IUCN
The World Conservation Union

Across the globe, the World Conservation Union (IUCN) – demonstrates how well-managed water-related ecosystems support the provision of goods and services that are essential to reduce poverty. They provide the basic resources on which many livelihoods depend. In its field projects, IUCN involves local communities, research organizations, expert networks, governments and non-governmental agencies to turn the principle of ecosystem management into sustainable solutions. The result is relevant knowledge and know-how to advise the natural resource managers around the world. This helps the development of policies, agreements and practices that allow healthy ecosystems to continue to contribute to local economies, human wellbeing and biodiversity. By taking an inclusive approach and creating tangible results, IUCN remains at the forefront of creating new knowledge and know-how for sustainable water resources management.

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IUCN
The World Conservation Union

Working for Water and People

Our mission

We influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of water resources is equitable and ecologically sustainable.

Our goal is to achieve healthy river basins that provide sustainable ecosystem services to livelihoods and societies.

What we do

Meeting human needs with healthy ecosystems

Ecosystems provide the basic resources on which many livelihoods depend. Across the globe, the World Conservation Union (IUCN) demonstrates how well-managed water-related ecosystems support the provision of goods and services that are essential to reduce poverty.

Developing knowledge for water and nature

Through demonstration projects, IUCN and its partners turn the principle of ecosystem management into sustainable solutions. Learning from these experiences, IUCN generates relevant knowledge and know-how for water managers around the world.

Empowering people to take action

Stakeholders need to negotiate access to and use of water. They need to find ways to balance their different needs, rights, and interests. Negotiations over water often lead to a marginalization of the powerless which are often the poor. Empowering stakeholders to have their rights and needs met is therefore critical to achieve sustainable water use. IUCN facilitates multi-stakeholder platforms and knowledge sharing to actively promote the participation of all stakeholders in water resources planning and management.

Guiding policy

IUCN collaborates with international organizations and other policy and research institutes. By leading global and supporting regional policy campaigns, and building coalitions, it strives to support sustainable water resources investment strategies of multilateral agencies and financial institutions. It engages in global water, development and environment policy and network mechanisms, such as the Ramsar Convention, the World Water Council, Global Water Partnership and UN Water, in collaboration with commissions and members. IUCN holds observer status at the United Nations which enables it to actively participate in the UN system to promote sustainable water use.

Discussion on transboundary issues at PAGEV meeting in Burkina Faso © *Daniéle Perrot-Maitre/IUCN*

The Water and Nature Initiative

The Water and Nature Initiative is an action programme which brings together stakeholders to demonstrate the sustainable management of water resources. Through field projects IUCN members and partners test how stakeholder participation, improved water governance and innovative financing can improve livelihoods and maintain healthy ecosystems. Work is carried out in the following river basins: Barra de Santiago-El Imposible Basin (El Salvador), Huong Basin (Viet Nam), Komadugu Yobe Basin (Nigeria), Lake Tanganyika (Burundi, Democratic Republic of Congo, Tanzania, Zambia), Mekong Basin (Southeast Asia), Okavango (Botswana, Namibia, Angola), Tacana Basin (Mexico, Guatemala), Volta Basin (Burkina Faso, Ghana), Pangani (Tanzania), Senegal (Mauritania, Mali, Senegal).

IUCN
Water and Nature Initiative

How we work

Our logic of intervention

By focusing on integrating policy and practice, IUCN contributes to water policy development and implementation around the world. It combines its support to members and partners at national levels with its work in demonstration sites. This linkage provides the basis for testing and implementing policies and scaling-up successful field-level results. It creates the necessary capacities amongst state and non-state actors to create sustainable solutions.

The underlying assumption is that when knowledge is available and people and institutions are empowered, they can better participate in decision making. This is translated into the Water-Value Chain: the value created by IUCN to influence, encourage and assist water managers to develop more sustainable practices. Individual actors (IUCN staff, commissions, members and partner organizations) contribute in their specific way to the creation and maintenance of a part of the Water-Value Chain.

The Water-Value Chain

Key elements of the Water-Value Chain include:

- the **research on and development of** an approach, service or product (e.g. research on economic instruments for water requirements of downstream ecosystems);
- the **marketing** of an approach, service or product that enables using gained insights and newly developed techniques (e.g. an environmental flow tool book and distance learning course);
- the **tailoring** of an approach, service or product to a specific situation and/or the needs of a partner (e.g. adapt an environmental flow assessment approach in a specific river basin to the local situation in collaboration with the river basin authority);
- the **assistance in applying** an approach, service or product in specific situations through project level work (e.g. providing technical backstopping to support the implementation of an environmental flow);
- the **building of a constituency network** including individuals and institutions that can maintain and promote the application of the approach, service or product (e.g. setting up a network of environmental flow specialists and practitioners);
- the **establishment of a common standard** regarding an approach, service or product that would allow for both up-scaling and adaptation (e.g. developing a 'menu' of standards on environmental flow assessments).

Children sowing rice in the Mekong Region in Thailand

IUCN members and partners

Working for water, IUCN promotes the involvement of its members and partners in the development and implementation of projects. It builds the capacity of its members and partners so they can better engage in planning, decision making and management of water resources, river basins and wetlands.

To deliver its work, IUCN engages in a range of scientific and professional networks. Examples include: EU research networks, Foundation for Science and Development, International Water Association, Mekong Research Network, Global Water Partnership, and the World Water Council. Linking with those networks supports the preparation of specific knowledge products: state-of-the-art tools, technical and scientific expertise, cutting-edge analysis.

IUCN Commissions

IUCN benefits from the work and expertise of a network of over 10,000 volunteer specialists from as many as 181 countries involved in six thematic commissions. This global web of 'knowledge and know-how' is unique among international environmental organizations. It provides IUCN with an unparalleled ability to undertake consultations on any aspect of environmental concern.

IUCN commissions working on water focus primarily on state-of-the-art reviews substantiating policies, developing toolkits, backstopping toolkit application and assisting demonstration sites. Examples of ongoing work include the preparation of the tool book Flow in collaboration with the Commission on Environmental Law and the Commission on Ecosystem Management, the Freshwater Biodiversity Assessment in Eastern Africa with the Species Survival Commission, and the development of a FLOW e-learning course with the Commission on Education and Communication.

IUCN Secretariat

The IUCN Regional Offices, and where present IUCN's National Offices, are the corner stone for linking demonstration practice to the development and application of instruments, and support to policies and legal frameworks. The Regional Offices lead the development and implementation of river basin demonstration practice. They backstop demonstration site partners on a wide range of issues such as biodiversity assessments, economic valuation, environmental flows, wise use of wetlands, multi-stakeholder platforms, financing, project management and learning. They ensure that the project experiences are used at national, regional and global levels to inform decision makers.

IUCN headquarters works closely with regional programmes in developing and implementing water, river basin and wetland activities. Central to its role is linking practice, instruments and policy. It strongly supports the work in demonstration sites and oversees the development of toolkits. It supports the development of regional water policy campaigns and leads on global water policy campaigns.

Villagers in Burkina Faso line up to get water from the local well, which they all contribute money for maintenance.

IUCN water and nature toolkits: supporting the mainstreaming of an ecosystem approach

The development of toolkits forms a key element to supporting the establishment of legal, economic or outreach instruments. They are at the centre of the learning process, combining various learning strategies such as telling stories, teaching, testing new ideas, staff exchange and apprenticeships. Increasingly, learning is used to assist practitioner networks and support professional updating.

Existing toolkits include:

Flow. The essentials of environmental flows

Change. Adaptation of water management to climate change

Value. Counting ecosystems as water infrastructure

Forthcoming:

Pay. A practitioners' guide for financing ecosystem services for water

Negotiate. Overcoming power differences in water management negotiations

Rule. Sustainable water rules

Where we work

The following section provides a few examples on how IUCN supports water-related projects around the world. Please visit our website **www.iucn.org/water** for a list and description of all our water-related projects.

Projects: Africa

View of Okavango river basin

Okavango River Basin

A plan for the world's biggest delta and its basin

The Okavango River basin, located in the northern fringe of the Kalahari Desert, is one of the largest river basins in Southern Africa, shared by Angola, Namibia and Botswana. The basin drains into the inland Okavango delta (Botswana) the world's largest Ramsar site. The annual flooding of the delta provides ecosystem goods and services on which local communities have depended for centuries. Today the delta's health and existence is threatened by its users and by developments up-stream related to mining, hydropower, water diversions, and irrigated agriculture.

The Okavango delta needs further investments to maintain its pristine character and address the needs of the people in the delta and the wider basin. These investments should be guided by a comprehensive natural resources management plan which accommodates people's needs and the sustainable use of resources.

Over the last three years, IUCN has supported the Government of Botswana in developing an Integrated Management plan for the Okavango delta. Consultations were carried out with a large number of people ranging from stakeholders in the delta right up to the highest level of decision maker. In finalizing the plan, a major challenge will be to achieve a common vision and full ownership of the process and outcome by the local users, policy makers, and regional and international stakeholders.

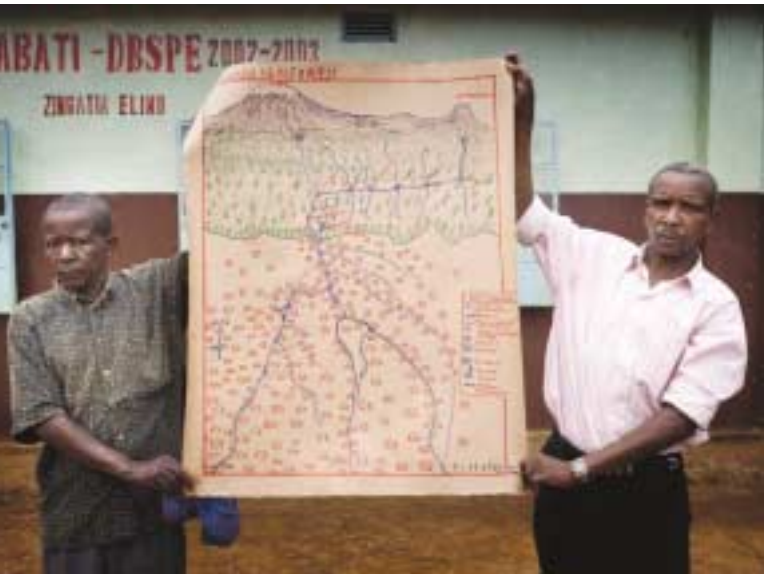
The Management Plan is expected to provide input into the overall management of the Okavango River Basin through the Permanent Okavango Commission (OKACOM), a tri-partite river basin commission comprising Angola, Namibia and Botswana.

Pangani River Basin

Resolving conflicts and joining forces

Every day more and more requests for new water permits from local, municipal and industrial users are received by the Pangani basin Water Officer. But every year, there is less and less water to be allocated as the river flow has now dropped to less than 40 m3/s. This is despite the rapid melting of glaciers on Mount Kilimanjaro that are predicted to disappear before 2025.

Due to the diminishing water supply, conflicts are emerging between water users, such as commercial farms, small farmers and livestock keepers. Downstream hydropower generation is seriously compromised by the low river flows. The water needs of the river itself and the downstream delta ecosystems are not yet officially recognised and are not considered when allocating water resources.



Villagers holding up a map of their catchment area.

Over the last years, IUCN has successfully supported the government of Tanzania and local partners in the Pangani river basin in solving local water conflicts. Based on these early results the Pangani basin partners are in the process of establishing 'Sub-catchment Forums' for water-user participation in water management and conflict resolution. The partners are further committed to address the issue of diminishing water supplies through supporting the development and implementation of adaptation strategies based on integrated water resource management (IWRM). A key component of this is the assessment of River Flows for People and Nature in the Pangani river basin.

Volta River Basin

Coordinating water use across boundaries

Crossing the Volta River between Ghana and Burkina Faso
© *Daniéle Perrot-Maitre/IUCN*

The Volta River Basin is the ninth largest basin in Sub-Saharan Africa and shared by six countries (Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali and Togo). The largest part of the river basin (85%) is shared between Burkina Faso and Ghana. It is one of the few major transboundary river basins in Africa with no formal institutional arrangements for coordinated management of its water resources. There is an urgent need to address this situation as further developments might lead to water-use conflicts.

The "Project for Improving Water Governance in the Volta River Basin", PAGEV, responds to this need for transboundary coordination and cooperation. The project partners are currently formulating a common set of management principles or "Code of Conduct" that will be shared by the two countries. In addition a series of pilot interventions are being implemented with local communities on both sides of the border to demonstrate transboundary cooperation in practice. Demonstration projects include the formation of local, national and transboundary river bank protection committees/forums. The activities of the Forum members will concentrate on the establishment of buffer zones and reforestation of river banks. In addition the project partners will work on the rehabilitation of a small reservoir at Sakom in Ghana to provide water for agriculture, livestock raising and household use. Finally the water agencies of Ghana and Burkina Faso will jointly monitor the quantity and quality of the water flowing into Ghana.

Lom Pangar dam

Assessment of infrastructure for sustainable development

Cameroon is faced with a dramatic shortage in electricity and is considering the construction of the Lom Pangar dam in the Sanaga river basin. The proposed reservoir will have a storage capacity ranging between 5 and 7.5 billion m3 and cover a surface of 610km². The hydropower facility is planned to have a capacity of 56MW.

During the planning process of this project, an Environmental Impact Assessment (EIA) was carried out by ISL, Oréade-Breach and Sogreah. All parties involved requested an independent group of experts to be established to ensure a high quality EIA could be delivered. Following a request from the government of Cameroon (an IUCN member), IUCN facilitated the establishment of an EIA expert review team between August 2003 and October 2005. IUCN further supported the EIA process by ensuring transparency in communication was maintained to avoid misunderstandings between all stakeholders.

The village of Deng Deng will be the most affected by the construction of the dam. It is situated only 32 km from the future site. © *IUCN BRAO*

Projects: Europe

Obedska bara, the Sava floodplain in Serbia and Montenegro © *IUCN Regional Office for Europe*

Sava River Basin

Towards ecological networks for sustainable development

The Sava river is a largely unaltered natural river system which rises in Slovenia and flows through Croatia, Bosnia and Herzegovina and discharges into the Danube in Belgrade (Serbia). One of the main challenges for the management of the Sava River basin is to reconcile economic development with the conservation of biodiversity. Accurate information about river habitats, freshwater species and ecosystem services is needed to support sustainable development of the river basin.

In 2005, the Sava River Basin Commission was established with the task of creating an Integrated River Basin Management plan to meet the requirements of the European Union Water Framework Directive. IUCN members and partners supported this process and pledged further support to the sustainable development of the river.

IUCN is now working with its members, commissions and partners to establish mechanisms to assess and manage ecological networks along the Sava River. The work will focus on the identification and designation of ecological corridors, buffer zones and protected areas. The project partners will create a geographical information system (GIS) and train government and non-government staff in the implementation of the EU Birds and Habitats Directives. Additional resources are sought to establish the planned ecological corridors along the river.

NEWATER project

Knowledge and networks for adaptive water management

Water management can be very complex. Water managers constantly need to balance the needs of all stakeholders: ensure water quantity and quality, manage floods and droughts, and ensure ecosystem protection and economic development. All these needs are to be coordinated in a context of increasing uncertainty due to changing climates and altering hydrological regimes. A group of 37 European and international research and network organizations are tackling this challenge through the NEWATER project. They are working together to support a transition from current plan-and-control regimes of river basin management towards more adaptive regimes that incorporate IWRM concepts. Within the NEWATER project, seven river basins are being used as case studies: the Nile, Guadiana, Orange, Tisza, Rhine, Elbe and Amudarya river basins.

IUCN is working with its commissions and the project partners to develop a rapid appraisal approach for trends in basin development driving forces. It further focuses on the development of new methods for defining and managing the buffer and storage capacity of river basins. IUCN is also establishing networks of experts and practitioners to support application of new water management tools such as Flow, Value and Pay in selected river basins.

Village along the banks of the Tisza

Projects: Americas

School children washing their hands.

The Barra de Santiago – El Impossible (BASIM) Project

Working together to demonstrate good water governance

Lush green forests on the slopes of El Imposible (El Salvador) protect downstream areas from flash floods washing down the steep catchments. Downstream mangrove forests in the Barra de Santiago National Park provide fishing grounds and protect the coastal areas against the impacts of tropical storms.

These securities are rapidly dwindling. Expanding sugarcane plantations, seawater intrusion and pollution affect the mangroves and other parts of the river basin. As a consequence fisheries have declined sharply and income levels dropped significantly amongst fishermen. In the township of San Francisco Menéndez, nearly one-third of major illnesses are related to poor water quality and 70% of the area suffers from erosion.

Over the last four years, IUCN has worked with local communities and governmental organizations and facilitated a closer cooperation amongst these partners. Together they aim to demonstrate how to improve water governance and apply the ecosystem approach to water management. To date, IUCN and its partners have established river basin committees to manage water resources in the upper, middle and lower watershed. The project has also supported the development and enforcement of legally binding water allocation and management arrangements.

Quito Water Supply

Investing in Andean Water Towers for Cities and Farmers

Paramo ecosystems in Guayllabamba river basin (Ecuador) are a critical source of water for the 1.3 million inhabitants of Quito. Investing in maintaining these wetland ecosystems is essential for Quito's water security. High above the Santa River (Peru) tower the glaciers of the Huascaran (6,768m). They supply critical amounts of water to farmers and households. Global warming, however, is making the glaciers disappear day by day. In both cases, IUCN is working with its members and partners to develop an investment programme that will ensure these ecosystems will continue to provide water for future generations.

Working through a network of members and partners, IUCN in South America raises awareness on the role of ecosystems in water supply. This includes development of strategies for local communities, municipalities and the national government to adapt to the changing water regimes in the Andes. Mountain ecosystems form part of the infrastructure needed to provide the rich and the poor with safe and reliable water. It is only through a coordinated effort at local, provincial, national and regional levels that progress can be made towards water security in South America.

Stream in the Huascarán area © *Rocio Cordoba/IUCN MESO-AMERICA*

Tacaná Basin

Battling the storm – and restoring water supplies and ecosystems

Aftermath of Hurricane Stan

In the first days of October 2005, tropical storm Stan dropped torrential rains in Guatemala, El Salvador and southern Mexico. The resulting flooding and mudslides led to an estimated 2,000 deaths and damages up to US$ 2 billion. Roads, bridges, water supply systems, land-use systems and crops essential for the survival of the inhabitants and the local economies were destroyed.

Before Stan, IUCN already supported members and partners through more than 20 projects in aquaculture, solid waste management, organic agriculture, apiculture, forest nurseries, water quality, and watershed management. IUCN facilitated the strengthening of management skills and building consensus between government and stakeholders (domestic users of the water, industries, farmers, agro-industrial sector and others) on water management.

Within hours after Stan, IUCN field teams assisted with transportation, evacuation, and distribution of water and food. With the aid of the Groupe Eaux de Marseille (France) an assessment of the storm damage to the rural water supply was carried out in Guatemala. IUCN now continues to support the local communities affected by the storm and aims at mobilizing the necessary additional financial resources for the rehabilitation of the rural water supply system and for a risk management programme.

Projects: Middle East – North Africa

Dried up river bed in the Zarqa Basin, Jordan © *IUCN WESCANA*

West and Central Asia – North Africa

Linking networks to promote knowledge sharing and capacity

The West and Central Asia – North Africa (WESCANA) region faces the world's biggest water management challenges. Not only is the region amongst the driest in the world, the population growth and increasing water consumption put major pressures on the region's declining water resources. Collaborative action is urgently needed to address the water scarcity in the region.

IUCN is working closely with national and regional organizations to overcome the fragmentation of approaches and unit diverse sets of players. Working from its Regional Office in Jordan, it will enable IUCN members and partners operating in distinct networks to connect and seek common approaches to address the water management crisis.

The 'network of networks' strategy developed will enable the sharing of information and the development of a community of practice in innovative water management. Through this, IUCN aims to facilitate the establishment and enhancement of closer collaboration and feedback between academia, practitioners, the private sector and policy makers.

Zarqa River Basin

Working together to solve competing water uses

No more then a brown trickle flows through the lower part of the Zarqa River Basin (Jordan). The farmers in the 3,900km^2 river basin use the water for irrigating 8,400ha of crops. Citizens and industries release their waste waters into the river. As population growth is high in the Amman-Zarqa area and the demand for natural resources is growing, a strategic plan urgently needs to be put together. This plan can be used to manage the resources in a more sustainable manner and target investments accordingly.

Working with the Government of Jordan, IUCN is committed to supporting the processes already catalysed by the Jordanian Prime Minister. A range of intervention options have been identified. Working with the Ministry of Environment, IUCN has organized two national multi-stakeholder workshops and have planned further consultations to define common approaches and practical steps forward in building an integrated water management strategy. All stakeholders will be involved in building trust and commitment to move forward with actions and investments to balance needs, reduce pollution and bring the Zarqa back to life.

Projects: Asia

Freshly caught fish in Vietnam

Supporting stakeholders to exchange views and find common ground

IUCN in Asia supports dialogues at different scales – sub-national (local), national, and supra-national (regional, transboundary, international). Dialogues must include all stakeholders with rights, risks and responsibilities. They must allow different perspectives to be articulated and heard. And they must be arranged so as to ensure high-quality participation and learning. With this perspective, IUCN and partners are supporting a Nepal Dams and Development Dialogue in which many stakeholders have unpacked the 2000 report of the World Commission on Dams (WCD) to see what it has to offer Nepal. The report recommendations have been compared with the existing institutional framework and practice of Nepal. The next phase has concentrated on finding ways to implement the WCD strategic priorities.

In and around Baloxai village in Balochistan Province, Pakistan, IUCN, in collaboration with the government and local communities, is addressing groundwater depletion. IUCN is helping local people to engage in a dialogue to develop technical solutions for improved integrated approaches to water management. Two of the main contributions of the project have been the introduction of sand filters to improve access to clean water and assistance with community fish culture for income generation.

Establishing a fair and balanced river flow regime

Implementing environmental flows requires establishing water flow regimes which recognise ecosystem needs whilst trying to also satisfy social and economic demands. Environmental flows work requires the integration of a range of disciplines, including engineering, law, ecology, economy, hydrology, political science and communication.

The Cambodian people are heavily dependent on the productivity of the Tonle Sap Great Lake wild fishery which is threatened by over-fishing, and ecological disruption to the natural 'pulse' system caused by water infrastructure development and changes to the wet and dry season flow regimes. IUCN and partners are involved in an environmental flows process with legal, economic, social and transboundary dimensions in the Mekong River Basin. The Huong River Basin is a classic case of competing uses for water, competing views about whether an event is a disaster or a natural occurrence, and a range of views about what should be done. In short, it is just the kind of situation where an environmental flows approach needs to be able to contribute for the approach to become recognised as useful. Catalysed by major floods in 1999, IUCN is working with other organizations to refine and implement an appropriate methodology for environmental flows work in Viet Nam.

Establishing environmental flows in Bangladesh has resulted in agricultural water management taking into consideration the needs of fish. In Cox's Bazaar rubber dams are inflated from December to January to store river water for dry season irrigation. Bringing in fish values and ecology is now informing a dialogue between different water users. IUCN supports the research and subsequent negotiations.

Linking specialists and practitioners through regional networks

Through the Water and Nature Initiative (WANI), IUCN in Asia is seeking to contribute to sustainable regional development. Social, cultural, economic, ecological, and the transboundary dimensions are all aspects of sustainable regional development

The Mekong Region comprises the five countries of Cambodia, Lao PDR, Myanmar, Thailand and Viet Nam – plus China's Yunnan province. The territorial area is 2.3 million km^2 which is home to a rapidly growing population of about 260 million people. In this region, IUCN is supporting many partners to examine different development scenarios and input to political debates via fora such as the Asian Development Bank's Greater Mekong Subregion Initiative and infrastructure programmes.

IUCN's work in the Himalayan Region started in 2006, and aims to mainstream the approaches to ecosystems and sustainable livelihoods via work featuring transboundary learning, sharing and demonstration. Partners from Pakistan, India, Nepal, Bangladesh, China and Bhutan are engaging in this collaborative, regional effort.

A new bridge across a river linking two regions in Shyok valley, Pakistan © *Jim Thorsell/IUCN*