues to grow twice as fast as the increase in population. Problems associated with water scarcity and control over water resources are all too common. However, they are much more likely to occur within countries — such as the competition for water between urban dwellers seeking drinking water and farmers seeking water for irrigation — than between countries. The violence that erupted in 2000 in Cochabamba, Bolivia, following tariff increases for municipal water illustrates the kind of water conflict that we can expect to see in the future (see Toronto *Globe and Mail*, 9 and 18 May 2000).

Experience shows that the presence of water along an international border is more likely to provide a catalyst for cooperation than conflict between the countries that depend on it. Researchers at the University of Oregon have compiled a Transboundary Freshwater Dispute Database. In examining the cases generally considered to be examples of international water conflict, they have arrived at a surprising conclusion: Instead of confrontation, countries that share water resources tend to maintain dialogue and negotiation leading to treaties for joint management of water.

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<sup>5</sup> From: IDRC REPORTS: Drinking (Water) With Your Enemy by David Brooks and Jamie Linton: <[http://www.idrc.ca/reports/read\\_article\\_english.cfm?article\\_num=821](http://www.idrc.ca/reports/read_article_english.cfm?article_num=821)>

***Jordan River.*** The Jordan River forms much of the boundary between Israel and Jordan and is one of the world's most hotly contested waterways. Even while these two countries were legally at war, they maintained informal contacts over the management of the river. As a result, when the Jordan-Israel Peace Treaty was signed in 1994, it was possible to include a well-developed annex devoted to "... achieving a comprehensive and lasting settlement of all the water problems between [Israel and Jordan]."

What has been true for surface water along an international border also seems to be true for aquifers underlying a border. Prior to the signing of their historic agreement in 1993, Israeli and Palestinian academics and officials began holding discussions on joint management of the Mountain Aquifer, an extremely important source of groundwater underlying both Israel and the West Bank. The success of these discussions has helped forge a climate within which the broader peace process can take place.

***Examples of collaboration.*** Examples of collaboration over water are not restricted to the Middle East. Despite three wars and numerous skirmishes since 1948, India and Pakistan have managed to negotiate and implement a complex treaty on sharing the waters of the Indus River system. During periods of hostility, neither side has targeted the water facilities of the other nor attempted to disrupt the negotiated arrangements for water management.

***Nile basin.*** In Africa too, where eleven countries share the basin of the Nile, cooperation over water is more evident than conflict. "Perhaps the weight of history lies too heavy in the silt of the Nile valley", writes historian Robert Collins, "but man will always need water; and in the end this may drive him to drink with his enemies." In North America, the International Joint Commission, which manages waters shared by Canada and the United States, is considered such a model of success that it is being emulated by other nations.

***Minor skirmishes.*** Approximately 40% of the world's population live in the 264 river basins shared by more than one country. Put another way, almost half the world's land area is found in international water basins. And yet there have been only seven minor skirmishes over international waters in modern history, and even these involved factors in addition to water. Meanwhile, hundreds of international treaties have been negotiated to deal with water management, about 150 in the past century alone.

There is no doubt that humanity faces a worldwide water crisis. Growing demand for drinking water and the much higher demand for irrigation water are placing enormous pressures on available freshwater supplies. At the same time, increasing pollution is reducing the usefulness of available water. The threats that these conditions pose for the poor and for the environment can not be overstated. Nevertheless, it is far more useful to consider the role of water in promoting cooperation rather than conflict, particularly in international relations.

As the opening quotation suggests, those who are inclined to belligerence may look to water as a reason for fighting. But for most of us, water's greatest value may be the way it brings people together.

## **VI. Regional Cooperation on Flood Control in Asia<sup>6</sup>**

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<sup>6</sup> From: <http://unescap.org/enrd/water/pubs/wrs-1948.htm> Regional cooperation in the twenty-first century on flood control and management in Asia and the Pacific (Sales No.ST/ESCAP/1948, Bangkok, 1999).

A study on regional cooperation in flood control and management in Asia has recently been published. Floods have continued to be among the most severe annual disasters, particularly in Asia during the last few years, in spite of both regional and national efforts. According to a recent study by the United Nations, about 44% of the flood disasters that occurred in the world during the period 1987-1996 affected Asia. These disasters claimed some 228,000 lives and resulted in US\$ 136 billion worth of damages. In view of the increasing seriousness of flood disasters in the region, the Economic and Social Council for Asia and the Pacific (ESCAP) launched a project to promote regional cooperation in flood control and management in Asia and the Pacific. The project was based on the concept of regional cooperation as a process that requires the framework to be regularly strengthened.

The project is divided into two phases. Phase I was formulated as the framework-strengthening phase by building on past achievements of international efforts and ESCAP activities in this field. This phase reviewed experience of the flood control and management process within the context of economic and social development. It focused mainly on the urban environment, with particular reference to the most important growth centres.

The study process of phase I involved five groups of activities: (i) an overall review at the regional level; (ii) a core country case study (Thailand); (iii) two complementary basin case studies in the region (Upper Parramatta in Australia and Klang River basin in Malaysia); (iv) relevant international experience (Mississippi River in America and Rhine River basin in Europe); and (v) a regional workshop to formulate a priority programme of action in regional cooperation.

This publication is based on the findings of phase I and is the first of its kind that focuses on regional experience in flood control and management processes at the basin, national and regional levels. It aims to assist decision makers, planners and engineers to improve flood control and management policies, strategies and programmes.

The publication is also intended as a reference work for planners and professionals active in other fields, but engaged in development projects related to flood control and management. Hopefully, the publication will contribute to strengthening regional cooperation in this area.

The publication has been organised in two parts. Part one presents the process for the formulation of a conceptual framework that involves effective regional cooperation. It has been prepared as a stand-alone reference work and thus, summaries of the case studies for the selected river basins are included.

Part two provides detailed information on the five case studies prepared for the project under the activities mentioned at (ii), (iii) and (iv) above.

## **VII. Transboundary Issues: The case of the Ilisu dam project in Turkey<sup>7</sup>**

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<sup>7</sup> From <http://www.up.ac.za/academic/libarts/polsci/awiru/op30.html>, by Carsten Rohr.

Water is expected to become a major cause of international conflict in the new millennium. “Wars of the next century will be over water”. This warning comes from the World Bank, the largest international investor in water projects. Klaus Töpfer, head of the United Nations Environmental Programme, warns about extreme conflicts caused by already severe water scarcities. NATO’s Committee on the Challenges of Modern Society (CCMS) is dealing with water as a security risk. In 1994, the Centre for Strategic and International Studies in Washington identified 10 regions where water could become a reason for conflict. Almost every dam project increases tension between or within States.

***The Ilisu Dam in Turkey.*** The South-Eastern Anatolia Development Project (GAP) is a huge \$32 billion hydropower and irrigation scheme, which was initiated in the 1970s and is due to be completed in 2010. It involves 22 dams, 19 hydroelectric power plants and a network of irrigation canals for the rivers Euphrates and Tigris. It is planned that at full development over 1.7 million ha of land will be irrigated and 27 billion kWh of electricity will be generated annually with an installed capacity of over 7,500 MW. Both rivers rise in Turkey, where they gather about 90% and 50% of their flow respectively, before coursing through Syria and Iraq.

The Ilisu dam is the latest project, costing \$US 1.5 billion, currently the largest in Turkey, located on the Tigris River, 40 miles upstream of the Syrian-Iraq border, in the heart of the Kurdish area. A rockfill dam, 1,820 metres long and 135 metres high, will create a reservoir with a maximum volume of 10.4 billion cubic metres and a surface area of 313Km<sup>2</sup>. It has a capacity of 1,200 MW, and is expected to produce 3,800 GWh of hydroelectric power annually. The dam will also be used for irrigation. Demand for electricity is increasing by 8% a year in Turkey, and frequent power cuts are inhibiting economic growth. The claims of Turkey, Syria and Iraq on the waters of the Euphrates and Tigris exceed the capacities by 55% and 12% respectively.

***Consequences.*** The dams on the Euphrates, used primarily for irrigation, will reduce the average water flow by almost 50%; the Tigris projects, primarily used for power production, will reduce the average water flow by 10%. In addition, water quality will be degraded through salination, pesticides, and a decrease in mud content (a natural fertiliser) and fish population.

The dams will give Turkey control over the water supply flowing to Syria and Iraq, since the spare capacity of the reservoirs – the difference between maximum and normal operational capacity – would be sufficient to block any water flowing to Syria and Iraq for several months.

The Ilisu reservoir would flood 52 villages and 15 towns, including Hasankeyf, a Kurdish town of 5,500 people, the only town in Anatolia that has survived since the Middle Ages and under archaeological protection. The dam will displace approximately 16,000 people.

***Turkish objectives.*** The main (official) objective is the development in the poor south-east, both economically and socially, including communications, housing, industry, education, health and other services. According to Olcay Ünver, President of the GAP Regional Development Administration, “The GAP Master Plan’s basic development scenario is to transform the region into an agro-related export base”, and “... prosperity will be evident for everyone except the most prejudiced and opinionated”.

***Contractors, creditors and foreign involvement.*** The World Bank refused backing for the project in 1984, as the Ilisu project seems to violate five of its guidelines: on environmental assessment; environmental policy for dam and reservoir projects; involuntary resettlement;

projects on international waterways; management of cultural property; and disclosure of operational information. The World Bank's refusal to back the project meant that the Turkish Government had to find governments that would underwrite the project. They have submitted applications for export credit guarantees of about US\$ 850 million to nine countries (Austria, Germany, Italy, Japan, Portugal, Sweden, Switzerland, the U.K., and the U.S.).

**Possible alternatives.** In the environmental impact assessment, commissioned by Sulzer and ABB, no supply-side or demand-side alternatives to Ilisu have been considered as part of the feasibility studies. Renewable energies such as small scale hydro-electric power, passive solar, photovoltaics and wind energy are certainly good alternatives, as they can be distributed (at no or little transmission losses) and tuned to needs and potentials. To generate the same amount of energy as the Ilisu dam project by photovoltaics, for example, only 7% of the total flooded area would be necessary. Political decision making processes seem to be the biggest obstacle to distributed and decentralised schemes.

The solution to the world's water crises lies less in increasing supply than managing demand. Improved water management, water recycling, efficiency improvements, avoiding waste, and developing new technologies are just a few of the solutions available.

**Conclusion.** In the case of the Ilisu dam, downstream countries are in a strategically and materially disadvantageous position. Negotiations for a fair sharing of the water resources are urgently required.

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