Water Vision to Action

Catalyzing Change through the IUCN Water & Nature Initiative

Results Report

INTERNATIONAL UNION FOR CONSERVATION OF NATURE

Water & Nature Initiative

Buitenlandse Zaken
Ontwikkelings samenwerking

Published by: IUCN, Gland, Switzerland

Citation: Smith, M., and Cartin M. (2011). *Water Vision to Action: Catalysing Change through the IUCN Water and Nature Initiative*. Gland, Switzerland: IUCN. viii plus 55pp.

ISBN: 978-2-8317-1395-3

Cover photo: © Melanie Kandelaars

Layout by: L'IV Com Sàrl, Le Mont-sur-Lausanne, Switzerland

Printed by: UNI Global Union, Nyon, Switzerland

Available from: IUCN
(International Union for Conservation of Nature)
Publications Services
Rue Mauverney 28
1196 Gland
Switzerland
Tel +41 22 999 0000
Fax +41 22 999 0020
books@iucn.org
www.iucn.org/publications

A catalogue of IUCN publications is also available.

The text of this book is printed on paper made from wood fibre from well-managed forests certified in accordance with the rules of the Forest Stewardship Council (FSC).

Water Vision to Action

Catalyzing Change through the IUCN Water & Nature Initiative

Results Report

Contents

Acknowledgements

The Water and Nature Initiative (WANI) would not have become reality had it not been for the generous support and funding from the Government of the Netherlands (DGIS), both through DGIS in the Hague and through their Embassies in Asia and Mesoamerica. This funding was the catalyst that leveraged the generous co-finance from a range of donors, large and small, governmental and non-governmental (Annex 1). The generous contributions across the portfolio from the United Nations Development Programme (UNDP), the European Commission (EC) and the Swedish International Development Cooperation Agency (Sida) contributed significantly to the funding success of the Initiative. Other major contributions were received from the UK Department for International Development (DFID), Global Environment Facility (GEF), Ministry of Foreign Affairs of Finland, Canadian International Development Agency (CIDA) and the International Secretariat for the Dialogue on Water and Climate (IHE). Funding was contributed in a variety of ways by a range of other donors both directly and indirectly that helped make the Initiative a success.

The Initiative owes its success over the years to the dedication of the WANI Coordination Team and in particular the Regional Coordinators and project field staff, without whose knowledge, expertise and indefatigable energy, nothing would have been accomplished. The WANI Advisory Committee provided much needed and valued independent advice and knowledge. The regional teams were ably supported by the regional senior management who ensured that the necessary capacity to implement the portfolio was provided.

At IUCN Headquarters, IUCN's senior management team enabled the Initiative to take shape and to grow into the dynamic global programme that it has become. The Thematic Heads provided insightful input into the development of the Initiative and also greatly contributed to the cross-cutting component themes of the portfolio. The IUCN support units (such as finance, administration and human resources) all played a vital role in supporting WANI, and their contribution and collaboration are much appreciated.

The WANI Coordination Team finally thanks Dr Ger Bergkamp, the architect of the Initiative and its Coordinator over most of its duration, for his untiring leadership, vision and commitment to learning and to innovation.

Acronyms and Abbreviations

ADB	Asian Development Bank
BASIM	Barra de Santiago-El Imposible Hydrological Complex
COCODES	Consejo Comunitarios de Desarrollo (Community Development Council, Guatemala)
CONAGUA	Comisión Nacional del Agua (National Water Commission, Mexico)
CORNASAM	Coordinadora Inter-institucional de Recursos Naturales y Ambiente de San Marcos (Inter-Institutional Coordinating Body for Natural Resources and the Environment of San Marcos, Guatemala)
DRC	Democratic Republic of Congo
ECOWAS	Economic Community of West African States
EFA	Environmental Flows Assessment
GWP	Global Water Partnership
ICIMOD	International Centre for Integrated Mountain Development
IW:LEARN	International Waters Learning Exchange and Resource Network
IWMI	International Water Management Institute
IWRM	Integrated Water Resources Management
JEM	Jóvenes en la Misión (Youth on a mission) cooperative enterprise
JTC-IWRM	Joint Technical Committee
LTA	Lake Tanganyika Authority
MARN	Ministerio de Medio Ambiente y Recursos Naturales (Ministry of Environment and Natural Resources, El Salvador)
MDG	Millennium Development Goal
MESCOAGUA	Mesa Coordinadora de Agua (Coordinating Panel of Water Administrators of Southern Ahuachapán, El Salvador)
MRC	Mekong River Commission
MSP	Multi-Stakeholder Platform
NGO	Non-Governmental Organization
ODMP	Okavango Delta Management Programme
OKACOM	Permanent Okavango Basin River Water Commission
OMVS	Organisation pour la Mise en Valeur du fleuve Sénégal (Senegal River Basin Development Authority)
PBWO	Pangani Basin Water Office
RIO-C-MAS	Red de Integración de Organizaciones Costero Marinos Ahuachapán Sonsonate (Integrated Network of Ahuachapán and Sonsonate Marine Coastal Organizations)
SADC	Southern African Development Community
TERI	The Energy and Resources Institute
TNC	The Nature Conservancy
UNEP/GEF	United Nations Environment Programme/Global Environment Facility
UNESCO FEWSNET	Famine Early Warning System Network
VBA	Volta Basin Authority
WANI	Water and Nature Initiative
WCD	World Commission on Dams
WUA	Water User Association
WWF	Worldwide Fund for Nature

Executive Summary

In 2000, the *World Water Vision*, based on recognition that water is the basis for all living ecosystems, envisioned a world in which adequate water is provided to meet basic human needs in an equitable manner and in harmony with nature. In the same year, IUCN published the *Water and Nature – Vision and Framework for Action*. The message was very clear: to achieve a sustainable society that cares for its resources, we must establish a fundamentally new paradigm for the use, development and conservation of water resources. With global consensus on the Millennium Development Goals (MDGs), transformation to sustainability must be embedded in development and universal goals for reducing poverty. The key element of the new paradigm advocated in the *Water and Nature Vision* was identified as implementing Integrated Water Resource Management (IWRM) using an ecosystem approach within river basins.

The Water and Nature Initiative (WANI) was IUCN's response to the global agenda on water and development in 2000 and the call to move from vision to action. The main goal was:

"Mainstreaming of an ecosystem approach into catchment policies, planning and management"

WANI was structured around six strategic objectives:

1. To **demonstrate** ecosystem management in river basins
2. To support wise **governance of water** resources and wetlands
3. To develop and apply **economic tools and incentive** measures
4. To **empower people** to participate in sustainable water management
5. To **improve knowledge** to support decision making
6. To **learn lessons to raise awareness** on wise water use

As the initiative developed into a second phase, these six objectives were repackaged into four, maintaining the underlying logic and themes of WANI. Beginning in 2009, ecosystem services and water security, good governance and stakeholder participation, economic development and sustainable financing and leadership and learning continued to be the bases for an integrated approach to implementing IWRM.

Under the 'demonstration logic' of WANI, demonstration sites were set up to contribute directly to the implementation of IWRM at river basin and national levels using a process of 'learning-by-doing'. Demonstration projects were not limited to testing of IWRM implementation, but were also a focus for the learning, partnerships and empowerment needed to catalyze change. Demonstrations were strengthened by the value of IUCN as a network, bridging members and partners in governments, NGOs and local community organizations to influence policy change.

It was recognized from the outset that the budget for WANI was small relative to the many billions invested annually in water management. The underlying intent of WANI was to use innovative and well-targeted activities to guide future investments and, most importantly, to be a catalyst for wider change needed to make the future of water and development sustainable.

Embedding change and future sustainability

The first phase (WANI-1) of the Initiative ran from 2001 to 2008. A second phase (WANI-2) is under implementation, running from 2009 to 2013. WANI-2 focuses on building upon the results and outcomes from the previous years, with emphasis on scaling up and embedding change. The goal is to encourage sustainability and on-going, independent approaches that will maintain the momentum generated by WANI and thus ensuring that the ecosystem approach and IWRM are embedded in water policies and basin planning.

WANI implementation

Coordination and management of WANI was a streamlined, decentralized process that worked through small teams operating at the project, regional and global levels. This allowed a decentralized structure to work efficiently and also allowed a flexible and adaptive approach to management and problem solving. IUCN was required to seek co-financing partners for the Initiative. This was an on-going process throughout the lifetime of WANI-1 and all regions successfully leveraged financing from a diverse range of donors and partners. Successful leveraging has continued into WANI-2, which is a important contributor to the sustainability of the results and outcomes of the work on the ground.

Project portfolio

WANI was implemented through an initial portfolio of more than 25 individual projects. These were aligned to the strategic objectives of the Initiative and organized under the WANI Components. The portfolio comprised two broad types of projects:

Demonstration: Demonstration projects were initially located in river basins in Latin America, Africa and Asia. In the second phase, projects were initially implemented in the Middle East and the Pacific.

Learning and cross-cutting support: This type of project was designed to support demonstrations, through information and assessment, dialogues and analytical reviews of policy, law and institutions. These projects were instrumental in supporting learning with key national and regional constituencies and, critically, in positioning the demonstrations to influence discourse, consensus building and policy formulation at national to global levels.

As the portfolio has developed in the second phase, projects have either been scaled up or new projects have developed as a result of outcomes and successes from the initial demonstrations or supporting projects.

Outputs and outcomes achieved

Implementation of IWRM

WANI-1 tested implementation of IWRM using an ecosystem approach in 12 river basins globally (Box 1). Results achieved encompassed:

1. **New national policies on water resources management** developed or implemented in six countries with support from WANI.
2. **Multi-stakeholder platforms empowered to reform governance** of river basin management in seven national and international basins.
3. Basin-level water management fora or basin organizations are accountable to **new community-level institutions** in 11 demonstration sites in 30 countries.
4. New **partnerships for sustainable development** of water resources bridge old divides between environment, economy and poverty reduction in nine basins.
5. New international treaties signed or new **institutions for transboundary cooperation** established in nine basins with WANI support.
6. New **income-generating activities for poor people** in six demonstration basins result from combining water resources management with enterprise development.
7. Poor people obtain **new assets for sustainable livelihoods to reduce poverty** in communities in 11 countries.
8. Poor people are **less vulnerable to climate risks and disaster** because of environmental flows and restoration of ecosystem services in five basins.
9. **Toolkits drive innovation and scaling-up** of successful water resources management that integrates ecosystem services, economics, incentives, governance reform and empowerment.
10. Major **new financing commitments** by national governments mobilize action on restoration and sustainable management in at least three countries.

In the second phase of the initiative, twelve new basins or catchments were added, including basins in South America, Middle East and the Pacific (Box 2).

Box 1. WANI-1 demonstration river basins

- Barra de Santiago-El Imposible hydrological complex (El Salvador)
- Tacaná Watersheds (Guatemala, Mexico)
- Senegal River Basin (Senegal, Mauritania, Mali, Guinea)
- Volta River Basin (Ghana, Burkina Faso)
- Komadugu Yobe River Basin (Nigeria, Niger)
- Pangani River Basin (Tanzania)
- Lake Tanganyika Basin (Tanzania, Zambia, Democratic Republic of Congo (DRC), Burundi)
- Limpopo River Basin (South Africa, Zimbabwe, Botswana, Mozambique)
- Okavango Delta (Botswana)
- Himal-Hindu Kush Watersheds (Pakistan, India, Bangladesh, Nepal, China)
- Mekong River Basin (Thailand, Cambodia, Lao PDR, Viet Nam)
- Huong River Basin (Viet Nam)

Box 2. WANI-2 demonstration river basins

- Santa River Basin (Peru)
- Huasco River Basin (Chile)
- Wami Ruvu River Basin (Tanzania)
- Balkhila Watershed (India)
- Saro Valley (Pakistan)
- Marj Sanour Basin (Palestine)
- Azraq Oasis (Jordan)
- Nile Valley (Egypt)
- Nadi River Basin (Fiji)
- Kadavu Island Watersheds (Fiji)
- Togitogiga Catchment (Samoa)
- Tana River Basin and Upper Nile (Kenya and Uganda)

Communications, learning and leadership

Communications and learning have been integral to WANI. Communications promoted key messages from WANI regionally and globally to support national agendas on water, influence policy and promote learning. WANI's learning strategy has combined social learning and more formal training processes, incorporating exchange of experience, story-telling and learning-by-doing, as well as workshops for capacity building. This has continued as the portfolio and Initiative developed. The emphasis is now on communicating WANI successes. This is in conjunction with the development of an enduring knowledge management approach that can effectively document and synthesize the outcomes. Developing leadership capacity and networks to embed change at national and regional policy levels is a focus of the second phase.

A key component of the WANI learning strategy was the WANI Toolkit series (Box 3), developed to support learning on how to mainstream an ecosystem approach in water resource management. Aimed at practitioners, policy makers and students from NGOs, governments and academia, the series built on practical case studies to show how key principles of sustainable water management are implemented in river basins. Translations of many of the WANI toolkits were completed to increase access and uptake, and as a means of building national-level ownership of new concepts in water resources management. *FLOW* has been translated into 11 languages worldwide. *VALUE* is available in English, Spanish, French and Chinese and *PAY* is available in English, Spanish and Arabic. *SHARE* has been translated into Russian and there are plans for an Arabic edition. *RULE* and *NEGOTIATE* will also be available in the future in Spanish, Khmer, Thai and Vietnamese. *SPRING*, a toolkit on managing groundwater, is the latest in the series and under development.

Box 3. The WANI Toolkit series

CHANGE – Adaptation of water resources management to climate change
FLOW – The essentials of environmental flows
VALUE – Counting ecosystems as water infrastructure
PAY – Establishing payments for watershed services
SHARE – Managing water across boundaries
RULE – Reforming water resource governance
NEGOTIATE – Reaching agreements over water
SPRING – Managing groundwater resources (under development)

Impact pathways

Review of project results, lessons learned and experiences from project management, reveals a set of common features that are associated with the most successful WANI demonstrations:

- **New access to information** – to build a common understanding of problems faced.
- **Social learning** – learning through sharing experiences, networking and training.
- **Short-term tangible benefits** – to build trust and willingness to invest time and resources in projects.
- **New coalitions** – to strengthen innovation and create momentum around change.
- **Decentralization of decision making** – to ensure that change in water management addresses local priorities.
- **Institutional development** – to develop national capacities for IWRM.
- **Policy linkages** – through demonstrating practical approaches to IWRM that link policy to action on the ground, by explicitly positioning projects relative to key policy processes at national and regional levels.
- **Governance coordination across scales** – to enable coordination of governance arrangements and encourage accountability at higher levels.
- **Leadership** – to develop champions of change who promote and communicate projects from local to basin to national and international levels.
- **Leveraging** – to deliver large-scale impact, through influencing the policies and investments of partner and donor agencies.

These factors have been key in delivering results from projects and thus in enabling implementation of IWRM in practice in real-world systems facing real-world problems and constraints. However, the ambition of WANI is to guide future investments and, most importantly, to be a catalyst for wider change needed to make the future of water and development sustainable. WANI therefore seeks impacts on larger scales and over longer time periods and needs to be aligned to 'impact pathways' that will scale up results to impacts. These are shaped by four strategies for scaling-up, based on combinations of consensus building, dialogue, joint action and policy framing. WANI projects have incorporated alignment with these impact-shaping strategies and in the second phase of mainstreaming the ecosystem approach to IWRM, emphasis in their application has shifted to the national and regional levels.

Programme and policy guidance

Learning-by-doing

Experience from WANI has shown that change and innovation in water resources management are strengthened by using a 'learning-by-doing' approach. This does not wait for a perfect plan or comprehensive information, but starts with the information available and the priority actions agreed by stakeholders in developing a shared vision. Through implementation in practice, lessons are learned and understanding grows among diverse stakeholders, enabling project partners and participating stakeholders to gain trust in each other and in what they are doing. Tangible results, communication and leadership strengthen

the process. Without doubt, demonstration projects also have to be adaptive, and they need time. WANI found that it is through the resulting learning and empowerment that willingness and capacity to take on the complex mix of actions needed to achieve real change in water systems develops.

The process of demonstration and learning-by-doing is critical to successful use of the ecosystem approach. It is what makes an apparently complex task – of combining maintenance of ecosystem services, increasing equity, adaptive management and decentralization – manageable in practice. And it is by successfully combining these elements that the ecosystem approach leads to outcomes for development priorities including more sustainable and equitable access to water, new economic opportunities, reduced vulnerability of poor people and good governance.

Millennium Development Goals (MDGs)

It is often said that water cuts across the MDGs, reflecting the fundamental role of water in all facets of life and the economy. Equitable and sustainable water resources management and development underpin improvement in sustainable access to safe drinking water (MDG 7), but can also contribute to, for example, income generation and food security (MDG 1), access to schooling for girls (MDG 2) by reducing the burden of fetching water, and reducing child mortality by cutting water-borne disease (MDG 4). The critical challenge is therefore to achieve water management that supports progress across these issues while addressing underlying constraints on development.

The cross-cutting influence of water means that water can be a catalyst for development. Water policy and investment in water resource management should therefore aim to achieve broad-based benefits for development. For this reason, IWRM has been a cornerstone of development since adoption of the 1992 Dublin Principles. Conventional approaches to IWRM have placed heavy emphasis on planning, with much more limited progress on implementation. Experience from WANI has demonstrated that an ecosystem-based approach gives priority to IWRM implementation. In addition, the ecosystem approach succeeds in creating social, economic and environmental benefits from water resources management needed to support progress on the MDGs.

Building such development benefits through WANI demonstrations is a practical embodiment of the Water and Nature Vision and its call for strengthening environmental, social and economic security through sustainable management of water resources.

Key policy messages

The benefits and the experience and results from WANI are the basis for a set of key policy messages from WANI that:

- **prioritize implementation of IWRM by using ecosystem-based approaches that are built on demonstrations designed to catalyze change;**
- **build water governance capacity to catalyze equitable and sustainable development;**
- **invest in learning, leadership and information to empower coherent and coordinated action, innovation and change;**
- **build water security by maintaining and restoring river health;**
- **account for the costs and benefits of river basin ecosystems and their services as natural infrastructure for water resource development;**
- **prioritize implementation of ecosystem-based water management to build climate resilience;**
- **build country-wide water management by using demonstration of results to reframe national debates on water and support development of institutions fit for adaptive management.**

These should guide national approaches to IWRM implementation. They should reinforce donor policies relating to water, particularly to guide frameworks for programmatic investment and priorities for budget support that will promote change in water resource management and good governance while integrating action on environment, climate change adaptation, poverty reduction and economic development.

1. Introduction: From Vision to Action to Change

1.1 Water and Development at the Millennium

In 2000, a series of reports, statements and global frameworks were agreed and published laying out an agenda for water and development at the turn of the millennium. The ***Ministerial Declaration of The Hague***, marking the 2nd World Water Forum, emphasized the need to guarantee safe water for every person at affordable prices and protect the vulnerable from water-related hazards, while stressing the need to protect and improve freshwater, coastal and related ecosystems. The *World Water Vision*, based on recognition that water is the basis for all living ecosystems, envisioned a world in which adequate water is provided to meet basic human needs in an equitable manner and in harmony with nature. The *Framework for Action* of the Global Water Partnership (GWP) called for mobilization of political will around adoption of integrated water resources management (IWRM) to tackle the most urgent water priorities. Taken together, and alongside the Report of the World Commission on Dams, published in the same year, these demonstrated a clear commitment to an agenda for water and development built on the need to protect and manage freshwater and related ecosystems sustainably.

IUCN published the *Water and Nature – Vision and Framework for Action* as the environmental component of the World Water Vision. Based on wide consultation over the preceding two years with organizations ranging from grass-roots, community-based organizations to international agencies, the *Water and Nature Vision* (Box 4) put nature at the centre of the emerging global agenda on water and development. Its message was very clear:

> *"To achieve a sustainable society that cares for its resources, we must establish a fundamentally new paradigm for the use, development and conservation of water resources"*

Waterhole, Tanzania. © IUCN/Taco Anema

Box 4: The Water and Nature Vision

A World Strategy for Conservation and Sustainable Management of Water Resources in the 21st Century

The Water and Nature Vision describes a world in which the benefits of freshwater and related ecosystems to humankind are optimized, while the intrinsic values of these systems are respected and preserved. In this world, the mutual dependence of people and ecosystems is accepted, and loss of ecosystem functions and biodiversity is more than compensated through restoration.

This Vision describes a world in which ENVIRONMENTAL SECURITY is guaranteed because everyone values and accepts personal responsibility for the conservation and wise use of freshwater and related ecosystems. The maintenance of environmental security is based on integrated management of all land and water use through an ecosystem approach within river and drainage basins, including their associated marine and coastal zones.

It is also a world in which SOCIAL SECURITY is strengthened by providing everyone with equitable access to and responsibility for safe and sufficient water resources to meet their needs and rights, by means that maintain the integrity of freshwater and related ecosystems.

Finally, it is a world where ecosystems are managed and used in a fair and equitable manner for ECONOMIC SECURITY. Efforts are made to rectify and reverse existing trends in demographics, consumption patterns and human-nature relationships, in order to ensure that the current and future demands for water resources are realistically achievable without compromising the ecological, biological and hydrological basis and integrity of freshwater and related ecosystems.

1.2 The Water and Nature Initiative: goals and strategy

With global consensus on the Millennium Development Goals (MDGs), transformation to sustainability must be embedded in development and universal goals for reducing poverty. The key element of the new paradigm advocated in the *Water and Nature Vision* was identified as implementing IWRM using an ecosystem approach (Box 5) within river basins.

Box 5: The ecosystem approach

The "ecosystem approach" is a strategy for integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Meeting people's needs is a central element of the ecosystem approach that aims to:

- maintain ecosystem functions and services;
- enhance equitable sharing of benefits;
- promote adaptive management strategies;
- implement management actions through decentralization;
- foster intersectoral/interdisciplinary cooperation.

The Water and Nature Initiative (WANI) was IUCN's response to the global agenda on water and development in 2000 and the call to move from vision to action. WANI's main goal was:

> *"Mainstreaming of an ecosystem approach into catchment policies, planning and management"*

WANI was structured around six Strategic Objectives:

Component 1 – Demonstrating conservation and ecosystem management in river basins: to demonstrate ecosystem management in river basins

Component 2 – Governance, policies and planning: to support wise governance of water resources and wetlands

Component 3 – Economics and finance: to develop and apply economic tools and incentive measures

Component 4 – Equity and empowerment: to empower people to participate in sustainable water management

Component 5 – Knowledge and information: to improve knowledge to support decision making

Component 6 – Communications, coordination and learning: to learn lessons to raise awareness on wise water use

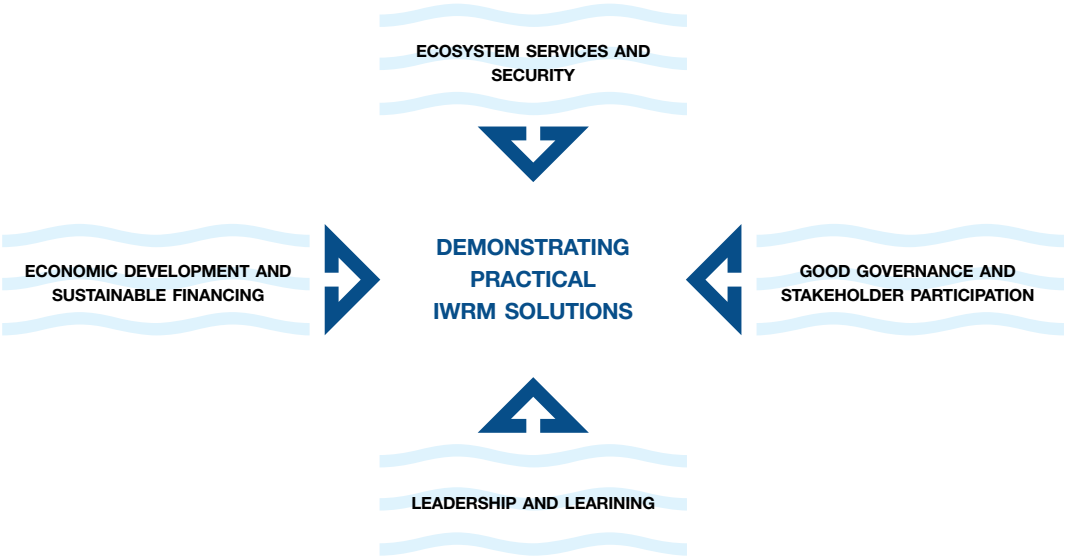
Demonstration logic

Each Strategic Objective was the focus of one of six components of WANI (later repackaged to four in the second phase). These components together formed a coherent strategy with a 'demonstration logic' at its heart. Under Objective 1, at the centre, demonstration sites were developed where integrated management of land and water resources was combined with the required institutional, legal and economic frameworks. Objectives 2–5 were designed to support the demonstration projects and to develop 'stand-alone' outputs that could be applied more widely. These components focused on supporting processes to empower people, establish wise governance and economically sound management, and make knowledge and information widely available.

Under the demonstration logic of WANI, demonstration sites were set up to contribute directly to the implementation of IWRM at river basin and national levels using a process of 'learning-by-doing'. Demonstration projects were not limited to testing of IWRM implementation, but were also a focus for the learning, partnerships and empowerment needed to catalyze change (Figure 1).

It was recognized from the outset that the budget for WANI was small relative to the many billions invested annually in water management by the private sector, governments and aid agencies. The underlying intent of WANI was never, therefore, to prescribe individual solutions for water resources management. Rather, it aimed to use innovative and well targeted activities to guide future investments

Figure 1. Components for demonstrating practical IWRM solutions



and, most importantly, to be a catalyst for the wider change needed to make the future of water and development sustainable.

Theory of change

The WANI Strategy as it was originally envisaged used a theory of change with five principles. These were used in the selection, development and implementation of WANI projects to ensure they were oriented to creating change, through being:

- **participatory** – to build the capacity and willingness of people and institutions to work in cooperative and integrated ways on water resources planning and management, including by empowering local groups and especially women;
- **strategic** – by using successful demonstrations of the cost-effectiveness of the ecosystem approach to build partnerships within and across sectors;
- **transparent** – to ensure that the portfolio of WANI projects was selected using clear criteria that maximized the opportunities to deliver results;
- **catalytic** – by using WANI activities to support development of an enabling environment for the ecosystem approach and to influence the actions and investments of other stakeholders;
- **learning-based** – by incorporating structured learning with stakeholders into WANI projects and coordination.

From the launch of the Initiative, progress and results were monitored and lessons learned were used to update the application of the Strategy and its underlying principles. The Water and Nature Initiative thus evolved over time as results, learning and partnerships opened the pathways needed to achieve impacts.

1.3 Key questions

The Water and Nature Initiative was launched in 2001 with an original finish date of 2006. There was a subsequent two-year extension and a second phase began in 2009 with an end date of 2013 planned. Beginning with a review of the goals of the Initiative and coordination of implementation, the report provides an overview of the results achieved to date. A synthesis of these results is the basis for analysis of three key questions:

- **What has been learned?**
- **What has changed based on the outcomes achieved?**
- **What strategy and action is needed now to consolidate change and promote wider impacts?**

These questions enable assessment of which interventions within the WANI portfolio of projects contribute most to improving planning, management and policies for water resources and river basin development. Analysis of these interventions has identified factors that are critical in their success and should thus be the basis for strategies for scaling up results from WANI to achieve mainstreaming in practice and policy at national and regional levels.

1.4 WANI implementation

Coordination and management of WANI was a streamlined, decentralized process that worked through small teams operating at the project, regional and global levels. This allowed a decentralized structure to work efficiently and also allowed a flexible and adaptive approach to management and problem solving without the weight of a heavy bureaucracy. Consultation with stakeholders and partners was also a key

element as WANI was designed to complement and integrate rather than as a series of 'stand-alone' projects.

IUCN was required to seek co-financing partners for the Water and Nature Initiative. This was an on-going process throughout the lifetime of the WANI and continues under the second phase. Co-financing was challenging but ultimately a vital element of the WANI model, as it focused collaboration and coordination of investment needed for catalyzing change. It was the successful realization of co-investment into WANI that allowed projects to grow and evolve, and achieve sustainability beyond WANI core funding.

1.5 Project portfolio (2001–2013)

Phase 1 (WANI-1)

WANI-1 (2001–2008) was implemented through a portfolio of more than 25 individual projects. These were aligned to the Strategic Objectives of the Initiative listed in Section 1.2 and organized under the six WANI Components.

Phase 2 (WANI-2)

The second phase of the Initiative began in 2009 and is envisaged to continue until 2013. It has built on the foundations of the first phase with some projects scaled up into a second phase, whilst other projects have been developed to support application of WANI results in emerging processes of national and regional change and strategy setting. Several completely new projects have been initiated, in total in 2011, there were 32 active projects, which are all linked to the WANI Strategic Objectives.

The WANI portfolio comprises two broad types of projects:

Demonstration projects located in river basins in Latin America, Africa and Asia, Middle East and the Pacific (Map 1). In each demonstration, aspects of integrated land and water management were tested and implemented, according to local, national or regional priorities set in consultation with project partners.

Support projects provide support to the demonstration projects, through information and assessment, dialogues and analytical reviews of policy, law and institutions. These projects have been instrumental in supporting learning with key national and regional constituencies and, critically, in positioning the demonstrations to influence discourse, consensus building and policy formulation at national to global levels. An important output of these projects was the WANI toolkit series (Section 7.3).

1.6 Results and outcomes achieved

The critical challenge for the second phase of the Initiative was to take the next step and to use these strategies at national and regional levels to create long-term impacts. In doing so, it was necessary to make use of the lessons and best practices identified in the first phase of WANI whilst learning from its inherent weaknesses. The second phase, of mainstreaming the ecosystem approach in IWRM, is focused on the need to explicitly incorporate national and regional application of the four scaling strategies into projects (Section 10.2), using them in combinations according to context, needs and opportunities. The portfolio now comprises a set of outcomes achieved as a result of interventions in the first years of WANI and an emerging set of results as the second phase of the Initiative is implemented.

Outputs and outcomes achieved in WANI-1 and the emerging results from implementation of WANI-2 are reviewed in sections 2 – 7 and are summarized in Map 1. The first phase of the Initiative was successful in leveraging investment in projects and influenced the outcomes, platforms and dialogue processes developed during implementation. An enduring facet of WANI has additionally been to use actions on the ground to making positive and hopefully long-lasting change in the lives of ordinary people. This perspective is outlined in the 'Real Lives' stories from across the portfolio.

2. Demonstrating Sustainable Water Resource Management

WANI aimed to develop a series of project demonstration sites that would apply ecosystem management in river basins. This approach focused on addressing the need for sustainable livelihoods for local people within catchments, whilst also striving to achieve sustainable use of basin resources. Building social, economic and environmental security were integral to this objective.

2.1 Demonstrating results – Asia

2.1.1 Huong River Basin (Viet Nam) and Songkhram River Basin (Thailand)

Environmental flow assessment in the Huong River Basin

The concept of environmental flows has been integral to implementing the Water and Nature Initiative and demonstrating the ecosystem approach to water management. Environmental flows is a method for allocating water in rivers among uses within the limits of availability. Environmental flows aims to protect downstream ecosystems, and the ecosystem services they provide to people, in rivers that are regulated by dams or abstraction. WANI demonstrated and promoted environmental flows with the aim of reducing the environmental impacts and increasing the benefits of river basin development, especially that of hydropower and irrigation. IUCN coordinated a rapid environmental flow assessment in the Huong River Basin in Viet Nam, in 2004 and 2005. This brought together public officials, engineers and scientists in an action research process to build awareness and capacity in environmental flows in Viet Nam. Broad interest in the concept emerged, setting off a process of learning and scaling up at national and regional levels.

Riverside village, Viet Nam. © IUCN/Taco Anema

Incorporating environmental flows into planning and management

The Huong Basin demonstration has led local, provincial and national authorities, together with local NGOs, to incorporate environmental flows into planning and management of river basin development in Viet Nam. The Provincial People's Committee of Thua Thien Hue province adopted environmental flows into planning and management of the Huong Basin and its Tam Giang-Cau Hai lagoon. At the national level, the Department of Water Resources Management and Ministry of Natural Resources and Environment included environmental flows in the "Towards the Year 2020" National Water Resources Strategy, published in 2006. As a result, the government initiated application of environmental flows in other river basins, including the Nhue-Day, Cau, and Vu Gia-Thu Bon. Through its engagement with authorities in Viet Nam, WANI was also active in supporting dialogue and capacity building on IWRM. This included strengthening of the multi-stakeholder Viet Nam Water Partnership and support for convening dialogues in the country on water resources development. Through these activities, WANI also supported the provincial government of Thua Thien Hue in identifying reforms needed to enable creation of a Huong River Basin Organization to coordinate integrated management of the basin (***see Real Lives 1***).

Experience scaled out to the Songkhram River Basin in Thailand

Experience gained in the Huong led to a second environmental flows demonstration in the Songkhram Basin in Thailand, a tributary of the Mekong. With the involvement of government and NGOs, regional actors, academics and community groups, results demonstrated the importance of flood regimes for the high productivity of the floodplain and rich fisheries that support the livelihoods of 1.9 million people in the basin. Increased awareness and broad participation led to the convening of a basin dialogue that called for joint planning and management of water resources development by the four provinces in the basin.

Asian Environmental Flow Network

The rapid environmental flow assessment, completed in the Huong Basin, provoked broad interest in environmental flows and created a solid platform for replication and scaling-up at national and regional levels. As part of WANI-2, these concepts are being updated through the development of an Asian Environmental Flow network. This will focus on re-engaging with existing and new knowledge and building a greater understanding among key regional stakeholders on how to apply environmental flows in policy and practice.

Box 6: Environmental flows awareness raising and capacity building in Asia

Environmental flows demonstrations in Viet Nam and Thailand were the basis for region-wide awareness raising and capacity building. This focused on promotion and application of the WANI toolkit *FLOW* and included translation of the toolkit into six regional languages: Vietnamese, Chinese, Thai, Khmer, Lao and Burmese. Translations were led by inter-disciplinary working groups in each case, ensuring translation of the concepts rather than just the words, and successfully building national-level ownership of the idea and a constituency advocating and promoting application in each country. In the case of China, where translation was a collaborative venture between the Ministry of Water Resources and Yellow River Conservancy Commission, this led to pilot activities in the Yellow River and to commitment by the Chinese government to develop further applications of environmental flows in policy.

Real lives 1

Fisherman Punphanom Ekapan surveying his fish pens, Songkhram River, Thailand. © IUCN/Wayne Arnold

Environmental Flows in Viet Nam and Thailand

Fisherman Tran Van Hua sat in his sampan on the great lagoon at the mouth of Viet Nam's Huong River, praying for fish. "The catches keep getting smaller," he said ruefully. "There are fewer fish, shrimp and crabs. We don't know why." Nearby, fish farmer Phan Tan Dung offered some explanation. Several years ago he bought three fish ponds from the government, which was promoting aquaculture on the lagoon. Now there are too many fish farms, he said. Pollutants cannot flow out because of overcrowding and disease spreads from pond to pond and from pond to lagoon. All along the lagoon's edges, fish farmers stand scooping off mounds of algae blooming on top of the still, fetid water.

The Huong River occupies a unique place in Viet Nam's identity. "The Huong River is very special for Hue, its people and for the people of Viet Nam," said Nguyen Ngoc Thien, vice chairman the Hue Provincial People's Committee. But competing uses have created myriad conflicts, conflicts that government officials are now turning to environmental flows to resolve. The Huong River basin was chosen as a pilot project for Viet Nam largely because, while its problems were complex, its politics were relatively simple: the entire river flows through only one province. Vietnamese officials now say they are convinced the environmental flows concept will eventually help unite rival interests on other rivers.

On the Songkhram River in Thailand, the process moved even further. An environmental flow assessment has already been carried out followed by a scenario workshop and multi-stakeholder dialogue resulting in improved understanding of the role of tributaries in relation to the mainstream of the Mekong River. A preliminary agreement was made to establish a joint inter-provincial basin management committee.

2.1.2 Himal-Hindu Kush Basins (Pakistan, India, Nepal, Bangladesh, China)

Mountain ecosystems are particularly vulnerable to climate change. Variations in temperatures, precipitation, soil moisture, fire and variations in the length of growing seasons are cumulatively likely to produce significant effects on both mountain and downstream ecosystems.

Environmental flow synthesis

The project began with syntheses of the status of environmental flows in each country and development of roadmaps for uptake and implementation in policy and practice. These developments took place in 2006 within an evolving dialogue in the region on how management of water resources should respond to changing relationships between States, changing economies and a changing climate. IUCN participated in the South Asia Water Conference in 2006, which brought together governments and civil society to explore the possibility of forming a Himalayan Water Council or Forum to share lessons and build regional cooperation on water. IUCN subsequently joined a partnership with the World Bank, International Centre for Integrated Mountain Development (ICIMOD), International Water Management Institute (IWMI) and Global Water Partnership (GWP) to stage the South Asia Water Dialogue in 2007.

Developing a network of organizations

One of the core elements of the project was the development of a network of organizations with an interest in putting innovative tools for water management into practice in the Himalayan region. Partners such as ICIMOD, The Energy and Resources Institute (TERI) and Winrock and other organizations joined IUCN Country Offices in Bangladesh, India, Pakistan, Nepal and China in implementation of the work. Activities in the project have helped to create co-ownership and shared interest among the participating institutions in introducing practices for integrated water resources management such as environmental flows, and payment for ecosystem services in the region.

Review of water management issues

A comprehensive review of water management issues and environmental flows in the Himal region was undertaken. Syntheses and implementation roadmaps were prepared for India, Pakistan, Bangladesh, Nepal, China and Bhutan, as well as reviews of best practice in IWRM in Nepal and India. A multi-stakeholder workshop on the role of high altitude Himalayan wetlands as water towers was held to assess management needs for ensuring the sustainability of these vital ecosystem services. The workshop concluded that improving and sharing understanding of the drivers and pressures, impact and response measures for Himalayan wetlands was an urgent priority. This action provided a basis for initiating support for integration of economic development, alternative livelihoods and climate change adaptation. In the second phase of WANI, further work in the region focused on climate change adaptation in the Indian Himal and integration of traditional water structures into water resource management in Pakistan (Box 7).

Box 7. Community action for water management and water security

In response to widespread concern over declining water security amongst communities in Uttarakhand State, India and the Himalayan region more widely, a new WANI project was initiated in 2009. The project is a partnership between WANI and the Uttarakhand State Forest Department (SFD) and the G.B. Pant Institute of Himalayan Environment and Development. Concern focuses especially on reduced groundwater availability from mountain springs and seasonal decrease in surface run-off. The SFD has identified watershed restoration as a critical response measure, including restoration of native forest ecosystems. There is recognition that community-led watershed management is key and for the communities and SFD to work together on developing solutions, which were found to include integrated and participatory planning approaches, institutional strengthening and better livelihood and economic opportunities. The SFD has committed to implementation of pilot actions through participatory decision making with IUCN support.

Saro Valley (Pakistan)

Restoration of traditional systems

Demand for WANI support in India has been mirrored by demand in Pakistan for support in demonstrating improved groundwater management. In Balochistan province, surface water is scarce and livelihoods are dependent on groundwater sources. WANI contributed to the Balochistan Partnerships for Sustainable Development (BPSD), a partnership among government departments and communities. WANI is supporting restoration of the traditional system of karezes used to extract groundwater for domestic and agricultural uses. IUCN Pakistan, through the BPSD, will use networks and lessons from the project to leverage development of national dialogue on water policy.

Balkhila Watershed, India. © IUCN/Ganesh Pangare

2.2 Demonstrating results – Mesoamerica

2.2.1 Barra de Santiago-El Imposible (BASIM) Hydrological Complex (El Salvador)

Fishermen, El Salvador. © IUCN/Taco Anema

Decentralized water management

In contrast to Viet Nam and other countries in the Mekong Basin, coordination of water management has not been strongly centralized in many Mesoamerica countries. As a result, WANI used very different entry points in El Salvador, Guatemala and Mexico. WANI focused on supporting and facilitating community-level organization, but with a strategic emphasis on institutionalizing networks of community associations to build coordination of water management at watershed and river basin level from the bottom up.

Community-level pilot projects

In the Barra de Santiago-El Imposible (BASIM) watersheds in El Salvador, WANI combined community-level livelihoods pilot projects with strengthening of water governance. Such a combination was a feature of many of the WANI demonstration projects, aiming to ensure that tangible benefits for people were demonstrable in the short term while developing the institutions needed for sustainable management of water resources in the long term.

In BASIM, community pilot projects addressed, for example:

- safe water supply – through protection of water sources by the promotion and adoption of biofilter technology in a network of 22 communities benefiting 275 families;
- rainwater harvesting – for fish farming and irrigation of vegetable gardening, involving women and men and linked to capacity building for business management and marketing;
- small business development – through support for a network of 20 entrepreneurial women's groups engaged in operating canteens for improved nutrition (6), ecotourism guide services (25), recycling plastics cleared from wetlands and beaches (8).

Developing community networks

Livelihoods projects were developed through wider community networks, principally a network of marine-coastal organizations (RIO-C-MAS) and a network for

community water supply (MESCOAGUA). These networks have diverse membership, including for example groups supporting turtle conservation, greenhouse production, youth training, community forestry, entrepreneurs, rainfall monitoring, and others. For WANI, these networks provided a platform for mobilizing joint action on water management. To build capacity and cohesion, WANI facilitated training for network leaders and members in legal regulations, business management and fundraising to complement promotion of and training in water management using the ecosystem approach.

Emerging river basin associations

Strengthening of technical and administrative capacities was the basis for the emergence of sets of community water administrative boards in the BASIM area. By operating in networks, they were able to begin processes for coordination of water management that had previously been absent. Cooperation between the project and the Ministry of Environment and Natural Resources then led to integration of project results into a national, Spanish-funded process for strengthening basin organizations in El Salvador. This resulted in the launch of a Basin Association for Cara Sucia-San Pedro Belén, incorporating the BASIM project area, and adoption of the project methodology into a mechanism for national replication, the National Plan for Basin Organizations.

Post WANI sustainability

The achievements of the WANI project continued with finance from project partners such as USAID and CARE and with the continued support of the government through the on-going participation of the Ministry of Environment and Natural Resources (MARN). This will insure that the micro-watershed organizations will continue to function and develop.

2.2.2 Tacaná watersheds (Guatemala, Mexico)

Tacaná region, Guatemala. © IUCN/Taco Anema

Combining livelihoods pilots and bottom-up coordination of water resources management

The demonstration project in the Tacaná watersheds, which descend steeply from the 4060 m peak of the Tacaná volcano to the Pacific coast, similarly combined livelihoods pilots and bottom-up coordination of water resources management. There are numerous small, rugged watersheds on the slopes of the volcano that drain into the Coátan and Suchiate rivers and cross the frontier between the Department of San Marcos, Guatemala and Chiapas State, Mexico. They have high population densities at high altitude and are deforested and badly eroded over a large area.

Community pilot projects

Community pilot projects were the basis for bringing people together to organize themselves into micro-watershed committees. There were numerous pilots, which were designed with at least 40 percent of activities in each addressing water, soil and environmental conservation. Examples included:

- forest nurseries for reforestation and promotion of agroforestry on farms, with 18 forestry and soil conservation demonstrations and 122 management plans for conservation of community forests;
- ten pilot projects in Chiapas facilitating development and networking of community enterprises and cooperatives working in, for example, beekeeping, fish farming, forest butterfly farm ecotourism;
- community gardens, organic farming and soil conservation projects, including organic fertilizer production at composting centres;
- construction of septic systems to improve sanitation and raise water quality in the Suchiate River;
- protection of springs for domestic water supply and installation of piped distribution;
- establishment of a demonstration and training centre in Chiapas for integrated management of watersheds.

Small business enterprise

On the Guatemala side of the project, WANI was instrumental in supporting the emergence of a youth-run cooperative enterprise called JEM (for 'Youth on a Mission'). JEM began as a catholic environmental education initiative run by a group of youth volunteers promoting sustainable water use and watershed restoration (*Real Lives 2*).

Locally available information and knowledge

Grass-roots mobilization was facilitated further on the Mexico side of the project through the establishment of 'virtual water resource libraries' in the town halls of five municipalities. These provided access to up-to-date information and knowledge on water resources and the environment on computers and the internet. The libraries are used in awareness raising, educational programmes for 10,000 young people annually and, importantly, as a means of furthering increased political openness over water at the municipal and State levels.

Organizing and developing micro-watershed committees

Change in water governance in Tacaná was mobilized through support for organization and development of micro-watershed committees. Micro-watersheds encompass three to four communities who share water resources in the watersheds of tributary streams of rivers. Micro-watershed committees are organized to coordinate resource management of shared water and land resources and, critically, how this is integrated with community development. This provides a mechanism for empowering communities to coordinate water management while addressing their own

development priorities. WANI promoted the formation of committees, providing training in, for example, administration and helping to complete formalities needed for legal recognition. Under WANI, IUCN helped the micro-watershed committees to develop a micro-watershed management plan. In 2011, 14 micro-watershed committees have been established, 6 of them under the WANI projects.

Vertical integration: local to national

As in BASIM, WANI also facilitated networking of micro-watershed committees and development of links with higher-level institutions as a means of initiating vertical coordination of water management. In Mexico, these developments coincided with the adoption of a new water law in Mexico that is decentralizing management of water. This created opportunities at three levels. First, WANI liaison with municipalities led to incorporation of community pilots and micro-watershed committees into municipal development plans in the Coátan basin in Chiapas. Second, the Tacaná project provided technical support and was a mediator in the formation of the Coátan River Committee set up to coordinate water management among municipalities. Third, WANI convened and facilitated meetings formalizing the Chiapas Council on Watersheds to provide a forum for dialogue and coordination with the National Water Commission (CONAGUA). Progress achieved through these institutional developments led to recognition at national level of Chiapas as a successful demonstration of implementation of the new water law.

Tropical Storm Stan: a lesson in preparing for natural disaster

The value and benefits of increased coordination of watershed management and development was clearly demonstrated in the aftermath of Tropical Storm Stan, which struck San Marcos and Chiapas in November 2005, causing catastrophic flooding and leaving many homeless, destroyed infrastructure and many fatalities in its wake. With a network stretching across the region and connecting local community organizations, municipal governments and national ministries, the Tacaná project reacted quickly and was instrumental in mobilizing responses. The project facilitated communications in the immediate aftermath of the disaster, damage assessment and the organization of donor coordination. It then participated with municipalities and government authorities in development of a reconstruction plan for the Department of San Marcos. With funding from the Royal Netherlands Embassy and DGIS, the project coordinated reconstruction of safe water supply systems in 78 communities. As reconstruction proceeded, work with partners at the different levels of the project network was undertaken to develop disaster preparedness plans and mechanisms. The crisis also awakened authorities and communities to climate change and the need to reduce vulnerabilities to tropical storms and flooding and led to investment in capacity building and planning for adaptation. This crisis was instrumental in galvanizing commitments to IWRM and water governance reforms.

Real lives 2

Members of JEM standing next to an environmental awareness poster. © IUCN/ Bill Hinchberger

A Jem of a business

Jóvenes en la Misión (Youth in Mission, JEM) began with 25 members aged 13–20 from three communities. It now boasts 2,500 members throughout the northern Guatemalan province of San Marcos. JEM's motto is "United for Water" and most of its activities have an environmental component.

A grant from the Japan Water Forum Fund (the proposal developed with assistance from the IUCN's Tacaná Project) was the start of something big. The US$1,000 grant was hardly enough to do much more than line up a few sprinklers, but that didn't seem to bother anybody. "The dollars weren't many, but the recognition was valuable for the youngsters," said Feliciano Velásquez, president of the Toacá-Tacaná Micro-Watershed Committee. "The provincial government took notice. Mayors took notice. That was important."

The grant also encouraged a dozen JEM members with an entrepreneurial bent to think big. Again with assistance from the Tacaná Project, JEM became a registered NGO in July 2005. About a year later, in a contract co-signed for legal reasons by the cooperative of the San Pablo Toacá community, JEM received a US$75,000 loan from the Guatemalan branch of AMANCO, a leading producer of irrigation tube systems in Latin America. The loan helped them build a total of 19 greenhouses with drip irrigation that will produce flowers and vegetables such as tomatoes, peppers and cucumbers.

To market its products, JEM will count on the support of both Amanco and Guatemalan Exporters Association (AGEXPORT). "AMANCO said they already have buyers," said Feliciano Velásquez. AGEXPORT is chipping in with financing for quality control and certification, market studies, the creation of an online presence, and business training. JEM President Ever Velásquez understands the need for this: "The second stage will be to train people how to run their own businesses." Community economic development is fundamental to environmental conservation,noted Ottoniel Rivera, IUCN coordinator of the Tacaná project: "These kids don't want to migrate to the United States like so many others. They want to remain in their community, but they have to make a living. They want to protect the environment, but then they ask, 'So now that we've saved the forest, how are we going to make a living?'"

Children helping reconstruction efforts after Tropical Storm Stan. © IUCN/Taco Anema

Developing alliances and integration of local to national levels

In Guatemala, the national legal context is very different as reform of national water law has not been possible over several decades. However, it was again possible to develop pathways for vertical coordination of water management.

At the community level, WANI facilitated development of alliances with COCODES, the community development committees and coordinated with Municipal and National Development Councils, to enable integration of micro-watershed planning and management with community-led action on development.

At the Department level of San Marcos, an alliance was created with 16 government and non-governmental organizations, to form CORNASAM (the Inter-Institutional Coordinating Body for Natural Resources and the Environment of San Marcos). CORNASAM has adopted the micro-watershed as the unit of planning for water and the environment and, together, these groups have coordinated outreach and training in the micro-watershed approach.

At the national level, they are also supporting the strengthening of the National Micro-Watershed Commission of Guatemala, which has been formed to lead application of governance reform through micro-watershed management country-wide (Figure 2).

Figure 2. Micro-watershed development from the local to the national

Transboundary actions

The Tacaná project was also active at the transboundary level. Historically, there has been no coordination of basin management between Mexico and Guatemala for the Coátan and Suchiate rivers. The project convened the first bi-national forum of mayors to jointly analyze and identify environmental problems in the two basins. This culminated in the signing in December 2006 of the 'Tapachula Declaration of Intent' by mayors on both sides of the border to cooperate in joint actions on watershed management.

Tacaná local to regional scaling-up

The BASIM and Tacaná demonstration projects built a platform for wider engagement of WANI in influencing the development of regional and national water policies. Development of integrated water resources management at the local level has continued with government and partner backing in these projects. This has included setting up local governance committees and water planning initiatives in other communities using the experiences gained from the WANI interventions. Water-sharing concepts at a regional level, including the BASIM river basins, have been further developed under WANI-2. The approaches developed have been scaled out to a further six basins in the region and the aim is influence development of a regional IWRM strategy with the Central American Integration System (SICA).

Influencing development of national and regional water policy

IUCN supported the development of a new draft water law in Costa Rica based on dialogues and technical analysis on environmental flows coordinated by IUCN. This was successful in incorporating a framework for environmental flows into the draft legislation in 2004, for example, as a result of presentations on the concept made to the parliamentary environment committee. To date, the draft water law has not yet been passed by Parliament, however, the environmental flows component has remained in subsequent drafts.

2.3 Demonstrating results – Africa

2.3.1 Pangani River Basin (Tanzania)

Implementation of the National Water Policy

The WANI demonstration project in the Pangani River Basin did not set out to shape new policy on water management, but instead was designed to test implementation of the National Water Policy, adopted in 2002, and the National Water Sector Development Strategy 2005–2015. The project was a close collaboration with the Government of Tanzania and the Pangani Basin Water Office (PBWO), responsible under the policy for management of the basin. The partnership focused on operationalizing ambitious reforms that called for establishment of catchment water fora and prioritization of water allocation for, first, meeting basic human needs and, second, the needs of ecosystems.

Water allocation, Tanzania. © IUCN/Taco Anema

The Pangani River is a vital resource for national economic development in Tanzania. However, this economic resource is under severe pressure because not only is water in the basin currently over-allocated, but the climate is drying and water scarcity growing. A transition to sustainable water management is the aim of the National Water Policy. As a first step in the project, therefore, WANI facilitated a basin situation analysis, completed in 2003, which highlighted the state of water resources and ecosystem services in the basin.

Sub-catchment fora

Water scarcity has fuelled conflict over water in the Pangani basin. There were more than 500 local conflicts identified in the basin. With support from project partners IUCN, the PBWO and local NGO Pamoja, stakeholders negotiated solutions to conflict at four sites. Experience gained among the partners in conflict resolution and dialogue fora was the starting point for scaling up governance processes to the sub-catchment level. The process of formation of the Kikuletwa sub-catchment forum was launched through agreement of a roadmap among partners. It was recognized that because of the complexity of local water management issues, operationalizing the forum is a long-term process. Under the roadmap, a preparatory phase was completed comprising a water-use audit, policy review, and institutional mapping. A series of consultation and training workshops was launched in 2008.

Environmental flow assessment

Environmental flows was piloted as a new basis for water allocation (***see Real Lives 3***). This entailed an environmental flow assessment and creation of processes for awareness raising and consensus building among stakeholders. The environmental flow assessment was led by an international, multi-disciplinary team of experts. As a pilot implementation of the National Water Policy, the project incorporated a programme for training and mentoring in EF assessment for a team of Tanzanian technicians, with the aim of building national capacity for replication in other basins.

Stakeholder dialogue and negotiation of water allocation

The stakeholder dialogue around the results of the flow scenarios from the assessment, represents the beginning of negotiations over water allocation in the Pangani. Ultimate authority over water allocation decisions currently rests with the PBWO, but the dialogue results are used to inform the office of stakeholder preferences. Both decision makers and stakeholders are thus learning how to use environmental flows and to negotiate water allocations. This is a long-term process of change, but the PBWO and stakeholders now have an information base, a shared understanding of the limits of water availability and emerging institutional structures for dialogue over water futures and potential for negotiation of water allocation decisions. With climate change expected to intensify drying in the basin, the learning and adaptive institutions that accompany EF implementation are important adaptation mechanisms that will equip the basin to cope better with both current and future climates.

National approaches of results from Pangani

As part of a continuing country-wide roll-out of the 2002 National Water Policy, and the World Bank financed Water Sector Development Programme, WANI continued to support implementation in the Pangani Basin while initiating support for scaling up experience to other basins. At the invitation of the Ministry of Water, WANI is co-investing in the Wami Ruvu Basin and using the consensus-building approaches piloted in Pangani to set up Water User Associations (WUAs), including support to establish their legal status and registration with the Wami Ruvu Basin Water Office. National outreach is continuing through sharing of lessons with the Ministry of Water and other Basin Offices in Tanzania.

Fish trap, Wami Ruvu basin. © IUCN/Katharine Cross

2.3.2 Building capacity to manage water resources in Uganda and Kenya

In 2010, WANI set up a new project to use experience from the Pangani Basin in Tanzania to demonstrate implementation of water governance reforms for IWRM implementation in Kenya and Uganda. The project is a partnership with the Global Water Initiative and is using support for establishment of new local water institutions to build national capacity for implementation of IWRM. In Kenya, WANI began work in 2010 in four communities in the lower Tana sub-catchment to pilot the formation of Water Resource User Associations (WRUAs), through awareness raising and initial community

consultations. Lessons and experience gained will be used by the Water Resources Management Authority (WRMA) to guide national roll-out of IWRM implementation. In Uganda, the strategy is similar, with WANI supporting demonstration of establishment of Water User Groups with GWI in Otuke Distict in the Upper Nile Management Zone. Preliminary consultations took place in 19 villages. Demonstration results will provide case studies to support the transition to catchment-based water resources planning being spearheaded by the Directorate of Water Resources Management in the Ministry of Water and Environment.

2.3.3 Application of environmental flows as a tool for sustainable development in the West Indian Ocean region

To further build on the Pangani demonstration project, WANI-2 is supporting the preparation of a major new regional project on river basin management and implementation of environmental flows. Based on the Initiative's success in Pangani, WANI was invited by GEF-UNEP to facilitate development of the freshwater component of the WIO-Lab project ('Addressing Land-Based Activities in the Western Indian Ocean'), which is focused on application of environmental flow assessments. The project will pilot application of environmental flows to sustainable basin management and water allocation in five basins between Kenya and South Africa, as part of implementation of the Strategic Action Plan prepared by GEF and partners in the previous phase of WIO-Lab.

2.3.4 Limpopo River Basin (South Africa, Botswana, Zimbabwe, Mozambique)

Learning from the Pangani demonstration was the basis for the WANI Limpopo project. The project aimed to build awareness and capacity for an environmental flow assessment in the basin and to identify institutional and legal mechanisms for mainstreaming environmental flows in basin management in the region. Interest in environmental flows in the region was promoted by the South African Water Law which, like the water policy in Tanzania, calls for prioritization of water allocation to meet the basic needs of people and the needs of ecosystems, through the water reserve.

Understanding environmental flows and application

Learning was a major focus of the project. To catalyze understanding of environmental flows and applications in development, IUCN facilitated field exchange visits for nine managers from the Limpopo River Basin to the Lesotho Highlands Water Project, to observe results from EF implementation, and to the Pangani basin. In total, 34 water practitioners and managers from all Southern African Development Community (SADC) countries took part. The training included field exercises and planning of flow assessment and implementation for the Blyde River in South Africa. A demonstration of environmental flow assessment was also carried out in the Mzingwane Catchment in Zimbabwe. Analysis showed expected changes in river conditions as a result of changes in flow allocation (in terms of quantity and timing) downstream of the Mzingwane dam.

As in Pangani, scenarios for improving river health through management of flow from the Mzingwane dam, including future options for water supply to the City of Bulawayo, were then developed through a participatory workshop process with key stakeholders from the Catchment Management Agency and City of Bulawayo. Environmental flow assessments were a large component of the WANI projects in the region, a reflection of the importance of river flows to ecosystems and livelihoods.

Southern Africa Regional Environmental Flows Network

The project culminated in the formation of a Southern Africa Regional Environmental Flows Network. Participants include managers from the Limpopo River Basin Commission, SADC Water Resources Technical Committee and Directors of Water in member States of SADC. The aims of the network are to increase access to technical expertise, promote sharing of experience and catalyze action on recommendations from the project, including environmental flows implementation in the Mzingwane and the Blyde, and reform of policy and legal frameworks.

Flow assessment, Mzingwane dam, Zimbabwe. © IUCN/Katharine Cross

SADC Protocol on Shared Watercourses

Concurrently, a review was carried out of the SADC Protocol on Shared Watercourses and national legislation from the four riparian States to determine provisions supporting application of environmental flows and reform needs. The review identified attempts to address environmental flows at both policy and legislative levels, but that little was being done to implement environmental flows because of inadequate expertise and lack of the necessary information. The review recommended concerted action to establish clear and systematic rules in each country legitimizing the provision of water for environmental flows and supporting legislation to empower water managers to manage river flows according to environmental flow recommendations. In addition, given the great importance of transboundary rivers in the region, the review recommended that harmonization of management units (for example to river basins) for water among countries and with the SADC Protocol on Shared Watercourses would ease cooperation.

Real lives 3

Village well, Tanzania. © IUCN/Taco Anema

Climate change compounds a story of rights and conflict

There is little doubt that the climate in the Pangani River basin is changing fast. The Pangani used to be higher and stronger, and flow was guaranteed through the two dry seasons of every year. Flows have decreased and conflict over the dwindling resource now requires astute management. "The initial conflicts between hydropower, irrigation and general water users were perhaps an early indicator of climate change," says Washington Mutayoba, director of Water Resources in the Tanzanian Ministry of Water. Population pressures, deforestation, increasing numbers of livestock and expansion of cultivated land, all lead to excessive abstraction of the basin's water and are additional layers of complexity. "In this country there is tremendous pressure on our natural resources," says Mutayoba. "You need to integrate planning by knowing what is available and understanding demands."

Such analyses provide detailed data on the water-use requirements of all users in a basin including the environment, thereby allowing management institutions to develop current and future water-use scenarios and to make authoritative allocations based on the sustainable capacity of the river. "Without such data, we cannot do anything," explains Pangani River Basin Officer Hamza Sadiki. "The environment is supposed to sustain people. Our responsibility is to raise awareness. We will do this by scenario proposing. Show it to them and let them understand," says Sadiki. "There is climate change, and people are appealing to us. What can government do? We tell them they have to change their lifestyle."

It is Sadiki, and the Pangani Basin Water Board that he reports to, who, under Tanzania's National Water Policy of 2002, make the allocation decisions. The devolution of authority to basin level is recognition by national government that water resource allocation is best managed close to the ground and is the most appropriate response to avoid local conflicts. The new policy also calls for decision makers to prioritize a river's environmental health after first meeting basic human needs. Both Mutayoba and Sadiki are confident this new approach will allow the Pangani to best cope with the demands that climate change and other pressures will place on them and, under these circumstances, most equitably allocate the river's much-desired resources.

2.3.5 Lake Tanganyika Basin (Tanzania, Burundi, Zambia, DRC)

Lake Tanganyika Basin Authority

In the Lake Tanganyika Basin, WANI worked with a consortium of partners to support the development and operationalization of a new transboundary basin authority. The African Development Bank, FAO, UNDP/GEF and IUCN jointly facilitated and supported the financing of high-level dialogues and negotiation during 2003–2006. IUCN convened two preparatory meetings and a Conference of Ministers Meeting, which resulted in the signing of the "Convention on Sustainable Management of Lake Tanganyika" by the governments of Tanzania, Burundi, Zambia and DRC, and formal establishment of the Lake Tanganyika Authority (LTA). The mission of the LTA is to reduce environmental threats to the Lake Tanganyika ecosystem, while promoting sustainable development and poverty eradication in the basin.

To support operationalization of the agreement, IUCN facilitated management committee meetings in which agreements were reached on the establishment of an LTA headquarters and nomination of the LTA Secretariat. Beginning in 2007, WANI then assisted with the development of a workplan for the Secretariat, aiming to coordinate a regional approach to the management and development of Lake Tanganyika, integrating the four basin States. This includes development and implementation of strategies to reduce threats to the lake from pollution, sedimentation, over-fishing or destructive fishing practices, alien invasive species and poverty.

Continuing development of regional joint actions

In the years since the end of the WANI project, the Lake Tanganyika Authority has continued to develop joint actions with countries bordering the lake. The Strategic Action Plan was updated in 2010. Efforts to establish a Framework for the Lake Tanganyika Regional Integrated Environmental Monitoring Programme are also on-going. Regional workshops continue to be held on concerns affecting the lake such as fisheries, invasive species and climate change

2.3.6 Komadugu Yobe River Basin (Nigeria, Niger)

The Komadugu Yobe River covers parts of northern Nigeria and south-eastern Niger, upstream of Lake Chad. With a semi-arid climate, rainfall variability is high and severe drought a frequent hazard. There is deep poverty in the basin, where the population has doubled in three decades to more than 23 million. Over this same time, flow in the Komadugu Yobe has fallen by 35 percent, due to the compound effects of the construction of the Tiga and Challawa Gorge dams since the 1970s, abstraction of water for large-scale irrigation and regional drying of the climate. The river itself has been severely degraded and livelihoods have been devastated as a result. To compound these problems, the basin encompasses six federal states in Nigeria, which have been unable to coordinate development of water resources. Damage to the

river and its ecosystem services has resulted in communities less able to cope with drought and conflicts over resources have increased.

Studies and assessments

With help from WANI, however, the situation in the Komadugu Yobe Basin (KYB) led to action. Working together with the Federal Ministry of Water Affairs and the Nigeria Conservation Foundation, IUCN first led development of a comprehensive knowledge base for the basin, through a water audit, social and economic assessments, and compilation of databases that were available for use by all stakeholders. These succeeded in quantifying water demand and availability and in developing water demand scenarios, to provide a basis for informed decision making on sustainable water resources management and development. To gain legitimacy, the studies and assessment results were subjected to stakeholder scrutiny and verification in a series of workshops held around the basin.

Catchment Management Plan

To complement the emerging new knowledge base, the project undertook a review of the policy and institutional framework in the basin. This identified the absence of coherent and coordinated basin management institutions as an impediment to progress and catalyzed dialogue among the riparian states. This led ultimately to the formation of State IWRM Committees in each state in place of formerly fragmented responsibilities for water resource management. This step facilitated the convening of dialogues at basin level that spurred multi-stakeholder negotiation of a Catchment Management Plan which specified, in detail, consensus over a set of nine Strategic Actions required for basin restoration and sustainable development of water resources (*see Real Lives 4*). The Plan was backed by a 'Water Charter' for the basin, which laid out an agreed framework for governance and institutional reform in the basin, based on agreed principles for sustainable development of the basin and the transparent definition of the roles and responsibilities of governments and stakeholders.

Pilot projects to deliver livelihood benefits for community stakeholders

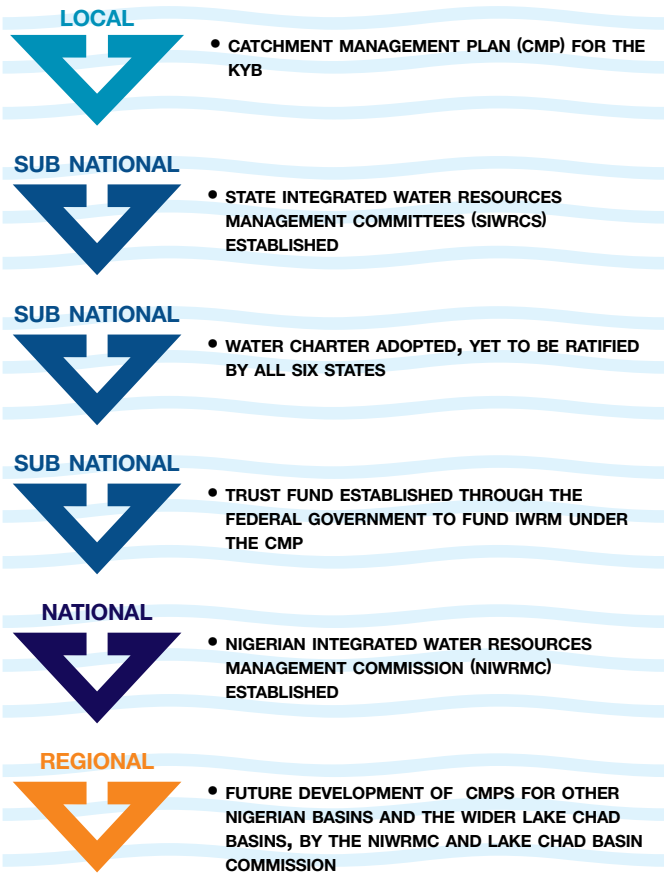
Preparation for implementation of the Catchment Management Plan was strengthened by a set of pilot projects that delivered livelihood benefits on the ground for community stakeholders. These pilots included clearing aquatic weed infestations that were blocking the river flow, dredging channels, improved flood early warning and conflict resolution. The substantial impact of the project on water resources governance led to a 90 percent reduction in water conflicts reaching court by 2006. In the second phase, pilot interventions were continued particularly channel clearance and dyke construction in order to maintain river flows and protect livelihoods.

His Excellency Olusegun Obasanjo, President of Nigeria, at the Damaturu Summit. © IUCN/Daniel Yawson

Inauguration of a $125 million Trust Fund

Recognition of the success of the project has reached the highest levels in Nigeria. At a summit of State and Federal governments in the basin in 2006, President Obasanjo announced the inauguration of a $125 million Trust Fund earmarked to support implementation of the Catchment

Figure 3. Local to national development of integrated water management in Nigeria



Real lives 4

Sarkin Kogi and cleared channel. © IUCN/David Anyanwoke

The River Chief Reconnects the Current

The family of Sarkin Kogi (Hausa for chief of the river) once inhabited the land that now lies covered by two billion cubic metres of water behind the 48m-high Tiga Dam. But times have changed since the dam. "What is saddest is the loss of loyalty to traditional institutions surrounding the river," said Sarkin Kogi. "There were rites and rituals that were respected. There were crocodiles and snakes which served as safeguards. But now the government has taken over everything. Now wild things have disappeared." In their place, the most visible sign of a changed order has been the thickening infestation of alien typha grass.

The government sees itself as owner of the irrigation canals, which they maintain since they earn revenues on its water. But waters released into the river are left to anyone." That vacuum led to problems downstream, when people along the river asked the Water Board for more water. The message was conveyed to Abdulsalam Ibrahim, Principal Irrigation Engineer of the Hadejia-Jama'are River Basin Development Authority (HJRBDA) in Kano. "In the past the Water Board never came to bother us about low flows," said Ibrahim. Now, in a democracy responding to demands, the government released more from the dam. The problem was, the water never arrived at its destination. "The regular river led to continuous and aggressive meandering," explained Yahaya D. Kazaure, formerly the Assistant Director of Operation and Maintenance for the HJRBDA. Starved of sediment trapped behind the dam, the river eroded banks and river beds downstream, increasing the erosion and deposition of sediment. The once narrow and deep river channel became wide and thin, providing an ideal home for the typha grass.

The KYB project offered a link between cause and consequence. First the Water Audit highlighted the nature of the problem. Then the pilot clearing – though tedious and labour-intensive – demonstrated a practical and cost-effective way of treating it. Now the project's emerging Catchment Management Plan will help implement plans for water throughout the entire Komadugu Yobe Basin. "Before, we did not have the resources and capacity to know who needs what, when, and for how long," said Kazaure. "But the data collection brought trust, within and across boundaries as we share. By getting a better sense from the audit and from feedback about what was going on, we were better able to improve service delivery." Beneath Tiga Dam, Sarkin Kogi recently caught a huge fish worth $100. It reminded him of the old days, and raised hopes that with more typha clearance, the flows will resemble their former selves.

Management Plan. Commitments totalling $13million were made at the summit by the six riparian Governors and the Federal Government, with fundraising for further contributions now on-going.

Formation of the Nigerian IWRM Commission

In 2008, the success of the project was marked further when the formation of the Nigerian IWRM Commission was announced. The main architect of the KYB project from the Federal Government of Nigeria was appointed to head the Commission, thus helping to provide an important platform for the scaling-up and replication of the approach developed in KYB to other basins in Nigeria and in the wider Lake Chad basin (Figure 3).

2.4 Demonstrating results – South America

2.4.1 Santa River Basin (Peru)

Supporting development of an Andean regional strategy for IWRM

In South America, WANI is principally focused in the Andean countries, where it is working in partnership with the General Secretariat of the Andean Community of Nations (SGCAN) to support the development of an Andean regional strategy for IWRM. In parallel, in 2010 WANI consolidated joint work with the national water agencies in Ecuador and Peru. In Peru, specifically, WANI is working with the Huascaran Protected Area Office (under the Environment Ministry), the National Water Authority and, using co-investment by USAID and The Mountain Institute, developing climate-resilient strategies for water management in the Rio Santa Basin. WANI is facilitating formation of the 'AguaSanta Forum' as a multi-stakeholder platform for IWRM planning and development of a basin-level strategy for climate change adaptation through a participatory forum.

Huaraz Town, Santa River Basin, Peru. © IUCN/James Dalton

2.4.2 Promoting environmental flows in the Andean countries and demonstration in the Huasco River Basin

WANI is promoting environmental flows in the Andean countries. A series of national and regional-level training courses on environmental flows have succeeded in opening dialogue on the topic among national water agencies, hydropower companies, NGOs and governments. Workshops were designed to aid the integration of environmental flows into national and regional IWRM planning, and into water laws and policies that are newly developed or presently being drafted. This led in 2010 to IUCN advising the Government of Peru on the integration and operationalization of environmental flows in regulations associated with the new water law. In Ecuador, IUCN is supporting the National Water Secretariat (SENAGUA) on incorporating environmental flows into drafting of new national water policy. The momentum created in the region on environmental flows has led to IUCN participating in a partnership with the Water Center for Arid and Semi-Arid Zones in Latin America and the Caribbean (CAZALAC), the Regional Offices of the Environment Ministry and National Water Directorate, to implement a regional environmental flows demonstration project on the Rio Huasco in the Atacama region of Chile.

2.5 Demonstrating results – Oceania

Yasawa Islands, Fiji. © IUCN/James Dalton

2.5.1 Demonstrating ecosystem-based management of water resources in the Pacific

Regional roll-out and learning

In the Pacific, WANI is bringing its expertise to work with governments and regional and local partners to demonstrate ecosystem-based management of water resources. In 2010, joint activities with the GEF Pacific IWRM project were consolidated, as a mechanism for using learning from WANI projects across the region. Within this context, WANI-2 is working on three demonstration projects while developing collaboration with the regional GEF project to support learning and knowledge exchange. Two demonstration projects are in Fiji and the third in Samoa (Figure 4).

2.5.2 Nadi River Basin (Fiji)

Demonstrating decentralization of water management institutions

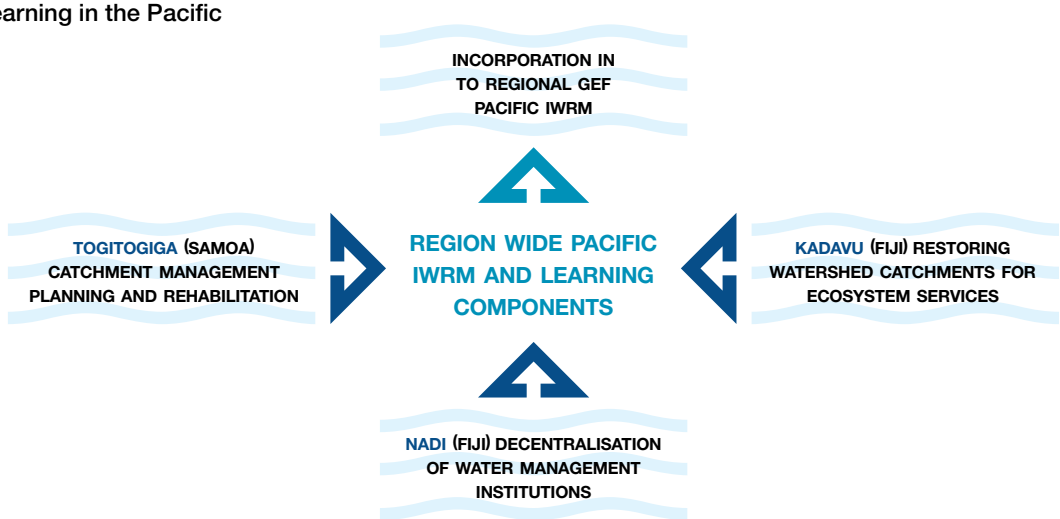
In Fiji, WANI is facilitating operationalization of the Nadi Basin Catchment Committee (NBCC), as a demonstration of decentralization of water management institutions. In 2010, IUCN helped the NBCC undertake a Nadi Basin inventory, including facilitation of a multi-stakeholder dialogue that brought together communities and government agencies. This process proved to be instrumental in the development of a draft National Flood Policy which has broken new ground in achieving inter-agency coordination in water management in Fiji.

2.5.3 Kadavu Watershed (Fiji)

Maintaining and restoring watershed catchments and conserving ecosystem services

Also in Fiji, WANI is working with communities on the island of Kadavu to maintain and restore watershed catchments and to conserve ecosystem services through a partnership with the University of the South Pacific, an IUCN member. As in the Nadi Basin, the focus is on establishing local governance structures as a demonstration of decentralization. In 2010, the District Catchment Committee was established to oversee actions to implement an integrated approach to water management for the district. Village and district leaders

Figure 4. Learning in the Pacific



have also received training in leadership and management skills. This was complemented at village level with training on native forest restoration that led to four villages constructing their own nurseries, the planting of native species in degraded upper catchment areas, and reduced burning and grazing, with the aim of reducing silt loss to coastal lagoons. The demonstration aims to inform government planning and policy through recognition of the value and benefits of community governance in managing water resources, alongside Locally Managed Marine Areas (LMMAs).

2.5.4 Togitogiga Catchment

Developing and implementing a plan for rehabilitation and sustainable management of the catchment

In Samoa, WANI-2 is working with the government to pilot implementation of watershed management under the Water Resources Management Act of 2008. A demonstration project in Togitogiga Catchment is underway that will develop and implement a plan for rehabilitation and sustainable management of the catchment. In 2010, a draft Catchment Management Plan was developed and a consultation process held. To make roles and responsibilities transparent to all, essential in piloting the 2008 Act, a Memorandum of Understanding between the Togitogiga communities and the Ministry of Natural Resources and Environment was negotiated. This formalizes the integration of local communities into decision making to enhance linking of local to national objectives. Formal endorsement is expected in 2011.

Pumping groundwater for agriculture,Marj Sanour. © IUCN/Megan Cartin

2.6 Demonstrating results – West Asia

2.6.1 Marj Sanour Basin (Palestine)

Demonstrating community-led planning of water resource management

In Palestine, WANI-2 has worked in close collaboration with the Palestine Hydrological Group (an NGO) in the Marj Sanour groundwater basin to support demonstration of community-led planning of water resource management. This was successfully concluded in 2010 with agreement of the Watershed Development Plan 2010–2025, which was endorsed by the Palestine Water Authority. The planning process deployed a Decision Support Tool developed through the project to identify priority actions relating to water harvesting and land management given the prevailing cycle of local flooding and water scarcity and probable future fluctuations due to climate change. The community and Palestine Hydrological Group are working on piloting water management interventions, including on-going collaboration with IUCN. In 2011, the project is to be incorporated into a regional IUCN-led and EU-funded project 'Social, Ecological and Agricultural Resilience to Climate Change' (SEARCH), under which pilot actions will be implemented.

3. Governance, Policies and Planning

The overall objective was to contribute to establishing effective water governance in a selected number of countries and river basins. This was implemented through supporting the development of policy, legal and institutional frameworks, as well as the creation of new (and strengthening existing) capacities at various societal levels.

3.1 Governance results – Asia

3.1.1 Mekong River Basin (Thailand, Cambodia, Lao PDR, Viet Nam)

The Mekong Basin project focused on reform of water governance and demonstration of livelihoods benefits from conservation and sustainable management of aquatic resources. In contrast to Mesoamerica, where centralized governance of water is weak, reform processes in the Mekong must be consistent with State-dominated and strongly centralized control of decision making. As a result, activities in the Mekong followed a strategy of mobilizing engagement of the grass-roots in decision making, while facilitating opening of high-level dialogue to new voices and building networked, multi-stakeholder processes to bridge scales from local to regional levels.

Tai Baan: villager-led action research

At local level, IUCN supported the development and expansion of the 'Tai Baan' network. Tai Baan is a form of participatory, villager-led action research that originated in Thailand. Tai Baan empowers local people to use their own local knowledge to engage with and influence decision-making processes. It builds the capacities of local people and institutions to represent their interests in multi-stakeholder processes, strengthening their ability to make claims on state decision-making processes. Tai Baan helps to catalyze changes in State institutions to make them more responsive to local needs, and to thus better integrate local priorities

Fish ponds, Cambodia. © IUCN/Taco Anema

for poverty reduction with environmental and development decision making.

Tai Baan network sharing lessons

WANI support for the Tai Baan network supported sharing of advice and lessons among Tai Baan groups and the creation of new groups in Cambodia, Viet Nam and Lao PDR. For example, a group of Tai Baan researchers from the Songkhram Basin provided advice and encouragement to a Tai Baan group in Chiang Khong, Northern Thailand, where river rapids were due to be cleared through blasting as part of the Upper Mekong Navigation Improvement Project (*see Real lives 5*). Local Tai Baan researchers documented fish species threatened by the project and, importantly, the contribution of the associated local fishery to livelihoods in the community. IUCN then facilitated presentations of the Tai Baan research results to the Thai National Human Rights Commission and to a Senate Committee Meeting at Parliament House. As a result, IUCN was invited onto the Working Group on Environmental Impact Assessment for the navigation project, where it was able to ensure participation of NGOs and grass-roots organizations. Local concerns in Chiang Khong were submitted to Cabinet through the Working Group, resulting in a *de facto* moratorium on blasting of the rapids at Chiang Khong.

The Tai Baan network mobilized advice to a group in the Salween basin looking at the impacts of hydropower development, as well as Tai Baan-style groups in Cambodia, Viet Nam and Lao PDR. At Attapeu in Lao PDR, this led to application of action research and social learning to assessment and planning to reduce environmental impacts on health. Village research has enabled people to monitor their own health and manage family nutrition. When combined with installation of tube wells at Attapeu and development of home gardens, such new knowledge has changed decision making about water, food and hygiene at the community and household level. The result is less water-borne disease and malnutrition in the district.

Promoting replication of Tai Baan research

Application of the Tai Baan approach continues to be very relevant and applicable across the region, particularly in breaking new ground in civil society involvement in water management and policy. In 2010, over 180 representatives of local community groups from 10 river basins came together in a workshop and synthesized over a decade of experience in Tai Baan research approaches in relation to water resource management as part of efforts to promote replication of Tai Baan in Thailand and in neighbouring countries. For example, local communities in Loei Province, Thailand and Xayabouri Province, Lao PDR are starting to use Tai Baan to help them fill gaps in the Environmental Impact Assessment and mitigation strategies for large hydropower projects.

Impacts of rapid economic growth documented

In the Upper Mekong, rapid economic growth and the impacts of upstream construction of dams in China has led to major changes in river flows. Impacts on livelihoods and habitats, including those essential for fisheries productivity, were documented by IUCN and published in 2006. Rising awareness of the rapid and profound changes taking place in the river amongst inhabitants in the region has led some to reassess how they use resources from the river. In 2006, with guidance from IUCN and partners in the Mekong Wetlands Biodiversity Programme, this led to fishermen on the Thai side of the Upper Mekong placing a moratorium on fishing of the Giant catfish, a highly prized but increasingly rare endemic species in the region.

Offerings at the Giant catfish festival, as part of conservation measures in Thailand. © IUCN/Wayne Arnold

Fish conservation zones

Success in fish conservation has also been witnessed in the Songkhram Basin in Thailand and at Attapeu in Lao PDR. In both cases, fish conservation zones had been implemented by local communities over the preceding two years. In 2006, the benefits of this move became apparent. Tai Baan researchers documented increased catches associated with increasing numbers of fish in the conservation zones, and higher numbers of large fish being sold in local markets for better prices.

M-POWER network

WANI also supported region-wide initiatives in water governance. WANI was instrumental in the development of the M-POWER network in the Mekong Basin. This is a network of NGO and academic groups applying action research to support learning on water governance and reform options in the region. This led to the publication of two significant books: *Democratizing Water Governance in the Mekong Region*, and *Mekong Region Water Resources Decision Making*. The latter is the only in-depth study of the implications of the strategic priorities set by the World Commission on Dams for national policies and laws in the Mekong countries and on regional agreements on water resources. It was prepared as part of a WANI-led project on regional interpretation of the findings of the WCD in the Lower Mekong. This included translation, publication and dissemination of the WCD Strategic Framework in Cambodia, Lao PDR and Thailand, in addition to support for National Working Groups (NWGs), comprising representatives of government agencies and NGOs, that developed

Real lives 5

The Khon Pi Luang rapids on the Mekong River, north of Chiang Khong, Thailand. © IUCN/Wayne Arnold

Tai Baan halts rapids blasting

In the dry season, the rocks at Khon Pi Luang north of Chiang Khong, Thailand, are a feature of the upper Mekong River. After the rains they form one of the upper Mekong's last big rapids. Eager to open the river's upper reaches to shipping from Yunnan province south to Luang Prabang in Lao PDR, China and its southern neighbours agreed in 2001 to start blasting some of the rocky outcrops in the Mekong. The rapids at Khon Pi Luang would be gone by now if concerned locals hadn't taken action. Concerned that authorities were underestimating the impact on their environment and livelihoods, residents and local environmentalists sought support from IUCN to conduct their own assessment. They were able to use their findings to challenge the proposed blasting and ultimately block it.

The model for this kind of community action was the Tai Baan research originated by villagers to protest the impact of the Pak Mun dam in eastern Thailand on their traditional fisheries. "Decision-making needs to be participatory," said Somkiat Khuenchiangsa, coordinator of the Mekong-Lanna Natural Resource and Cultural Conservation Network in Chiang Khong, which led the movement against the blasting. "We're trying to encourage the community to stand up for the environment and conserve these natural resources for everyone."

Locals were concerned that the blasting would have an impact on their lives that wasn't being taken into account. Somkiat's group joined with others in the area to campaign against the blasting and document the effect it would have. Pulling 100 researchers from 10 villages, the group explored the fish and plants in the area, as well as what role they played in the cultural lives of the nine tribal groups that lived nearby. What they found was exhaustive: not only did they identify 100 species of fish in the area, they were able to single out 16 species found in the rapids and 24 in riverside whirlpools. They were also able to chronicle the impact of the blasting already conducted, finding that it was worsening erosion along the river, eliminating habitats for more fish.

Faced with mounting controversy over the impact of the blasting, the Thai government in 2003 halted the project. The effort also helped to established local communities as recognized authorities on their own environment. "Normally research is conducted by academics," said Somkiat, "so the community was proud to have been able to do it on their own."

recommendations on how to apply the WCD Strategic Framework in each country.

Mekong Region Waters Dialogue

Engagement of stakeholders in debate over water governance in the region culminated in July 2006 in the staging of the Mekong Region Waters Dialogue in Vientiane, Lao PDR (see Real lives 6). More than 160 participants attended the dialogue, drawn from senior and middle management in the Mekong River Commission (MRC), the Asian Development Bank (ADB), World Bank, national governments, the private sector, academia and NGO activists. The dialogue was built around a review of the strategic plans for the Mekong Basin of MRC, ADB and the World Bank. This allowed participants to share perspectives on the future of the Mekong and opened two-way learning and open communication between these organizations, and government and civil society representatives. Public scrutiny of plans for water resources development in the basin is increasing as a result, with continuing dialogue leading to participating institutions now recognizing the merits of alternative approaches to large projects. The 2006 dialogue led directly to a new dialogue process, launched in 2008, in which IUCN is convening and facilitating national dialogues among government agencies and civil society in each of the four Lower Mekong countries and a series of regional-level dialogues (Box 8).

Box 8. Mekong Water Dialogues

The Finland-funded Mekong Water Dialogues, which builds on the WANI-1 Mekong demonstration project, continued to complement WANI-2 work in the region. In 2010, results focused on local multi-stakeholder dialogues (Tonle Sap in Cambodia) and work by National Working Groups (NWGs) in influencing water policy development. For example, the new Lao Water Policy (2010–2020) and Water Strategy (2010–2015) were developed by the Water Resources and Environment Administration of Lao PDR, using the NWG as a platform for compiling a wide range of stakeholder inputs. Also with strong support from the Mekong Water Dialogues project, the Government of Lao PDR acceded to the Ramsar Convention. In Viet Nam, mirroring development in Lao PDR, the NWG mobilized stakeholder inputs to the new National Target Programme on Water, which incorporates implementation of water allocation and protection plans for Vietnamese rivers.

Real lives 6

Young people on the banks of the Huong River, Viet Nam – Mekong Dialogues are vital for the future of this and other Mekong region rivers. © IUCN/Wayne Arnold

Mekong Region Waters Dialogue

The Mekong touches thousands of communities. Millions of people depend on it. And major decisions concerning the future of the mainstream river and its many tributaries are now being taken. "Many legitimate stakeholders, with much to offer in the way of knowledge and ideas, have no opportunity to input to the policies and projects that affect them," said Somrudee Nicro, Director of the Urbanization and Environment Program at the Thailand Environment Institute in Bangkok.

In 2006, the Mekong Region Waters Dialogue brought together 160 officials, experts and civil society representatives on the banks of the river in Vientiane to discuss the major issues facing the rivers of the region, and the challenges facing the people of the six Mekong riparian countries. These are critical times for the Mekong and the other rivers of the region. China, Lao PDR, Myanmar and Viet Nam all have major hydropower development programmes. Thailand and Cambodia are considering further major irrigation projects that would require much more water diversion. The water needs of cities and villages are also rapidly increasing. Convening dialogues such as these represents a substantial change for IUCN, demonstrating a shift in emphasis from advocating only conservationist approaches, to now playing a new role as a constructive agent in sustainable development via the skilled facilitation of deliberation in the public sphere, respectful of a wide range of development perspectives.

For many, the public face of the Dialogue was like many such meetings, an opportunity to network and discuss important issues such as fisheries, hydropower development and valuing local knowledge. "I liked it. It was open and unusual," said Sourasay Phoumavong, Deputy Director General of the Lao National Mekong Committee in Vientiane. The Dialogue gave civil society groups a rare opportunity to meet face to face with key executives of groups such as MRC, and development agencies such as the World Bank and ADB. Both the World Bank and ADB acknowledged after the Dialogue that they were incorporating much of the feedback received into their own assistance strategies for the Mekong region. From this the MRC investigated how to have more structured and regular engagement with civil society and business actors to ensure their programmes benefit from wider feedback during formulation and implementation. The Dialogue also gave many regional participants rare exposure to the kind of open debate that more participatory and deliberative approaches entail.

3.2 Governance results – Mesoamerica

Watershed, El Salvador. © IUCN/Wayne Arnold

3.2.1 Scaling up governance and IWRM in Mesoamerican watersheds

In Mesoamerica, the focus under WANI-1 was establishment of micro-watershed councils as a mechanism for integrating watershed management and restoration with community development. In the Tacaná project, as is the case in many Central American basins, transboundary cooperation emerged as a critical gap in water governance. However, the micro-watershed approach proved to be an important mechanism for promoting community and municipal-level cooperation and exchanges between Mexico and Guatemala. Building on lessons learned, WANI-2 is collaborating to support strengthening of transboundary cooperation in six river basins in the region.

Facilitating transboundary dialogue

In 2010, WANI-2 applied the *SHARE* toolkit to implement training in transboundary water management and negotiation for high-level officials from Ministries of Foreign Affairs, Agriculture and Environment in several Mesoamerican countries. Complementing this were activities at basin level undertaken with co-investment from the German International Climate Initiative to facilitate transboundary dialogue and institutional strengthening needed for adaptation of water management to climate change. This is focused on basins in El Salvador, Costa Rica and Panama. Further co-investment in strengthening transboundary cooperation using WANI approaches was agreed with the Swiss Agency for Development Cooperation (SDC), under the 'Building River Dialogues and Governance' project (BRIDGE), launched in 2011.

3.3 Governance results – Africa

A local trader moving his goats along the Volta River. © IUCN/Taco Anema

3.3.1 Volta River Basin (Burkina Faso, Ghana)

WANI was also engaged with reform of transboundary water governance in the Volta Basin and, like the Mekong, this entailed strengthening institutions at local to regional levels and the bridges between them. The project supported the formation of WUAs that linked communities across the Burkina Faso-Ghana border, national-level committees and finally an intergovernmental transboundary agreement and Code of Conduct.

Transboundary fora

At local level, the Volta project organized a joint transboundary forum of local communities in a pilot zone of the White Volta sub-basin, where the river forms the frontier between Ghana and Burkina Faso. The forum brings together local stakeholders with the aim of resolving transboundary conflicts locally and of promoting integrated planning and cooperative management among communities and the local administrations on either side of the river. Previously, response to such local conflicts was in the hands of the respective Ministries of Foreign Affairs, which prevented local problem solving.

Village discussions, Burkina Faso. © IUCN/Danielle Perrot-Maître

Livelihood projects: building trust and capacity

Livelihood projects were supported in the transboundary pilot zone with the aim of both demonstrating integrated management of water resources at local level, and building trust and capacity. Re-vegetation of 45 km /112.5 ha of degraded river banks along the White Volta was completed, using fruit trees and fuelwood species to combine both riverbank restoration and livelihood benefits. Rehabilitation of a small, offstream dam was completed (*Real Lives 7*), to capture water for small-scale irrigation of dry season cropping and watering cattle. These projects, and others such as the construction or rehabilitation of wells in six villages on either side of the frontier, were implemented in partnership with local NGOs specializing in community development. Participating communities were also given training in setting up and running management committees for their projects, including management of finances for continuing investment and maintenance. The pilot projects thus built links between livelihood benefits and participation in decision making over management and development of water resources. These activities have contributed to improving incomes for participating households by US$ 90–180 per year.

Code of Conduct

At the national level, IUCN supported development of a Code of Conduct by the Burkina-Ghana 'Joint Technical Committee on IWRM' (JTC-IWRM). This initiative was launched in 2005 with the aim of providing guidance to the two States on the development and management of shared water resources in the basin. In 2006, national validation workshops were convened in each country to ensure input was received from government agencies, NGOs and civil society groups. The JTC-IWRM then hosted a harmonization workshop with representation from both countries that led to finalization of the Code in June 2006. Meanwhile, broader agreement on the establishment of the Volta Basin Authority (VBA) was reached by all six riparian countries (adding Mali, Benin, Togo and Cote d'Ivoire), as a result of processes facilitated in part by IUCN. The Code of Conduct is now being used as the model for developing a Water Charter for the Volta Basin that can be signed by all six riparian States, with support from the project under a cooperation agreement between IUCN and the VBA.

Scaling-up in the Volta River Basin: supporting the Volta Basin Authority

In the Volta River Basin, IUCN continued to play a leading supporting role to the VBA. The PAGEV ('Improving Water Governance in the Volta Basin') project was instrumental under WANI-1 in building transboundary cooperation in the basin at local to national and basin levels. Under WANI-2, the project is working closely with the VBA to support both strategic development of the institution and implementation. In 2010, WANI supported the finalization and stakeholder endorsement of the VBA Strategic Plan, including collaboration agreements for joint actions between the focal institutions of VBA and local stakeholders. WANI has also

Real lives 7

Sakom reservoir, Ghana. © IUCN/Megan Cartin

Villagers regain autonomy by re-storing their water

Throughout the rainy season of 1999, the villagers watched helplessly as the water reservoir filled and seepages grew into leaks, and they knew it was only a matter of time before the rising waters would burst. It had been built by the government of Ghana in 1965 as a political gift to the region from above. The patronage helped them grow three crops a year: onions and tomatoes in the dry season, rice in the summer rainy season, more vegetables in the fall. People used water in local brick building. They caught fish year round. Trade grew as distant villages brought cattle to drink from the reservoir. For three decades the *tingana*, or land owners, evolved a complex system of land tenure and canals under the chieftainship. Yet no one seemed to know who exactly owned it.

Within months of its collapse, people were forced to travel far and wide to find available water in the dry season. Some moved to the distant river, others fled to cities. Leaders asked various departments to help repair the breach, but public funds were scarce. The village began to implode, putting added stress on water resource use elsewhere. The PAGEV project sought to generate capacity and a sense of ownership among water users and managers throughout the basin, from the ground up. "We sought to build trust, based on more than words and talk, talk, talk," said Aaron Aduna, White Volta Basin Officer in Ghana. "We were looking to measure progress and gain credibility among stakeholders." So with PAGEV funds, the villagers rehabilitated their reservoir. This time, the community took ownership from the start.

"Community consultations and forums were organized" said Ngiba (Assemblyman Representative), "including all the stakeholders: the land owners, assemblyman, the chief, and even women are part of it. So it was a collective will, not autocratic authority. We look and listen and comment one by one by one, so decision-making is democratic."And if the reservoir wall were to fail again in another few years? The villagers say they are preparing for that eventuality; they are taking steps to get a by-law allowing those who are working and benefiting from the water every season to contribute something.. "It is small, small, small amount," said Ngiba, "but enough so we have something reasonable and save it in the bank. So if there is maintenance, we will not look for others, to foreign NGOs, to the District Assembly, or other citizens to help. We can take part of our contribution and put it into the maintenance ourselves."The laws are not yet fixed in place, but accountability has been. Asked who owns the water, the villagers answer: "We do."

supported the establishment of a basin-wide information system by the VBA. IUCN continued to support the VBA in establishing the decentralized institutional framework needed for consensus building and implementation.

First General Assembly of the local Transboundary Committee of the White Volta

In 2010, the 1st General Assembly of the local Transboundary Committee of the White Volta sub-basin (CTGEN) was held. This was the first General Assembly since the protocol was signed in 2008. This transboundary committee was jointly agreed by Ghana and Burkina Faso for the management of the Nakambé sub-basin water resources and aims to rationalize the use of water and prevent water-related conflicts between the two countries.

Transboundary communities

The project was extended into Togo in 2009. Local demonstrations to support roll-out of the basin-wide Strategic Plan continued with 19 participating transboundary communities in Ghana, Burkina Faso and Togo, in the White Volta and Oti sub-basins.

3.3.2 Region-wide dialogue on dams 2009–11

At regional level in West Africa, WANI co-invested in a major Economic Community of West Africa (ECOWAS)-led region-wide dialogue on dams (the 'Regional Dialogue on Large Hydraulic Infrastructure in West Africa'). The ultimate goal of this process is for recommendations from the dialogue to be adopted by the ECOWAS member States, regional institutions and regional River Basin Organizations in their energy and water policies. Within the process, WANI was tasked with convening and facilitating a civil society platform for knowledge exchange and dialogue with governmental and regional institutions.

Civil society fora

Two fora for civil society were held, in Mauritania and Mali, backed by an electronic forum and synthesis report. Training in advocacy was held for civil society participants from 15 countries, enabling strong civil society participation in three ECOWAS-led workshops which brought together civil society representatives, basin organizations and States. Civil society participated in the development of recommendations to an independent expert-review panel which will finalize its recommendations to ECOWAS in 2011. IUCN further supported the process by funding preparation of a report to the Dialogue on decision making and financing of large dams. In partnership with the Global Water Initiative, IUCN supported community exchanges and case studies of governance for benefit sharing from dams. A documentary video was produced for raising awareness of the dialogue process and dams issues in the region.

3.3.3 Okavango Delta (Botswana)

In the Okavango Delta, WANI collaborated closely with the Government of Botswana and other partners, including the

University of Botswana, to coordinate development of the Okavango Delta Management Plan (ODMP). This entailed integrating a range of activities to combine new knowledge, learning, institutional coordination, inter-sectoral cooperation and coordination of decision making at local to basin levels.

Access to information

Access to information was facilitated for all stakeholders by completion of the Okavango Delta Information System, which incorporated the results of a series of assessments on, for example, poverty in the Delta, hydrology and fisheries. A set of sectoral plans was completed, including wildlife, fisheries, livestock, waste management, fire management and tourism, and a strategy for the resolution of conflicts such as human-elephant conflicts. An economic valuation of the Delta was completed and used to guide finalization of the Plan and to promote wider recognition of the contribution of ecosystem services provided by the Delta to the development of Botswana. A shared vision for the future of the Delta was developed through a process in which stakeholders from villages in the Delta and nationally expressed their priorities and aspirations for the Delta.

Institutional coordination

Institutional coordination was key, including among government departments, sometimes with conflicting mandates, and between community, basin and national levels. Community kgotla meetings were used to build community participation in and ownership of the planning process. These were backed by a series of community pilots designed to address priority issues and generate rapid benefits from the planning process for local people. These pilots included projects dealing with:

- channel clearing, to improve access to livelihood resources such as transport and fishing;
- enterprise development for cultural tourism, including training in administration, to support income generation, particularly among women;
- waste management for tourism amenities, to protect water quality.

Communications strategy

As the development of the plan advanced, communications became an increasingly prominent activity. The communications strategy for the ODMP reached from village to the international stage, through community meetings, newspapers, radio, a television documentary and a global awareness-raising event at Stockholm Water Week. Mainstreaming of gender, poverty and HIV/AIDS emerged as important components of the ODMP communications, resulting in both dissemination of relevant information to stakeholders and incorporation of related stakeholder priorities into the ODMP. These actions were backed by on-going and extensive capacity building, both in institutions and communities that promoted shared understanding of the Delta and the challenges it faces, as well as development of new skills needed to implement sustainable management under the ODMP.

Okavango Delta Management Plan

The final management plan for the Delta was accepted by the project steering committee in December 2006 and published in 2008. It was later adopted into the Ngamiland District Strategic Plan and key actions are included in the Botswana National Development Plan 10, covering 2009–2016.

Four years after the completion of the ODMP, implementation is on-going with documented progress on sustainable management and community decision making in the management of the delta's resources. The ODMP was the first of its kind and the lessons learned provide an example for the Transboundary Diagnostic Analysis (TDA) and Strategic Action Programme initiated by the Okavango River Basin Water Commission (OKACOM).

3.4 Governance results – water and climate dialogues

Influencing adaptation policy

WANI included a cross-cutting project that aimed to facilitate access by stakeholders to information on climate change adaptation and to convene regional dialogues with the purpose of mobilizing regional planning and international influence on adaptation policy. The project was carried out in West Africa, Mesoamerica and South-east Asia, with activities including production of regional discussion papers, organization of regional round-tables and evaluation of regional strategies for adaptation and climate resilience. The dialogue processes, involving government civil servants, climate change negotiators, scientists, managers from river basin organizations and water user groups, created informal regional networks on water and climate, as well as considerable media and public exposure.

Regional action plans and international influence

Results created greater awareness and understanding of the issue of climate change adaptation among policy makers and the scientific community. This occurred during the period 2002–2004, when climate change issues were just beginning to gain prominence for most governments and in the water and environment sectors. Regional action plans were prepared that catalyzed programme and project proposals at national and local levels, including through partnerships with WANI demonstration projects. At the international level, the issue of adaptation to climate change and the central role of water resources management was promoted to influence agendas and outputs for, for example, the 3rd World Water Forum, CoP 9 of the UN Framework Convention on Climate Change (UNFCCC), meetings of the Convention on Biological Diversity (CBD) and CoP 8 of the Ramsar Convention.

Building climate resilience for the future

Knowledge and case studies from the regional processes formed the basis for development of the WANI toolkit *CHANGE* (Section 7.3). In the second phase of the Initiative, this toolkit is being revised to reflect the advances in climate

change adaptation in more recent years. The Water and Nature Initiative has learned many lessons from experience gained in the demonstration projects around the world. Applying these lessons to climate change adaptation enables implementation of climate change resilience in practice. Vulnerable 'hotspots', such as low-lying deltas and mega-cities, drylands, small islands, mountains and their rivers will be the global focus areas for building resilience. Under a global IUCN strategy on Water and Climate Change Resilience, IUCN will support national adaptation planning and move to implementation through testing, learning and promotion of innovation to accelerate action on adaptation. In the WANI portfolio, projects in the Himalayas, South America and Oceania have a focus on climate change adaptation through adaptation strategies for local livelihoods and training using the climate change modeling tool (CRiSTAL) to highlight local vulnerabilities to climate change.

3.5 Governance results – West Asia

3.5.1 Azraq Oasis (Jordan)

In Jordan, the project in the Azraq Oasis was completed. WANI has been active in the oasis since 2008, aiming to overcome barriers to solutions for severe groundwater degradation which revolved around governance. Throughout the project, local communities and government representatives collaborated in the planning of water resource management, with particular inclusion of vulnerable groups. An Azraq water resource management committee was established that included representation from all the community-based organizations and local Government representatives at Oasis level. Pilot actions were implemented by partners in close coordination with local committees, including establishment of an experimental farm to demonstrate options for new cropping patterns that are less water-intensive and management of soil salinization. The Ministry of Agriculture will continue to implement these pilots. Results from community-led planning and pilots enabled development of the Water Resource Management Plan for Azraq which was completed in 2010. Jordan is just beginning to wake up to decentralization of water governance and the participatory approaches to water management developed and successfully demonstrated in Azraq will be used to inform national approaches. The experiences and results in the Azraq demonstration have been incorporated into the agenda of the Highland Water Forum, a national initiative which was established under Royal Patronage in Jordan in 2010 and hosted by the Ministry of Water and Irrigation with support from the German Society for International Cooperation (GIZ).

Irrigating alfalfa, Jordan. © IUCN/Claire Warmenbol

3.5.2 Nile River Valley (Egypt)

In Egypt, the WANI project also reached completion. Since 2008, WANI in partnership with the Centre for Environment and Development for the Arab Region and Europe (CEDARE), the Coptic Evangelical Organization for Social Services (CEOSS) and CARE Egypt have been working locally in the Nile Valley. The interventions have been successful in empowering Community Development Associations and local government agencies to develop tools for decision making at water-district level for the best use of water and agricultural resources in the Beni Sueif and Minia Governorates of the Nile Valley. In particular, the project has demonstrated that the highly stratified decision-making structure can greatly benefit from an informed and experimental approach at the village level. CEDARE will continue to lead in working with the Ministry of Water and Irrigation to use results from the demonstration to build a more integrated national approach whereby information sharing and practical demonstrations link national priorities to local development.

4. Economics and Finance

The aim was to improve the provision of water services especially for poorer and vulnerable groups. This was to be achieved through the better integration of ecosystem concerns into public and private water sector investment, development and river basin planning decisions as well as the financial and economic instruments which guide them.

4.1 Economic results – integrating wetland economic values into river basin management

A major hindrance to the integration of environmental economic tools and measures into river basin management and wetland conservation has been the lack of practical experience of their use. Ignoring these tools has contributed to difficulties in implementing, maintaining and financing river and wetland conservation in practice. The need to overcome such omissions was therefore urgent if ecosystem-based approaches to river basin management are to be justifiable investments and support equitable, efficient and sustainable development over the long term. To address this, a cross-cutting project was implemented to build capacity internally and with partners, disseminate information, generate methodologies, and apply measures to integrate economic techniques and tools into wetland and river basin management. The aim was to ensure that environmental economic concerns can be factored into policy, planning and practice in river basin management and that the full value of ecosystem goods and services from wetlands and river basins can be incorporated into broader development planning and investment.

Development and implementation

The project aimed to operate at global, regional and national levels, and in selected demonstration sites in Africa, Asia and Latin America. These demonstration sites were chosen to reflect the needs expressed by partners to identify and enable the application of economic tools, and where wetland

Clouds forming over the Guayllabamba Basin, which supplies the water for Quito downstream. © IUCN/Taco Anema

or basin management plans were in the process of being developed and implemented. Issues addressed included:

- development and application of methods for valuing wetland and water ecosystem services and environmental flows;
- integration of environmental economic costs and benefits into macro-economic and sectoral development planning and statistics, at national, basin and site levels;
- identification of community-level economic incentives for wetland conservation and sustainable basin management;
- identification of pro-poor economic and financial measures that target the most vulnerable households and individuals in wetlands and river basins.

Case studies

Case studies were developed for a set of WANI and other demonstration sites. At each, valuation methods were developed and applied and an assessment was made of economic and financial measures which could be usefully applied (Box 9).

Economic toolkits VALUE and PAY

Theory and lessons from practical application of ecosystem valuation in river basin management were compiled in the WANI toolkit VALUE. Analysis and case studies of sustainable financing and incentives for sustainable basin management were the basis for the WANI toolkit *PAY*, which provided guidance on use of payments for ecosystem services (Section 7.3).

Application of valuation in WANI demonstration sites

The WANI Economics project was instrumental in catalyzing application of economic tools, and learning on ecosystem valuation and sustainable financing, in WANI demonstration sites. Application included:

- use of economic valuation in development of the Okavango Delta Management Plan and in environmental flow assessments in Pangani, Huong and Limpopo;
- application of payments for ecosystem services was assessed in Tacaná and Pangani;
- experience gained was instrumental in supporting the emergence of WANI in South America, where WANI has contributed to development of a scheme (as part of IWRM planning), for payment for ecosystem services in the watersheds supplying water to the city of Quito, under the leadership of the Quito Water Fund.

Piloting payments for ecosystem services (PES)

In Mesoamerica, substantial progress in piloting payments for ecosystem services (PES) was made in 2010, through implementation of the FOGESHIP initiative in the Tacaná watersheds demonstration project (Guatemala, Mexico), through funding from the Dutch Embassy in Guatemala. FOGESHIP is a partnership of stakeholders that has developed a PES mechanism whereby payments for water use are channelled into a fund that will implement watershed conservation activities. This scheme has the potential to become a fully functioning local, stakeholder-led PES initiative. Also in Guatemala, PES has been incorporated in the micro-watershed model that is currently being rolled out in five regions of Guatemala. The 'Confluencias' website hosted by IUCN in Mesoamerica developed a regional knowledge-sharing platform on PES, with PES also incorporated into an online IWRM self-learning course.

Box 9: Case studies

- Kala Oya River Basin, Sri Lanka – valuation of the ecosystem and livelihood benefits of a traditional irrigation system, in order to justify their restoration and water allocation to them, and to identify community financial and economic incentives for their maintenance
- Pangani River Basin, Tanzania – valuation of the downstream use of water, and upstream catchment costs and benefits, to point to basin-wide mechanisms for catchment financing
- Stoeng Treng Wetlands, Cambodia – valuation of the community use of aquatic resources, to point to local-level mechanisms and incentive measures to support wetland conservation
- Terraba-Sierpe National Wetland, Costa Rica – valuation of wetland resource and tourism uses, to point to mechanisms for sustainably and equitably financing protected area management
- That Luang wetland, Lao PDR – valuation of wetland wastewater treatment and food provision services for the urban population of Vientiane
- Indus Delta, Pakistan – valuation of the economic costs of inadequate freshwater flows in terms of downstream saltwater intrusion and local livelihood impacts
- Okavango Delta, Botswana – support to the development of a valuation study, and to training and building awareness on the use of wetland valuation tools
- Huong River Basin, Viet Nam – support to the development of a valuation study, and to training and building awareness on the use of wetland valuation tools

Results to support and provide incentives

Results were used to develop and design and, in some cases, pilot economic and financial measures to support and provide incentives for basin and wetland management. For example:

- in the Kala Oya basin, Sri Lanka, farmer willingness to pay for restoration of small tanks was assessed and integrated into river basin planning;
- in Stoeng Treng wetlands, Cambodia, community-level incentives for co-management were incorporated into a Ramsar site management plan;
- in Terraba-Sierpe wetland, Costa Rica, a sustainable financing strategy and business plan for a protected area was developed.

Case studies were published in the publication *Values and Rewards: Counting and Capturing Ecosystem Water Services for Sustainable Development*, and used in a set of national-level training workshops for government staff, NGOs, donor agencies and academics.

5. Equity and Empowerment

Under the Equity and Empowerment component, the aim was to empower people to participate in sustainable and equitable water management. This was to be achieved through building capacity amongst stakeholders to participate in, and influence, water decision making. This would include an analysis of policies and practices. These could then be used to inform stakeholders about sustainable water management and to promote water management for poverty alleviation and benefits to local livelihoods.

5.1 Empowerment results – learning on collective action

Balancing the interests of competing groups with unequal power is at the heart of sustainable water resource management and IWRM. The challenge of managing water resources is mainly one of governance and one aspect of governance, decentralization, is a critical process for water management. The underlying logic is that democratic local institutions can better discern and respond to local needs and aspirations because they have better access to information and are more easily held accountable to local populations. To understand better how decentralization can be promoted and made operational in practice, WANI led an action-learning project on 'Collective Action for Allocation and Management of Water Resources'.

Decentralization as a critical process for water management

The Collective Action project facilitated testing and learning on decentralization in WANI demonstration basins in Meso-America, Africa and Asia. A synthesis of learning from the project showed the following:

- **Acting collectively is feasible at any scale**
  In Mesoamerica, collective action involved organizing and establishing linkages at four local and regional levels within Mexico (hydrological regions, watersheds, sub-basins, municipalities) and establishing transboundary links at sub-basin levels. In Tanzania, the project established collective action at intra-village level, between villages, within catchments and sub-catchments. In Asia, work concentrated on linking stakeholders in and across villages and working with local government agencies and regional development and water management institutions. In West Africa, the focus was on working at national and transboundary level.

- **When the context is right, all types of stakeholders can be organized to act collectively**
  Government agencies, civil society organizations, municipalities and villages and in the case of Mesoamerica, the business sector, demonstrated they can work together in multi-stakeholder processes for decentralizing decisions.

- **Many mechanisms are suitable for catalyzing decentralized collective action**
  Building capacity and raising awareness, providing technical and legal support, establishing networks, organizing village-level action research, facilitating conflict management and convening decision makers are the mechanisms used to catalyze collective action at various scales.

In addition, the project concluded that decentralizing requires that water planners and managers and stakeholders in general need new skills. Specifically, water professionals need to learn how to work with stakeholders representing a wide range of interests and they need analytical tools such as stakeholder, institutional and discourse analysis to understand stakeholders' motivations and arguments. Stakeholders need to understand the extent to which power structures drive decisions about water resources, how to work in the context of these political processes, and how to influence reforms, water allocation decisions and budget allocations. They also need to understand how to use participatory approaches to influence decision making, how to use the law, and when and how to use campaigns.

Collective action in practice

After completion of the Collective Action project in 2005, numerous examples emerged in the WANI demonstration projects of how decentralization of decision making through empowerment of local stakeholders leads to changes in water management:

- **In Asia**, application of Tai Baan resulted in higher-level decisions over development of water resources being overturned at local level (*see Real Lives 9*).
- **In Mesoamerica**, the micro-watershed committees in El Salvador, Guatemala and Mexico successfully built coordination of water management into community development, where either no such coordination previously existed, or where it was ineffective. These have continued to flourish and grow in the second phase of the Initiative.
- **In Africa**, the transboundary community forum in the Volta created a mechanism for enabling people to defuse transboundary conflicts through their own efforts, without the need for formal diplomatic processes involving national governments. In Tanzania, lessons from the Pangani collective action initiatives will be extended to the Wami Ruvu basin and used in setting up local sub-catchment committees in Uganda and Kenya.
- **In the Middle East**, community organization was also a feature, for example the Azraq Oasis in Jordan where community organizations were integral to building consensus on water use and as a conduit

for all stakeholder voices to be represented in water negotiations.

- **In the Pacific**, in Fiji and Samoa, ensuring local stakeholder participation in the decision-making processes that affect the watersheds and hence local livelihoods, is embedded in the project structures.
- **In South America**, the new WANI projects in Peru and Chile will endeavour to ensure that local stakeholders have a voice in the emerging IWRM plans and approaches.

Toolkit NEGOTIATE – Reaching agreements over water

The toolkit NEGOTIATE which was published in 2010 was one of the outputs that evolved from the work on collective action. This toolkit focuses on constructive engagement and cooperative forms of negotiation in dealing with complex water issues. It emphasizes the role of Multi-Stakeholder Platforms (MSPs) and consensus-building approaches in water negotiations and explains the diversity of agreements that can be utilized in gaining more effective water allocations and uses. Developing negotiating skills and techniques is becoming a strong feature in scaling up WANI-2 transboundary governance approaches in Mesoamerica and Asia. In river basins, negotiation is being used to solve differences over water allocations, for example In the Santa River Basin in Peru, water users all have to agree on water releases as all have to unlock the access to the sluice gates.

Entrance to Hydropower Offtake managed by Lake Parón water users, Rio Santo, Peru. © IUCN/James Dalton

5.2 Empowerment results – Senegal River Basin (Mali, Senegal, Mauritania, Guinea)

Floodplain, Mali. © IUCN/Taco Anema

The challenges of moving from highly centralized governance to more democratic decision making is exemplified by the work on public participation that IUCN led in the Senegal Basin in partnership with the basin organization OMVS. Previously, broad consultation with stakeholders had not been the norm in the Senegal Basin, despite mechanisms for consultation often existing on paper. In the Senegal Basin, a water charter was developed in 2002, but without stakeholder involvement. As a result, few stakeholders had any idea about its contents. In 2006, IUCN worked with OMVS to raise awareness of the Water Charter and the opportunities it provides for participation in decision making. This was accomplished through a series of workshops in all of the riparian countries at both national and community levels with representatives from civil society, the private sector, communities and OMVS. These were backed by broader communication to the general public of the need for integrated management of the basin and the benefits of participation, through the media and publications, including in local languages.

Facilitating dialogue between the basin organization and civil society

Awareness of the Water Charter is not on its own enough to create genuine engagement in decision making. Trust is also crucial. In 2006, the project made particular progress on facilitating dialogue between OMVS, civil society organizations and the scientific communities in the riparian countries. This resulted in agreement of 'terms of engagement', in which all parties shared an understanding of their responsibilities and expectations from participation. These steps, plus development of national and local coordination committees in the basin, are being put together to create enduring mechanisms for dialogue over management of the basin that will assist OMVS in contributing more substantially to development. In 2008, transboundary dialogue under the project reached higher levels. The OMVS, Transnational Management Committee for the Biosphere Reserve of the Senegal River Delta, parliamentarians from Senegal and Mauritania, local NGOs and experts convened to address such issues as the problem of access to water in the management of the Djoudj and Diawling National Parks as well as the functioning of the dams and water politics in the river basin.

6. Knowledge and Information

The objective of the Knowledge and Information component addressed the creation and sharing of knowledge to support decision-making. It also aimed to generate knowledge and the translation of existing information into formats that were accessible to water policy makers and water managers. This would also address the information gap by supporting the development of baselines and benchmarks for environmental indicators.

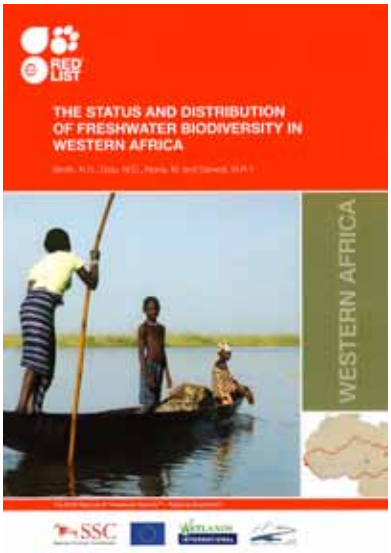
6.1 Knowledge results – freshwater biodiversity assessments

WANI supported completion of the freshwater biodiversity assessment, *The Status and Distribution of Freshwater Biodiversity in Eastern Africa*, in 2004. Data from the assessment contributed to the preparation of the 2006 *IUCN Red List of Threatened Species*, to help highlight the links between biodiversity losses and impoverishment of livelihoods. Further assessments were carried out by IUCN in the Mekong basin and the Congo basin. These assessments provide baseline data for monitoring of biodiversity impacts of river basin development by basin organizations and, in Congo for example, have assisted with development of a new basin organization. Results from the Eastern Africa assessment were similarly used to support the Nile Basin Initiative.

6.2 Knowledge results – Niger basin: analysis and assessment

In the Niger basin, a situation analysis and assessment of threats to the condition of the river, water-related livelihoods and economic development was completed in collaboration with partners. The study concluded that information provision and data management were key constraints in the development and implementation of IWRM in the basin. The authors recommended that a basin information system should be built to consolidate data and knowledge and ensure accessibility. Institutional capacity building is needed to help ensure on-going processes to decentralize water management and to facilitate transboundary cooperation. These should be complemented by efforts to strengthen the role of civil society in water decision making. There is finally a need to focus these actions on support for application of environmental flows in the basin, so that a strategic approach to allocation of water in the basin among water users and the environment can be developed and implemented.

WANI-2 supported the dissemination of approaches to restoration of flooded forest ecosystems in the Inner Niger delta of Mali that IUCN and partners had demonstrated successfully over the last several years, including the development of participatory management planning in four pilot districts in the Delta. Demonstrated benefits of restoration for livelihoods, fish biodiversity and conflict resolution have mobilized high-level political support in Mali and WANI supported the publication of lessons learned from restoration in the Delta. This publication is an inception activity in a scaling-up initiative that will support a new long-term nationwide programme for management and restoration of the Delta that is led by the Ministry of Environment, with support from the Royal Netherlands Embassy in Bamako. The key recommendations of the situation analysis are being addressed in the basin through preliminary discussions between the Basin Authority, Development Banks and NGOs.



7. Communication, Learning and Coordination

The objective of the Communication, Learning and Coordination component was to address the communication challenges through the development and implementation of effective communications strategies at project, national, regional and global levels. Coordination of the Initiative was aimed at providing the mechanisms and structures to administer and manage the Initiative portfolio.

7.1 Communication

Communication activities and products assisted the Initiative in promoting communication with key constituencies both internally and external to the Initiative. Internal communication and effective coordination of the Initiative was essential in establishing a structured learning process and generating the lessons learnt. In the early years of WANI, communications focused on building the visibility of the Initiative through participation in global water events such as the World Water Forums. As the Initiative expanded, new partnerships were developed with non-traditional IUCN partners such as the International Water Association (IWA) and the International Hydropower Association (IHA) to showcase WANI results and approaches through these and other global venues.

Photography and video have increasingly been used to highlight water issues for example the 'Tales of Water' publication used photography and video from WANI demonstration sites to communicate the realities of water management and its effects on livelihoods and community life through the eyes of children. These images and others commissioned across the portfolio have provided visual tools around which to promote results and messages. Highlighting on-the-ground affects on daily lives has resulted in a series of 'real lives' articles (as illustrated) and short documentary films, for example the Pangani and Tacaná projects were the subject of short documentary

Inner Niger Delta, Mali. © IUCN/Taco Anema

films made for the Earth Report series on BBC World. Regionally, video techniques have been used to capture local innovation and change. This is a particular feature in Mesoamerica, Asia and the Middle East. In Mesoamerica this has been combines with an interactive web portal to disseminate information and stimulate adaptive learning.

'Confluencias' website

In Mesoamerica, the 'Confluencias' website (www.confluenciasagua.net) is one of the main mechanisms through which the results and lessons learnt from WANI are disseminated in Mesoamerica and, increasingly, in South America. In 2010, there were on average 800 hits per month with users from 45 countries. In 2010, regional training on IWRM was stepped up with a focus on the development of a leadership and learning network for IWRM to support diffusion across the region. A workshop for local basin managers was held in Costa Rica, with 80 participants from six Mesoamerican countries, providing training and enabling exchange of experiences on application of the micro-watershed approach to IWRM implementation in the region. IUCN continued to engage with other partners, such as the Global Water partnership (GWP) as well as with the Global Water Initiative, which is now investing $1 million per year in each of Guatemala, Nicaragua, El Salvador and Honduras to implement the micro-watershed management strategy for IWRM.

In the second phase of the initiative, participatory video, which gives the camera and a voice to local people, has become a useful and interactive WANI communications tool. This has provided tailored, message-specific material both for regional and global communications. This participatory approach has been used in projects in the Middle East and West Africa, including training local project coordinators to use this media tool.

Participatory video, Tanzania. © IUCN/Claire Warmenbol

7.2 Managing knowledge

To consolidate and strengthen communications in the second phase of WANI, a communication strategy was developed which linked synthesis of the vast amount of information and data with tailored outputs. A new website for the Initiative was developed (www.waterandnature.org) (Box 10).

Box 10. Water and Nature website

The Water and Nature website provides a knowledge platform for WANI, by placing existing and new technical reports, toolkits, case studies and policy guidance from both WANI-1 and WANI-2 in a single, navigable, online location. Technical and policy information from WANI is complemented by stories and videos that make the experience and evidence for how IWRM can be implemented in practice accessible not just to specialists but also parliamentarians, policy makers and journalists.

7.3 Leadership and learning

A learning strategy was integral to the first phase of WANI and integral to the demonstration projects. This was applied to the development of WANI teams internally and to project partners and stakeholders. This strategy combined social learning and more formal training processes, incorporating exchange of experience, story-telling and learning-by-doing, as well as workshops for capacity building. Learning using combinations of these approaches featured explicitly in project strategies across the WANI portfolio.

The WANI Toolkit series

A very prominent and key component of the WANI learning strategy was the WANI Toolkit series (see Box 11). This was developed to support learning on how to mainstream an ecosystem approach in water resource management. Aimed at practitioners, policy makers and students from NGOs, governments and academia, the series built on practical case studies to show how key principles of sustainable water management are implemented in river basins. The toolkits cover the management of flows, governance, economics and incentives, adaptation to climate change, and key issues in water governance. Toolkits were published as books and backed by online case studies. Hard copies of books were widely distributed for free to users, policy makers and managers in governments, river basin management

organizations and NGOs. Toolkits are also freely available for download from the IUCN website. The series presently comprises seven titles, with an eighth in production, SPRING, which will feature approaches and solutions to groundwater management. The toolkits have been, and continue to be, widely used across the portfolio as a tool to promote concepts and approaches. They are used as training tools to introduce new and complex concepts and examples in an accessible format to audiences ranging from local stakeholders to government ministry representatives.

Toolkit series:

CHANGE - Adaptation of water resources management to climate change

Climate change is here and will be with us for the long term. The challenge facing water professionals is how to make decisions in the face of this new uncertainty. This book outlines a new management approach that moves beyond technical quick fixes towards a more adaptive style that is inclusive and innovative. Only by thinking, working and learning together can we tackle the impacts on water resources and uncertainties induced by climate change.

FLOW – The essentials of environmental flows

This guide offers practical advice for the implementation of environmental flows in the river basins of the world. It explains how to assess flow requirements, change the legal and financial framework, and involve stakeholders in negotiations. FLOW sets out a path from conflict over limited water resources and environmental degradation to a water management system that reduces poverty, ensures healthy rivers and shares water equitably.

VALUE – Counting ecosystems as water infrastructure

This practical guide explains the most important techniques for the economic valuation of ecosystem services, and how their results are best incorporated in policy and decision making. It explains, step by step, how to generate persuasive arguments for more sustainable and equitable development decisions in water resources management. It shows that investments in nature can be investments that pay back.

PAY – Establishing payments for watershed services

Payments for watershed services are an emerging innovation in water management. This guide offers a hands-on explanation of the issues that need to be addressed when establishing these payment schemes. It explains what watershed services are and what their value is. It then highlights the technical, financial, legal and social aspects of establishing payments schemes for maintaining or restoring watershed services critical for downstream water security.

SHARE – Managing water across boundaries

This publication provides an overview of the world's shared water resources and insights for managing these resources. Using case studies from around the world, it describes the benefits to be gained from cooperation and the challenges of constructing legal frameworks, institutions, management processes and financing and partnership strategies to govern transboundary waters equitably and sustainably.

RULE – Reforming water governance

Effective water governance capacity is the foundation of efficient management of water resources. Water governance reform processes must work towards building capacity in a cohesive and articulated approach that links national policies, laws and institutions, within an enabling environment that allows for their implementation. This guide shows how national water reform processes can deliver good water governance, by focusing on the principles and practice of reform. RULE guides managers and decision makers on a journey which provides an overview of what makes good law, policy and institutions, and the steps needed to build a coherent and fully operational water governance structure.

NEGOTIATE – Reaching agreements over water

This publication will help water practitioners to negotiate workable agreements about how to best use, manage and care for water resources. NEGOTIATE makes the case for constructive engagement and cooperative forms of negotiation in dealing with complex water issues. It unpacks constructive approaches such as Multi-Stakeholder Platforms (MSPs) and consensus building, and finally focuses on the diversity of agreements which can be produced to regulate or encourage fairer and more effective water allocation and use.

Toolkit translations

Translations of many of the WANI toolkits were completed to increase access and uptake, and as a means of building national-level ownership of new concepts in water resources management. *FLOW* is the most widely translated (Box 11). In each case, the process of translation was a partnership between IUCN and an inter-disciplinary national working group. Translation was thus used as an awareness-building and capacity-building process for key national stakeholders, to lay a foundation for subsequent dialogue and uptake. Translation has been strategically driven, responding to local demand.

Structured learning and networking

The Toolkit series and experience gained from WANI demonstration sites was the basis for a partnership between WANI and the GEF IW:LEARN project. IW:LEARN was set up to provide capacity building for GEF International Waters projects, including project personnel, but also managers and senior policy makers in government agencies and river basin commissions. As leader of the river basin learning component of IW:LEARN, WANI delivered a series of regional learning workshops for participants from GEF International Waters projects and from IUCN's own members and networks. Three workshops were staged: the first on valuation of ecosystem services, based on *VALUE*, in Africa; the second on environmental flows, based on *FLOW*, for Latin America and the Caribbean; and the third, on payments for ecosystem services using *PAY*, in Asia.

Networks are integral to the WANI learning strategy, as a means of bringing the knowledge from research and the results of demonstration sites to wide audiences of users and to thus catalyze new standards for water resources management. As a result, the aim is to associate all WANI toolkits with networks, to scale up learning and reach new key user groups. As a result, IUCN and a consortium of core partners including WWF, TNC and SIWI launched the Environmental Flows Network. The network aims to provide a platform for exchange of information and experience and a portal for access to literature and technical expertise. The network has a website (www.eflownet.org) and has convened a series of international meetings at major conferences to promote dialogue, exchange reflection and learning on environmental flows methodologies and applications. Development of the global network has led to the emergence of regional environmental flows networks in Southern Africa and Latin America, and under development in Asia. The network consortium now comprises in excess of 10 organizations, an international steering committee and has more than 1200 individual members. The network aims to invite participation and exchange from across sectors, including dialogue and learning with sectoral groups from agriculture, hydropower and development, as a means of building consensus and scaling up demand for application of environmental flows.

Regional learning initiatives to initiate change based on experience and adaptive management

In Oceania, under WANI-2, IUCN is strengthening its partnership with the GEF Pacific IWRM project, including at regional level in identifying opportunities to support region-wide learning on implementation of ecosystem-based water management. This has led to the development of the Pacific Leadership and Learning project to address specific requests by Pacific island countries for learning support to complement their GEF project. In West Asia, the project 'Strengthening Local Leadership in Local Water Governance: Scaling up IWRM in the Middle East Region' was developed. The project will co-finance the EC-funded project 'Social, Ecological and Agricultural Resilience to Climate Change in the Mediterranean Region' (SEARCH), which will build on WANI-2 demonstrations in Jordan, Egypt and Palestine (with components also in Lebanon and Morocco). SEARCH incorporates capacity development for communities as well as government staff working at district, governorate and national levels and will develop and implement demonstrations of climate resilience through change in water management.

Stimulating policy-level change

In WANI-2, this component was consolidated as experience and lessons learnt from the demonstration projects were applied in developing national and regional strategies. The emphasis is on developing tailored learning and outreach combined with the development of a network of champions to take new ideas and approaches to water management forward. The aim is to stimulate a change in thinking based on experience and adaptive management that can result in policy-level changes in how water resources are managed that is relevant for the 21st century.

Partnerships

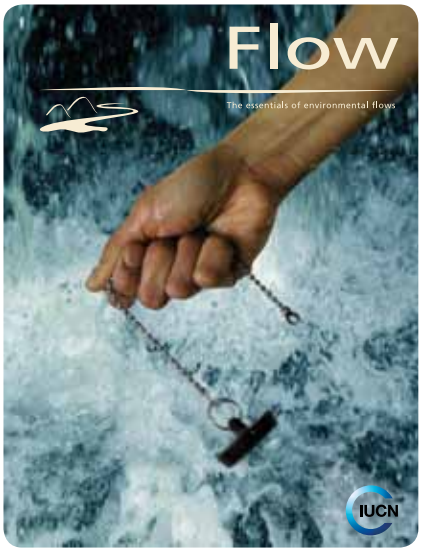
Partnerships have been essential for the Initiative to deliver, and WANI has worked with approximately 130 partners worldwide, of which about 20 percent were IUCN Members. These myriad partnerships included government ministries, NGOs, research organizations and the private sector. It is through these partnerships that some key concepts of IWRM implementation demonstrated in WANI have been adopted in regional strategies. An example of this is the partnership with the Global Water Initiative, which is providing long-term financing for the on-going roll-out of WANI-demonstrated approaches to water governance reforms, water management and policy advocacy in 13 countries in Central America, West Africa and Eastern Africa. New partnerships with key water sector actors have also been developed to promote joint learning and policy advocacy on water services and ecosystem-based water resources management. An example is the emergence of a joint initiative involving the International Water Association (IWA), IUCN, The Nature Conservancy (TNC) and others on cities and their basins, which aims to develop a community of practice, investment analysis and potentially joint demonstrations of integrated management of water resources for basins and cities.

WANI has been active in global water issues through its partnerships with organizations such as the World Water Forum and close involvement with the agenda for global water fora. Collaboration with partners has been a feature of lobbying for better integration of water management into the negotiations on global issues such as climate change adaptation under the UNFCCC at the Conferences of the Parties (COP).

7.4 Coordination

A diverse and global portfolio requires good, central coordination. Over the years of the Initiative, considerable effort was made to develop streamlined and efficient administrative processes that were able to deliver a coherent project portfolio. A standardized framework was developed to ensure that projects were aligned with the WANI objectives and could be efficiently monitored, although monitoring the outputs and results of the portfolio was somewhat of a herculean task. In the second phase of the Initiative, a more focused reporting and monitoring framework was initiated in order to capture results and outputs against a defined set of benchmark indicators. The annual coordination team meetings were essential for defining and reinforcing the WANI objectives and exploring approaches for problem solving and delivery. The demonstration experience aspect of the meetings was invaluable in looking at problem solving and adaptability on the ground as well as an opportunity for regional coordinators to share experiences.

The WANI toolkit series



Also available in: French/Spanish/Portuguese/Khmer/Thai/Lao/Burmese/Vietnamese/Chinese/Arabic

Also available in: Spanish/Arabic

Also available in: Spanish/Chinese

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.

FLOW – The essentials of environmental flows
PAY – Establishing payments for watershed services
VALUE – Counting ecosystems as water infrastructure
CHANGE – Adaptation of water resources management to climate change
RULE – Reforming water governance
SHARE – Managing waters across boundaries
NEGOTIATE – Reaching agreements over water
SPRING* – Managing groundwater
To download books free of charge go to:
www.iucn.org/resources/publications

(*under development)

Also available in: French/Spanish

Also available in: Spanish

Also available in: Spanish*/Vietnamese*/Lao*/Khmer*/Russian

Also available in: Spanish*/Vietnamese*/Lao*/Khmer*

8. Summary of Outcomes Achieved

The IUCN Water and Nature Initiative set out to "mainstream an ecosystem approach into catchment policies, planning and management" using a demonstration logic in which 'learning-by-doing' in river basin projects was the basis for catalyzing change in water management practice and policies. It was envisaged in 2000 that progress would come by combining work on six strategic objectives (later combined into four), to open new access to knowledge and information, reform governance of water resources, apply economic tools and empower people in decision making through decentralization and 'democratization' of water management. WANI was designed explicitly to support IWRM implementation in practice and to move away from a view of IWRM dominated by expert-driven, institutionalized planning, in which the ingredients of IWRM are packaged as discrete technical outputs. The challenge was thus to mix these ingredients and apply them together to real-world problems occurring in real-world systems.

The first phase of WANI tested implementation of IWRM using an ecosystem approach in 12 river basins globally, and thus in different contexts – whether climatic, economic, social or political. The second phase of WANI is active in a further eight river basins or catchments. Outcomes achieved by WANI are summarized in Map 1.

The main outcomes encompass:

1. **New national policies on water resources management developed or implemented in five countries with support from WANI.**
   National policies on water resources management incorporate democratization of decision making, environmental flows and/or the costs and benefits of ecosystem services for poor people – Tanzania, China, Viet Nam, Botswana and Mexico.

2. **Multi-stakeholder platforms empowered to reform governance of river basin management in seven national and international basins.**
   Charters and codes of conduct for coordinating and integrating management of water resources negotiated, resulting in resolution of conflict, sharing of benefits, new investment and restored ecosystem services – Barra de Santiago-El Imposible, Volta, Komadugu Yobe, Pangani, Okavango and Songkhram.

3. **Basin-level water management fora or basin organizations are accountable to new community-level institutions in 11 demonstration sites in 30 countries.**
   New community-led institutions are empowered to make decisions and represent local views and development priorities in higher-level fora – Tacaná, Barra de Santiago-El Imposible, Senegal, Volta, Komadugu Yobe, Pangani, Okavango, Songkhram, Attapeu and Upper Mekong.

4. **New partnerships for sustainable development of water resources bridge old divides between environment, economy and poverty reduction in nine basins.**
   Dialogues on basin development bring diverse local communities, civil society, basin organizations and national economic decision makers together to jointly formulate and develop new mechanisms for water resource management – Mekong, Huong, Senegal, Volta, Komadugu Yobe, Tacaná, Pangani, Okavango and Limpopo.

5. **New international treaties signed or new institutions for transboundary cooperation established in nine basins with WANI support.**
   Support for dialogue and negotiation between States results in new mechanisms for trans-boundary cooperation on basin management – Tacaná, Senegal, Komadugu Yobe, Okavango, Limpopo, Himal and Mekong – and new international treaties in Volta and Lake Tanganyika.

6. **New income-generating activities for poor people in five demonstration basins result from combining water resources management with enterprise development.**
   Support for innovation in water resources management by local stakeholders creates new opportunities for development of small-scale enterprises that build value in communities from sustainable water management – Barra de Santiago-El Imposible, Volta, Komadugu Yobe, Okavango, Attapeu and Stoeng Treng.

7. **Poor people obtain new assets for sustainable livelihoods to reduce poverty in communities in 11 countries.**
   Pilot projects in demonstration sites use better management of ecosystem services to improve income, food security, water supply, health and nutrition, in combination with increased social capital and technical capacities, to reduce poverty in communities – El Salvador, Mexico, Guatemala, Burkina Faso, Ghana, Nigeria, Tanzania, Botswana, Lao PDR, Cambodia and Thailand.

8. **Poor people are less vulnerable to climate risks and disaster because of environmental flows and restoration of ecosystem services in five basins.**
   Environmental flows and restoration of ecosystems support allocation of water to the environment and mitigation of flood and drought, to reduce livelihood risks for poor people – Tacaná, Komadugu Yobe, Pangani, Limpopo, Songkhram and Attapeu.

9. **Toolkits drive innovation and scaling-up of successful water resources management that integrates ecosystem services, economics, incentives, governance reform and empowerment.**
Learning and networks build knowledge, ideas and partnerships needed to empower stakeholders to innovate and manage change – for example using the WANI toolkits FLOW, VALUE, PAY, SHARE, RULE and CHANGE.

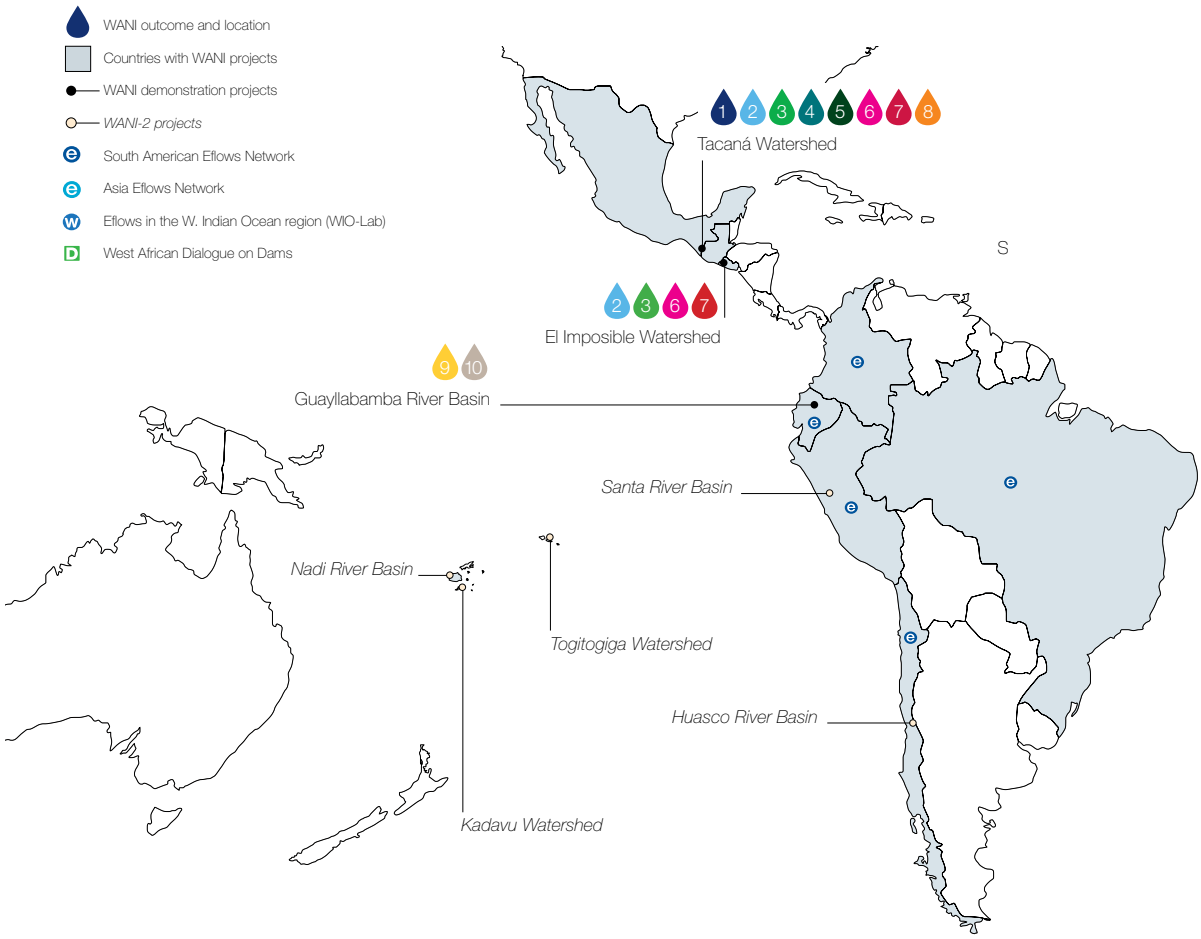
10. **Major new financing commitments by national governments mobilize action on restoration and sustainable management in at least three countries.**
Sustainable financing mobilized by governments in Nigeria, Tanzania and Botswana to support on-going implementation of IWRM initiated in WANI demonstration sites.

MAP 1

What has WANI done?
The map illustrates 10 of the many achievements of the WANI projects around the world and illustrates new WANI-2 project locations. Each project has different results depending on local needs.

1 New national policies on water resources management developed or implemented in 6 countries with support from WANI in 5 river basins. National policies on water resources management incorporate democratization of decision making, environmental flows and/or the costs and benefits of ecosystem services for poor people.

2 Multi-stakeholder platforms empowered to reform governance of river basin management in 7 national and international basins. Charters and codes of conduct for coordinating and integrating management of water resources negotiated, resulting in conflict resolution, benefit sharing, new investment and restored ecosystem services.



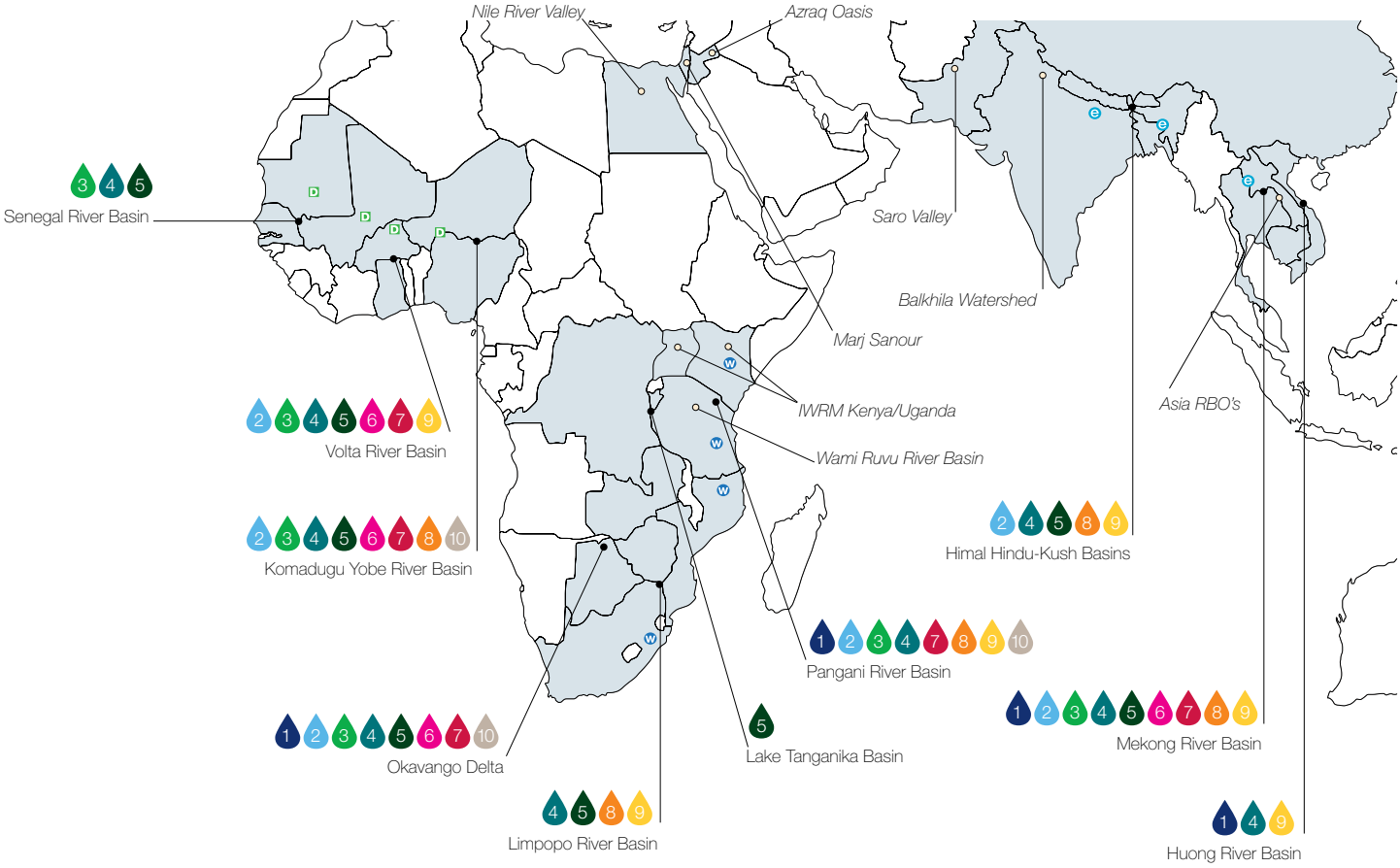
6 New income generating activities for poor people in 5 basins result from combining water resources management with enterprise development. Support for innovation in water resources management by local stakeholders creates new opportunities for development of small-scale enterprises that build value in communities from sustainable water management.

7 Poor people obtain new assets for sustainable livelihoods to reduce poverty in communities in 7 basins in 11 countries. Pilot projects in demonstration sites utilise better management of ecosystem services to improve income, food security, water supply, health and nutrition, in combination with increased social capital and technical capacities, to reduce poverty in communities.

3 Basin-level water management forums or basin organisations are accountable to new community-level institutions in 11 demonstration sites in 8 river basins in 30 countries. New community-led institutions are empowered to make decisions and represent local views and development priorities in higher level forums.

4 New partnerships for sustainable development of water resources bridge old divides between environment, economy and poverty reduction in 9 basins. Dialogues on basin development bring diverse local communities, civil society, basin organisations and national economic decision makers together to jointly formulate and develop new mechanisms for water resource management.

5 New international treaties signed or new institutions for trans-boundary co-operation established in 9 basins with WANI support. Support for dialogue and negotiation between States results in new mechanisms for trans-boundary cooperation on basin management.



8 Poor people are less vulnerable to climate risks and disaster because of environmental flows and restoration of ecosystem services in 5 basins. Environmental flows and restoration of ecosystems supports allocation of water to the environment and mitigation of flood and drought, to reduce livelihood risks for poor people.

9 Toolkits drive innovation and scaling-up of successful water resources management that integrates ecosystem services, economics, incentives, governance reform and empowerment. Learning and networks build knowledge, ideas, and partnerships needed to empower stakeholders to innovate and manage change – for example using the WANI toolkits FLOW, VALUE, PAY and CHANGE.

10 Major new financing commitments mobilise action on restoration and sustainable management in at least 4 countries. Sustainable financing mobilsed in Nigeria, Tanzania, Botswana, and Ecuador to support ongoing implementation of IWRM.

9. Lessons Learned: Building Blocks for Future Investment

Many lessons have been identified from across the portfolio over the years of the Initiative. From these, several themes can be seen to be relevant across the Initiative and it is from these that the major lessons have been learnt and approaches and behaviour adapted accordingly. These lessons can be seen to be the cornerstones of successful implementation and the building blocks that lead to successful outcomes.

1. Implementing demonstration projects has given credibility to WANI principles and processes

This has completed the circle from the initial philosophy and approach to practical demonstration that has reinforced the value of the principles and approaches. Due to the impact of the projects in the field and in some cases at national level, WANI became more a 'way of working' than a theoretical strategy or a series of isolated field projects. Implementation across seven regions has shown that the principles and approaches are universal. This has allowed IUCN to position WANI principles not just in the first WANI field projects but in other projects and sectors.

Selecting the principles and approaches according to their suitability for the project, rather than a rigid, prescriptive structure, enabled a more adaptive management approach that was more focused towards a learning-by-doing course of action. This has resulted in more focused, adaptive and relevant impacts and outcomes. Scaling up the demonstration projects in the second phase has required a concerted effort to implement and is still on-going. However, this process of evolution has elevated WANI projects from being largely stand-alone, isolated and local interventions to more integrated actions with national and potentially supra-national relevance and influence.

Children returning from washing dishes, Mali. © IUCN/Taco Anema

2. Size and complexity are major issues as it is much more difficult to generate longer-term impacts at larger basin scales

This is compounded by the issue of time as many of the changes WANI is trying to bring about occur on longer time-scales of 5–10 years. An initial 2–3 year project has to 'think' like a 5–10 year project. If the aim is to invest in basins for the medium term of 5–10 years, then the initial phase should be small-scale, both in terms of the scope of the intervention and the budget. Smaller activities at the outset allow testing of partnerships and the establishment of working relationships, before too much is committed and adaptive changes can be made. This allows better understanding of the issues on the ground, which are vital in the design of the larger-scale interventions that will evolve.

3. It is essential to work at multiple scales to have lasting impact

To have any lasting impact, WANI had to work at all strategic levels. At the local/community level: the importance of on-the-ground, tangible field interventions cannot be underestimated. At the basin level, water resource managers are crucial and need cultivating and supporting. The national-level involvement of relevant ministries and institutions is needed as government involvement has been key to the success of many projects and has aided the promotion of scaling up and replicating to national level. It is crucial that as projects progress it is national institutions that are seen to promote basin interventions rather than IUCN and its partners.

4. Alignment of activities with national priority areas and linkages with government policy processes are needed for larger-scale impacts

Alignment of activities with national priority areas where possible and applicable, is advantageous and allows scaling-out to other basins. Linkages with government policy processes can result in acceptance and 'ownership' of WANI interventions at high levels. Political commitment is very important and key to the success and uptake of project work and allows for recommendations to be fully integrated into district and national development plans and strategies. Regional economic groups (such as SADC, OKACOM and ECOWAS) provide the political hardware and infrastructure to support transboundary collaboration because through association, countries have already pledged, at the highest levels, to work together. Demonstrable results and applicable IWRM approaches, coupled with a conducive national political situation and with propitious timing, can be instrumental in influencing national water policies and new water laws.

5. Local people have to see short term tangible benefits, if they are to support longer-term actions

One of the challenges of the demonstration projects has been to promote sustainable use of resources without limiting or restricting the income-generating activities of poor communities. Poverty reduction is a driving force in many of the WANI sites, from the villager level to the government ministry. Projects have had to demonstrate to stakeholders that conservation of resources and ecosystems can result in an improvement in their livelihoods. Stakeholders and partners are more willing to participate when they see that their situation has changed for the better. The portfolio has shown examples of achieving this, for example through small-scale income generation schemes, water supply facilitation and conflict reduction. These interventions provide incentives to persevere with longer-term, potentially risky, less tangible concepts such as IWRM and wider governance issues. Tangible results are therefore important in gaining legitimacy for interventions. Addressing some of the issues that are important to the community even if they are not directly project-related, will help considerably in gaining local trust and focus. This will then make development of the larger issues and wider scope of the project more accessible and relevant.

Good socio-economic studies are an integral part of many projects and must complement the IWRM and hydrological aspects. If livelihood interventions are planned, the appropriate expertise is needed, especially if these aspects are to be scaled up. Such interventions need to be done with care and appropriately monitored and discontinued if not delivering. Several years of practice and data are needed if the intervention is to be seen to be sustainable beyond a one-off activity. Developing partnerships with local development NGOs greatly facilitates more robust and targeted interventions, that will continue beyond the WANI interventions.

6. Developing local governance and organizational structures has benefited and complemented IWRM actions

Integrating communities and their social structures into micro-watershed (or similar) committees leads to greater cohesion and unity. These types of committees give members control over their resources. As more are formed, the influence becomes basin rather than locally focused with a greater awareness and contribution to IWRM interventions. Community-level participation in transboundary water resource management is achievable and adds value to conventional transboundary approaches. Facilitation of community-based management actions has demonstrated that planning and implementation of IWRM can be successfully shared between communities across boundaries. Local 'champions' also play a vital role in disseminating best practice from site to site using their profile and ability to successfully translocate experiences to their peers and the wider context. Community customary laws need to be systematized and incorporated into public policies at local levels. Common practices and local standards for ecosystem management can be identified by working in partnership with local communities. Such customary law is often overlooked because their effectiveness is under-rated, even though they can be less divisive and more internally consistent at local level than formal laws.

7. Collective action on water governance is a complex and challenging task, demanding that the institutions involved receive support and opportunities to build capacity

Synthesis of collective action projects at multiple levels demonstrated that the institutions and the people involved needed new skills in facilitating stakeholder empowerment in negotiation, decision making, management implementation and conflict resolution. Investment of time and resources in building these skills is therefore needed for genuine and successful democratization of water governance. Village-based action research can be scaled up and replicated to strengthen the use of IWRM to meet the needs and priorities of local people, but it must be adapted to local contexts. The process of replication should itself use the principles of action research to adapt the approach to the social and cultural context of other locations. The benefits of village-based research should be clear and visible to villagers, ownership should rest with villagers and results should be transparent. The long-term aim should be to incorporate local knowledge and resource use into water resource planning at higher levels.

8. Incorporating new economic tools into river basin management is complex and time-consuming

Incorporating new economic tools into on-going wetland and river basin management is complex and requires time to build awareness, understanding, enthusiasm and acceptance. The time needed to build partnerships, conduct valuation studies and establish support and understanding for economic tools needs to be built into projects in phases. These steps form the platform for moving to recommendations on economic and management tools for IWRM and subsequent implementation. The injection of new disciplinary skills into project teams to accommodate economic assessments and tools is an opportunity to institutionalize the required skills and expand institutional capacity. Where external economic consultants were used to supply new skills for valuation studies, long-term institutional capacity building was not achieved. To move from recommendations to functioning economic incentives and payments schemes is difficult, requiring that a specific set of conditions are in place, and there is only one WANI-influenced example of this. However, it is essential that economic tools are further developed and pilot schemes attempted as there is increasing awareness of the importance of economic incentives in water management.

9. Stakeholder relationships are the key to successful integrated planning and management of water resources and must be sustained

Stakeholders are vital to integrated planning and management of water resources, whether from government or other organizations, and they must have the time and motivation to fully contribute. This must be supported and facilitated by appropriate structures and political will at all levels. Where this does not exist, there is a need to build the necessary cooperation and collaboration through negotiation and collective action, which takes additional time. Building stakeholder ownership of IWRM is complicated, but the investment of time results in greater contributions to the proposed actions, helping to create a platform for implementation. To achieve the primary goal of the Initiative, it was necessary to show that 'change' did occur: that stakeholders had access to, and a voice in, sustainable water management and that there was a demonstrable link to an improvement in livelihoods.

When the initial WANI projects were coming to an end, a careful exit strategy was needed. This allowed time for the stakeholders to take the necessary steps to take control of the project and to identify issues that needed to be addressed such as capacity building and financing. It is also important that work with partners will continue after the life of the WANI project, thus ensuring that interventions are sustainable in the longer term. Local stakeholders are often asked to invest heavily in interventions, frequently taking a lot on trust and hence a lot to lose if results do not materialize. It is essential therefore that their investment of time and resources is returned, even if this is envisaged beyond the initial WANI phases.

10. Multi-stakeholder participatory processes help to mobilize partnerships and relationships that are the basis for the long-term sustainability of interventions

The complexity of coordinating and integrating multiple partners in dialogue and negotiation costs time and may slow progress. However, establishing partnerships and mutual understanding between, for example, ministries, local government, NGOs and civil society, is vital to long-term action. These partnerships are the basis for the sustainability of projects after external facilitation ceases.

Decision making by multi-stakeholder processes is made easier when organizations share a common framework for action. Building mutual respect between organizations is essential to maintain effective participation. The emergence of common objectives leads to shared interests that then assist participating groups in arriving at decisions that all can agree on and support in implementation. Building trust is an important step in any cooperative approach to river basin management and this takes time. Where groups have been excluded from decision making over basin management, there is often mistrust. Time is needed to create the space needed for dialogue to occur between parties, leading to identification of the real concerns people have and to allow an effective action plan to be developed. Any dialogue will raise or create expectation. If a dialogue is launched by organizations that do not have the mandate or resources to support it, it will fail to meet expectations which will erode trust in the process. It is very important to link with institutions which have the capacity and the resources to support and sustain the momentum.

11. Building a local knowledge base with good data and information systems is important in deciding the most efficient allocation of resources

Building a local knowledge base with good data and information systems allows a thorough understanding of the relationships and scenarios within the basin such as water availability, trends, demands and conflicts, and can then lead to better management decision making. An efficient and reliable data repository can result in more motivated

data collection amongst project agencies as this is an incentive to collect and keep proper records of hydrological and other relevant data and information. Improving the technical and conceptual capabilities of stakeholders and managers increases their understanding of the environment in which they are working and develops their capacity to undertake better management of their resources. Data and information collected should be freely shared amongst stakeholders. Transparency and sharing can be an issue, when information is seen as a national and/or commercial asset and mechanisms need to be developed to manage this. This is particularly acute at the transboundary basin level and requires a regional approach through more integrated governance structures such as basin authorities. Regional IWRM requires a coherent national to regional focus and standardized data mapping and harmonization of scales is needed nationally. This is not an easy task, but is essential for regional policy approaches to succeed and the process is a step towards bringing relevant groups, expertise and institutions together.

12. For the environmental flows concept to evolve from theory to practice, a common conceptual understanding among all stakeholders is absolutely necessary

Translating *FLOW* into regional languages (11 to date) has helped considerably to break this barrier, both in terms of the participatory process of translation and in use of the translations at the local level. Environmental flows applications and translations deliver more than project milestones, as they help to mobilize partnerships and relationships that are the basis for the long-term sustainability of interventions. Widening the scope of environmental flows from a scientific concept to a water management approach is challenging. Careful preparation and building trust amongst partners is critical in such a transition. Environmental flow is attracting great interest from water managers and politicians alike. Generating and discussing the impacts of alternative scenarios is a socio-political process, not just a matter for technical experts.

Establishing adaptive management is a critical aspect of environmental flows. An environmental flow regime is not an absolute: it may need to be adapted and modified based on 'learning-by-doing'. Negotiating the objectives and outcomes of environmental flows among various stakeholders requires a flexible approach. The success or failure to mainstream environmental flows in water management will depend on whether it has a place in national legislation. Establishing appropriate legislation on environmental flows is an important instrument in getting the methodology into the mainstream. The ability of ministries to implement and enforce a law and reconcile the interests of the traditionally powerful water users with the interests of less powerful sectors will also be crucial. Institutional strengthening in river basin planning and management is therefore essential.

13. Environmental flows as a an essential pivot in developing IWRM approaches

Environmental flows across the portfolio has progressed from a somewhat abstract technical theory to practical assessment and an essential component that in many cases has been the pivot around which wider IWRM solutions have been tested and evolved. The process allocating water across a river basin and including all users, requires more than hydrological measurements. To succeed in developing fair allocation of water, wider stakeholder participation, local to basin organization, and planning and conflict resolution are all required. This has catalyzed greater interest and political awareness of environmental flow concepts as an integral part of water resource planning. This is seen in the development of national-level awareness and development of environmental flow regulations in fledgling national policies and legislation and potentially in region-wide initiatives. This cuts across regions and has been demonstrated in diverse basins in Asia, Eastern Africa and South America., 'Environmental flows' can often be a misnomer. The approach in general applies to water, ensuring a voice for the environment. In practice, it has often proved helpful to rename the concept as, for example, Integrated Flow Management.

14. Good administrative processes with appropriate technical frameworks that ensure adherence to the main objectives are essential in successful coordination of a global portfolio

A small, streamlined regional coordination team helped to reduce bureaucracy and allowed more direct, regular interaction with the regional teams. The simple three-tier structure of Headquarters, regional coordinators and project teams was sufficient for portfolio coordination. For a successful global monitoring and reporting system, the administrative and technical processes need to be streamlined and to dove-tail together. This will reduce the reporting burden on the regional and project teams. For a successful multi-year synthesis of the portfolio, it is necessary to collect and collate data through a carefully administered reporting and monitoring system that is set up in a simple, structured format that is specific in the information and data that it requires. The data recording system also needs to be uniform in design and scope, with regular data collection undertaken throughout the life of the project.

15. A co-finance and leverage model was critical to the success of the Initiative

The co-finance model allowed demonstration projects to progressively leverage themselves into powerful partnerships with major donors and partners, but mobilizing the required co-finance within the lifetime of a project is challenging. It can take years to come to fruition. However, it allowed scaling-up and the basis for some level of sustainability that would have been beyond the scope of the initial investment. Securing co-finance was, in many cases, secured towards the end of the WANI investment. This did, however, allow for continuation of interventions that has ensured that the larger-level and longer-term goals of IWRM planning at basin scales and higher have begun to come to fruition.

10. Moving From Demonstration Results to Impacts

10.1 Making a project successful

While the summary of results presented indicates that WANI projects were able to meet strategic objectives, it is undoubtedly the case that some projects were more successful than others. A review of project results, lessons learned and experience from project management to date, reveals a set of common features that are associated with better results:

- **New access to information** – the willingness of stakeholders to work together on change is increased where the availability of knowledge and information supports emergence of a common understanding of problems faced. More coherent and coordinated decision making is then possible, with greater transparency and accountability. This was an important success factor in, for example, Huong, Komadugu Yobe, Pangani and Okavango.

- **Social learning** – learning through: sharing experiences; networking and capacity building in technical issues; management, administration, environmental issues, financing, legal and regulatory frameworks; designing and facilitating multi-stakeholder dialogues at basin level and across sectors; mediation, negotiation and conflict management. Social learning featured across the WANI portfolio.

- **Short-term wins** – trust and willingness to invest time and resources in projects are increased where tangible benefits for people are visible quickly. This was achieved in many WANI projects by incorporating community-level pilot projects, for example in BASIM, Tacaná, Volta, Komadugu Yobe, Pangani, Okavango and Mekong.

- **Institutional development** – engaging national institutions is instrumental in successfully implementing national approaches to IWRM planning that is tailored to national needs and priorities. For example, WANI was instrumental in the development of the Nigerian IWRM Commission and has supported national institutions in the Volta River Basin.

- **Policy linkages** – through demonstrating practical approaches to IWRM that link policy to action on the ground. WANI demonstrations have helped to pilot national policy strategies on the ground, for example, in Ghana, Burkina Faso and Tanzania. Experience and lessons learnt from practical application of IWRM have also informed policy development, for example, in Peru and Costa Rica.

- **New coalitions** – innovation is strengthened by new partnerships and coalitions that bridge old divides and create momentum around change. New coalitions were instrumental in innovation in BASIM and Tacaná, Volta, Komadugu Yobe, Pangani and Mekong.

- **Decentralization of decision making** – despite very different institutional and political contexts, a key feature of many WANI projects was the emergence of local-level dialogue and decision-making fora that helped to ensure that change in water management addressed local priorities in ways consistent with local capacities. Examples include the micro-watershed committees in Mesoamerica, the local transboundary forum in Volta, water user associations in Pangani and Tai Baan in Mekong.

- **Governance coordination across scales** – a key feature in successful results from WANI demonstrations was ensuring that decentralization of decision making did not create empowerment in isolation. It was vital to enable coordination of governance arrangements across scales, to ensure that decisions at national level informed those at local level and vice versa, and to encourage accountability at higher levels. This often required new networked institutions, formal or informal, to bridge national and local levels. Under WANI, IUCN often worked as the facilitator of this coordination. This took advantage of IUCN's convening ability and the network of IUCN members and partners to bridge government and civil society and field activities with policy processes. Examples include the CORNASAM network in Guatemala and Coátan Watershed Committee in Mexico the sub-catchment fora in Pangani, the catchment planning workshops and leaders' summit in Komadugu Yobe, and the national and regional water dialogues in Mekong.

- **Leadership** – results from WANI were strongest where there was excellent leadership in project implementation but, moreover, from external champions who promoted and communicated the vision of the projects and connected across levels, from local to basin to national and international.

- **Leveraging** – **to deliver large-scale impact,** through influencing the policies and investments of partner and donor agencies. Demonstration actions on the ground have shown that solutions to pressing water issues can be achieved. Outcomes achieved have shown what is possible and this has resulted in stronger partnerships with other actors, which has led to scaled-up interventions and further financing for demonstration and action. Examples of this can be seen across the portfolio.

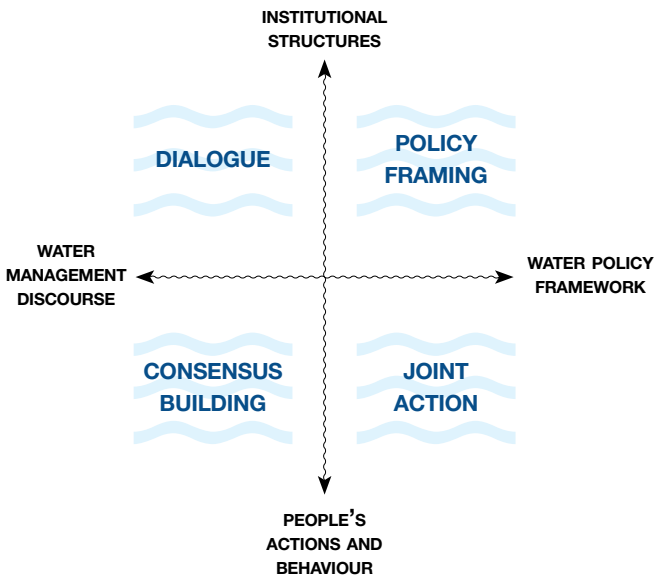
10.2. Impact pathways

Successful projects have been key in delivering results and thus in enabling implementation of IWRM in practice in real-world systems facing real-world problems and constraints. However, the ambition of WANI, with its goal of mainstreaming, is wider than a set of project results used as a basis for learning. WANI was designed explicitly to use innovative and well targeted activities to guide future investments and, most importantly, to be a catalyst for wider change needed to make the future of water and development sustainable. WANI therefore seeks impacts on larger scales and over longer time periods than occurs under discrete projects. In contrast to project outcomes, which are changes in the 'behaviour' of people, institutions or ecosystems over the course of a project, impacts are long-term changes that contribute to achieving policy goals, such as sustainable river basin management envisaged in the Tanzanian National Water Policy, the goals embodied in the Water and Nature Vision (Box 4) and, for example, the Millennium Development Goals. WANI therefore needs to be aligned to 'impact pathways' that will scale up results to impacts.

Impact pathways are shaped by the framework shown in Figure 5.[1] This links the influence of project activities and results to two processes:

- first, the transition of new 'discourse', or shared conception of water management, to water policy; and
- second, the inter-connection between the behaviour of (individual) people and the structures of institutions.

Figure 5. Framework for charting impact pathways in water resources management



Four strategies for scaling up and shaping impacts emerge from this framework:

- **'Consensus Building',** which aims to create general agreement among stakeholders on water issues in order to promote a desired direction in the development of water policies. An example is conflict resolution among local people, conservationists and governmental representatives addressing equity in water resource use.
- **'Dialogue'**, or 'grand' discourses that shape and even set the rules for water management. These are not easily changed, but high-level dialogues can be organized to help define, articulate and communicate new grand water discourses. The World Water Forums or transboundary round-table conferences function at this level.
- **'Joint Action'** in policy making and policy implementation. Joint Action aims to meet water policy goals through activities shared among actors. Examples include activities by stakeholder coalitions to implement river basin management and water and sanitation policies.
- **'Policy Framing'**, which aims to manage and modify institutions, and their rules and use of resources, to establish effective water policies. Examples are developing water legislation at the national level and incorporating ecosystem-based approaches to water management in national poverty reduction strategy papers (PRSPs).

Alignment to impact-shaping strategies

WANI projects have incorporated alignment with these impact-shaping strategies. Examples of how they were used in practice in WANI demonstrations are summarized in Tables 1–4.

Table 1. Application of dialogue as a scaling-up strategy in WANI

DIALOGUE
Facilitated discussions between people or groups directed towards exploration or resolution of cross-national water problems

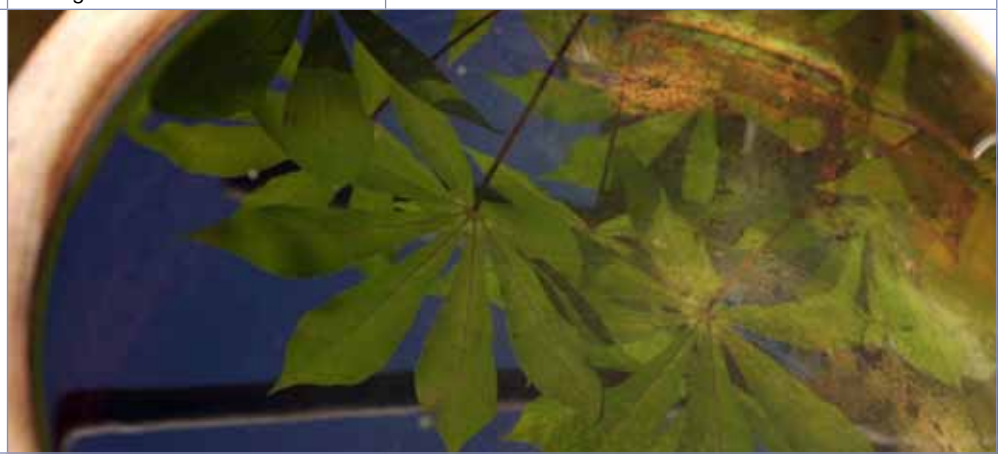
Best practice	Basin and activity	Participants
Transboundary river cooperation	Himal Southern Asia Water Cooperation Conference	Senior officials and experts from Afghanistan, Bangladesh, Bhutan, China, India, Nepal, and Pakistan
	Tacaná Bi-national forum on Coátan and Suchiate watersheds	Mayors and municipal chairs from Mexico and Guatemala
	Central America/Middle East High-level training and scenario dialogues on transboundary water management	Ministries of Foreign Affairs and Ministries of Natural Resources
	Central America Six regional basins: Dialogues, planning negotiation on transboundary basin management	National organizations, government ministries, municipal organizations, community groups
Exploring water futures	Mekong Mekong Region Water Dialogue	The World Bank (WB), Asian Development Bank (ADB), Mekong River Commission (MRC) and others
	Mekong M-Power Dialogue about water and trade	Experts from Viet Nam, China, Lao PDR, Thailand and Myanmar and from other parts of the world
	West Africa Dialogue on Dams	Civil society partnership in ECOWAS regional dialogue on dams
	Middle East Regional Dialogues in technical Committees and links to regional-level processes	Technical experts, governmental organizations
Developing common understanding on stakes and participation strategies	Senegal National workshops	Communities, NGOs, Senegal River Basin Development Authority (OMVS), academia and research institutions
	Okavango Delta-wide consultations and dialogues on the Okavango Development Plan (ODMP)	Local government, business groups, NGOs, civil society
Developing regional IWRM strategies	West and Central Africa Support to regional intergovernmental agencies	ECOWAS and CEEAC

Key lessons
- Attract key players
- Align to high-priority issues, national and regional agenda and sense of urgency
- Celebrate and communicate milestones
- Leadership development is needed to facilitate dialogue

Farmer, Volta River. © IUCN/Taco Anema

Table 2. Application of policy framing as a scaling-up strategy in WANI

POLICY FRAMING Creating or formulating a concept, plan or system for establishing (national) water policies		
Best practice examples	**Basin**	**Participants**
Implementation of national water laws and strategies	Pangani/Wami Ruvu Strategy implementation demonstrated in the Pangani basin and scaled up to the Wami Ruvu Basin	Tanzania Government, water boards
Environmental flows assessment (EFA)	Pangani Including training and mentoring of staff	Pangani Basin Water Office, Tanzanian Ministry of Water
	Huong Including review and dialogue over policies and laws within EFA	Universities, MRC, government, Tai Baan
	Limpopo Including review of legal frameworks within EFlow, networks linked to global network	Southern African Development Community (SADC), Limpopo River Basin Commission, Water Directorates in SADC States, IWRM practitioners
	Huasco River Basin Demonstrating new EF concepts	Local government, international experts, local partners and members
Environmental flows incorporated into national water law	Peru	Government, National Water Authority
	Costa Rica	Government, National Water Authority
Regional capacity building for mainstreaming EF and IWRM approaches	South America Supporting national processes mainly co-organizing short courses and workshops in Brazil, Chile, Peru, Colombia and Ecuador	Government, water agencies, industry representatives, regional experts
Formal endorsement of a code of conduct	Volta Harmonization of shared water management approaches between Burkina Faso and Ghana. Model for the development of the basin water charter	Government ministries, stakeholder involvement
	Central America Support for the development of codes of conduct in the region, using the experience and example of the Volta code	
Formal endorsement of a basin water charter	Komadugu Yobe Stakeholder involvement and formal signing of the KYB Water Charter	The KYB states and Federal Government
	Senegal Establishment of the Senegal River Water Charter	The four riparian countries: Guinea, Mali, Mauritania, Senegal
	Volta Establishment of Convention and Statutes for the Volta Basin Authority and ratification	The six riparian countries: Bénin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, Togo
Formal endorsement of a catchment management plan	Komadugu Yobe Stakeholder involvement and formal endorsement of the plan	The KYB states
	Okavango Okavango Delta Management Plan (ODMP) developed through a multi-stakeholder and multi-discipline approach. Adopted into regional and national development planning	
Formal endorsement of a new transboundary Authority	Lake Tanganyika Establishment of the Lake Tanganyika Authority (LTA) and formation of a Secretariat	The riparian States: Tanzania, Burundi, Zambia, DRC

National IWRM Commissions established	Nigeria (KYB) Formalization of State IWRM Commissions (SIWRMCs) and establishment of a National IWRM Commission (NIWRMC)	
	Jordan The Highland Water Forum, developing national level IWRM with lessons from WANI demonstrations	Ministry of Water and Irrigation, donor agencies
Replication of demonstration projects in new basins regionally	Volta/KYB ECOWAS and regional basin organization strategy supports development of replication of WANI demonstrations in other regional basins (PAGEV and KYB)	
Government supervision in the district development plan	Okavango Supervision by the Ministry of Lands, Housing and Environment through the National Conservation Strategy Agency (NCSA)	Government, local communities, private sector
Basin-level planning	Tacaná Fourteen micro-watershed councils established in San Marcos, Guatemala	
	Pangani/Wami Ruvu/Tana river/ Upper Nile Water user associations developed in the Pangani scaled out nationally in Tanzania and Kenya and Uganda, including basin fora	Local government, GWI, NGOs, local communities
	West and Central Africa Preliminary engagement with five regional basin organizations	Regional basin organizations
Supporting development of regional IWRM strategies	Andean countries Regional and National IWRM strategies	General Secretariat of the Andean Community of Nations (SGCAN), Ecuador National Water Secretariat (SENAGUA)
Key lessons • Discuss laws in parliament • Test national strategies on the ground • Use endorsement to mobilize resources • Engage sectors, ministries and powerful interest groups • Link up with national priorities • Demonstrate the need for Environmental Flows Assessments in water-stressed river basins		

Water for people and nature. © IUCN/Taco Anema

Table 3. Application of joint action as a scaling-up strategy in WANI

JOINT ACTION
Sharing in an activity aimed at meeting water policy goals

Best practice examples	Basin and explanation	Participants
National coordination of watershed management	Tacaná National Micro-watershed Commission formed to roll out micro-watershed management country-wide. Four national municipalities have expressed interest in replication of the Tacaná model	Micro-watershed committees, municipalities
	BASIM Enhancing collaboration between basin organizations	Ministry of Environment and Natural Resources (MARN)
	Tanganyika Strategic Action Programme (SAP) that prioritizes the most urgent interventions	The four riparian countries: Tanzania, Burundi, Rwanda, Congo, and Zambia
	Santa River Basin Agua Santa Dialogue	Government, national institutions, civil society
Form partnerships for problem solving and scaling out implementation	Tanzania Piloting demonstrations and strategies. Solutions. Demonstration of national policy and strategies Piloting lessons from Tanzania to Kenya and Uganda	Government, NGOS, basin authorities, civil society
Participatory research	Mekong Tai Baan research	Local communities
Development and testing of PES	Tacaná PES partnership scheme launched (FOGESHIP) to test PES at the municipal level	
Setting up of a trust fund	Komadugu Yobe A fund consisting of assets belonging to a trust, held by the trustees for the beneficiaries to implement the catchment management plan	Federal government
Declaration of intent	Tacaná Declaration of intent for joint actions between municipalities on either side of the Mexico-Guatemala frontier	Municipalities in Mexico and Guatemala
WANI lessons used to shape partner strategies and approaches to further mobilize resources for IWRM	Global Dissemination of lessons and application of principles and approaches	Governments, institutions partners, donors
Key lessons • Establish a platform for exchange of guidelines and tools • Seize opportunities of devolution • Hook up to national priorities and expressed demands		

River services, Viet Nam. © IUCN/Taco Anema

Table 4. Application of consensus building as a scaling-up strategy in WANI

CONSENSUS BUILDING Creating general agreement among stakeholders on desired directions in the development of water policies		
Best practice examples	**Basin and explanation**	**Participants**
Community-based water resources planning and endorsement of recommendations	Middle East Azraq Oasis, Marj Sanour Basin, Nile River Valley	Communities, partners, local government
	Fiji Nadi River Basin, Kadavu Watershed	Communities, partners, local government
Involvement of ordinary people and officials in the field in projects	Volta Including field visits and consultations to agree on actions and priorities	Chiefs, landowners, district assembly representatives, executives of associations, youth leaders, local NGOs
Joint transboundary forum of local communities	Volta Support for joint planning	Government and NGOs, e.g., agriculture, forestry and environment
Fora for local conflict resolution	Pangani Resolving water conflicts among farmers, municipalities, and large-scale export farms	Pamoja and the Pangani Basin Water Office (PBWO)
Explanation of the state of affairs	Tanganyika Transboundary Diagnostic Analysis	The four riparian countries: Tanzania, Burundi, Rwanda, Congo, and Zambia
Public meetings	Okavango *Kgotla*: public meetings in Botswana villages, headed by the village chief. Community decisions are arrived at by consensus	Villagers and planners
Key lessons • Build strategic alliances upon existing networks • Use local trusted brokers • Publicize experiences and tools		

Irrigated agriculture, Tanzania. © IUCN/Taco Anema

11. Principles and Recommendations for Practice and Policy

11.1 Catalyzing change through ecosystem-based management

Experience from WANI has shown that change and innovation in water resources management are strengthened by using a 'learning-by-doing' approach. This does not wait for a perfect plan or comprehensive information, but starts with the information available and the priority actions agreed by stakeholders in developing a shared vision. Through implementation in practice, lessons are learned and understanding grows among diverse stakeholders, enabling project partners and participating stakeholders to gain trust in each other and what they are doing. Tangible results, communication and leadership strengthen the process. Without doubt, demonstration projects also have to be adaptive, and they need time. WANI found that it is through the resulting learning and empowerment that the willingness and capacity to take on the complex mix of actions needed to achieve real change in water systems develops.

11.1.1 Demonstration and 'learning-by-doing'

The process of demonstration and 'learning-by-doing' is critical to successful use of the ecosystem approach. It is what makes an apparently complex task – of combining maintenance of ecosystem services, increasing equity, adaptive management and decentralization – manageable in practice. And it is by successfully combining these elements that the ecosystem approach leads to outcomes for development priorities including more sustainable and equitable access to water, new economic opportunities, reduced vulnerability of poor people and good governance.

Sustainability of the change processes launched by WANI will benefit from consolidating the demonstration projects. This will ensure that further learning is achieved, but also create deeper change in which the emerging realities on the ground are increasingly the basis for cultural and societal expectations for water management. Consolidating the demonstrations will generate demand for application of the ecosystem approach to IWRM.

11.1.2 Implementing scaling-up strategies

To build on the WANI demonstrations, WANI-2 is applying the identified scaling-up strategies in practice. Results of demonstrations have to be positioned at national and regional levels, to build awareness and influence. The aim is to mobilize processes of change and to catalyze new applications of the practices that worked under WANI-1. Going forward under WANI-2 therefore, the emphasis is on a shift to re-shaping discourse over water at national and regional levels, through consensus building and high-level dialogues that use the learning from the demonstrations, and catalyzing new joint action, in new locations and on larger scales. Critically, results and the tools developed in WANI are being used to support and inform institutional and policy reforms that embed practices from WANI in national and regional water governance frameworks.

11.1.3 Guiding principles

A synthesis of learning from WANI identified a set of principles that should guide the design and structure of programmes that support change and innovation in water management. These principles are based on analysis of theories of change in complex systems where social, economic and ecological dynamics all shape events in uncertain ways.[2] The role that water management plays in development has many of the features of such complex systems, but understanding of how theory can help implementation in practice has been weak. Through learning from WANI, programmes for catalyzing change in water systems where social and economic development and ecosystems are all interacting, and usually in uncertain ways, should incorporate:

PRINCIPLE 1. Recognize people are the owners, actors and direct beneficiaries

Decisions about goals for projects rest with stakeholders. Projects are then sure to work on issues that people and communities themselves hold as top priorities requiring urgent action. Beneficiaries need to be the main actors in the action taken, as they will then be in position to take responsibility for sustaining and expanding change after a project finishes. They have the incentive to do so because the benefits meet priority needs.

PRINCIPLE 2. Deliver results on the ground

Projects need to solve real problems in the daily life of communities. These solutions and their benefits need to be clear to people and make a tangible difference to overcoming the priority problems that keep people poor or are making them poorer.

PRINCIPLE 3. Work across scales to connect

Water cuts across scales, from the irrigation furrow to the river basin. Decisions by water users at different scales impact others – and drive conflict – at higher and lower levels. Decisions thus need to be coordinated among these levels. Water resource management must link decision makers at different levels by fostering communication and by creating platforms for negotiation.

PRINCIPLE 4. Learn, adapt and innovate along the way

Perfect planning and perfect decisions are impossible, because information and data are never as complete as

is ideal, and the external world is dynamic and constantly changing. Institutions, processes and strategies for water resource management have to be set up to be flexible and adaptable. They should always be seeking new information and be ready to use it to adjust course as knowledge advances and according to new priorities and opportunities.

PRINCIPLE 5. Focus relentlessly on help
Institutions and projects provide support services. Their actions must enable better water management and better outcomes for development and the environment. Relentlessly focussing personal and organizational energy on delivering help to the actors who implement management, empowers change.

PRINCIPLE 6. Quantify the dividends on investments and make it pay
Moral arguments ("it's the right thing to do") and technocratic affirmation ("we will squeeze out more crop per drop") are worthy but usually ineffective in the face of competition for resources. Programmes and projects should compete by making a business case to justify investment. Financing of water management should reward those who look after the resource and encourage equitable sharing of benefits.

PRINCIPLE 7. Define values, rights and responsibilities
Cooperation and agreement on reform of water management requires that all parties understand what is expected of them and what they can expect from others. Rights and responsibilities must be transparent and people and institutions must be accountable for living up to their commitments.

PRINCIPLE 8. Embrace water as politics
Everyone has an interest in water, but divisions and differences between interests are rife. Water decisions are therefore always political. Rather than subsume water politics within a plan, decision making should incorporate political processes. Democratic legitimacy can replace top-down technocratic directives.

11.2 Lessons for development policy

Constraints on achieving the Millennium Development Goals (MDGs) are numerous. Among others, these include:[3]

- inequity in the distribution of wealth created by economic growth;
- accelerating climate change, with vulnerability highest for the poorest people and countries;
- intensifying struggle for scarce natural resources, including water;
- marginalization of poor countries and poor people, particularly women, from decision making and the benefits of development;
- lack of good governance.

It is often said that water cuts across the MDGs, reflecting the fundamental role of water in all facets of life and the economy. Equitable and sustainable water resources management and development underpins improvement in sustainable access to safe drinking water (MDG 7), but it can also contribute to, for example, income generation and food security (MDG 1), access to schooling for girls (MDG 2) by reducing the burden of fetching water, and reducing child mortality by cutting water-borne disease (MDG 4). The critical challenge is therefore to achieve water management that supports progress across these issues while addressing underlying constraints on development.

The cross-cutting influence of water means that water can be a catalyst for development. Water policy and investment in water resource management should therefore aim to achieve broad-based benefits for development. For this reason, IWRM has been a cornerstone of development since adoption of the 1992 Dublin Principles. Conventional approaches to IWRM have placed heavy emphasis on planning, with much more limited progress on implementation. Experience from WANI has demonstrated that an ecosystem-based approach gives priority to IWRM implementation. In addition, the ecosystem approach succeeds in creating social, economic and environmental benefits from water resources management needed to support progress on the MDGs.

Cross-cutting benefits from applying the ecosystem approach directly address recognized constraints on achieving the MDGs, by:

- improving equity in access to economic opportunities, through promotion of decentralized governance and enterprise development based on sustainable resource use;
- building resilience to climate change impacts, by integrating diversity of livelihoods, robust ecosystems, self-organization through participatory governance, and learning;
- ensuring the ecosystem services needed to supply water for livelihoods and economic growth are sustained;
- strengthening social inclusion through encouraging multi-stakeholder platforms for decentralized decision making;
- catalyzing good governance, by using water reforms to build policy, laws and institutions that promote transparency and accountability for water and more widely in society.

11.3. Recommendations for water policy

Building such development benefits through WANI demonstrations is a practical embodiment of the Water and Nature Vision and its call for strengthening environmental, social and economic security through sustainable management of water resources. Such benefits and the experience and results from WANI are the basis for a set of key policy recommendations from WANI, which are summarized in Box 12. Results from WANI are evidence that these policy messages should guide national approaches to IWRM implementation. They should reinforce donor

policies relating to water, particularly to guide programmatic investment and priorities for budget support that will promote change in water resource management and good governance while integrating action on environment, climate change adaptation, poverty reduction and economic development. The key policy messages from WANI therefore also provide an evidence-based framework that can guide sectoral planning and cross-sectoral coordination on water and the integration of water management into national planning and PRSPs.

Box 12. WANI key policy recommendations: implementing IWRM using the ecosystem approach

1. Prioritize implementation of IWRM by using ecosystem-based approaches that are built on demonstrations designed to catalyze change.

Well functioning river basins provide vital ecosystem services for people that increase water, food and energy security needed for a resilient economy. River basin management must sustain these services by meeting the needs of both people and nature for water. The IUCN Water and Nature Initiative has demonstrated how this is done, using practical water management that enables reduction in poverty while sustaining ecosystems. Results have shown that ecosystem-based approaches to IWRM complement IWRM planning by giving priority to implementation, using 'learning-by-doing' to support innovation and water policy reforms that integrate the needs of both people and nature.

2. Build water governance capacity to catalyze equitable and sustainable development.

Water governance capacity is the fitness of a society to implement effective water management through transparent, coherent and cost-efficient policy, law and institutions. National systems for governing water that build a balance of integrated policy, good water law and effective and participatory institutions are the basis for solutions that work. These need to incorporate mechanisms for decentralizing decision making in multi-stakeholder processes that empower communities to coordinate water management while addressing their own priorities. To bridge transboundary, national and local levels, networking institutions are needed that coordinate across scales, enable benefit sharing and catalyze transparency and accountability at higher levels and more widely in society.

3. Invest in learning, leadership and information to empower coherent and coordinated action, innovation and change.

Increased availability and shared access to knowledge and information builds a common understanding of problems faced and increases the willingness of stakeholders to work together on change. Results are strongest where there is excellent leadership at local to national levels. Investments and institutions should promote social learning through sharing experiences, networking and capacity building on technical issues but also management, legal and regulatory frameworks, multi-stakeholder processes, negotiation and conflict management.

4. Build water security by maintaining and restoring river health.

Ensuring sufficient water to meet the needs of households, agriculture, industry, power generation and environment is fundamental to reducing poverty sustainably. Meeting this challenge means allocating water among uses, within the limits of what is available. The environment sector has the tools needed, based on environmental flows. These tools need to be applied to increase the sustainability of water infrastructure, to strengthen water and food security for the poor, and to build resilience to climate change.

5. Account for the costs and benefits of river basin ecosystems and their services as natural infrastructure for water resource development.

Water and the services provided by watersheds, including water storage, purification, flood regulation and food security, have benefits across the economy, from local to national levels. Investments which ensure continuing or renewed water security and watershed services sustain local livelihoods, create opportunities for enterprise development and underpin national economic output. Financing of water management should encourage equitable sharing of benefits and include incentives for protecting and managing the resource sustainably.

6. Prioritize implementation of ecosystem-based water management to build climate resilience.

Climate change impacts will be felt first and foremost through water – through drought, floods, storms, ice melting and sea-level rise. Water is at the centre of climate change impacts, and at the centre of adaptation policies, planning and action. The IUCN Water and Nature initiative demonstrated how to build climate resilience in practice using ecosystem-based water management, based on strengthening diversity in livelihoods and nature, ensuring well functioning river basins provide robust ecosystem services, promoting learning and increasing self-organization through good governance. Investing in 'critical national natural infrastructure' of river basins and sustainable water management should be integral to climate change adaptation strategies.

7. Build country-wide water management by using demonstration of results to reframe national debates on water and support development of institutions fit for adaptive management.

Fostering change at the scale needed for country-wide and region-wide transformation of water futures requires strategies that facilitate and create space for dialogues, consensus building, joint action among coalitions of stakeholders and policy reform processes. It is through collective action that societies learn and negotiate how to handle integration of complex water issues and to manage implementation in the face of uncertainty.

References

1. Padt, F.J.G. (2008). “Scaling up Water Management Practices: White Paper for the IUCN Water and Nature Initiative”. WANI Internal Working Document. Gland: IUCN.

2. Gunderson, L.H. and Holling, C.S. (2001). *Panarchy: Understanding Transformations in Systems of Humans and Nature.* Island Press.

3. DGIS. (2007). *Our Common Concern: Investing in Development in a Changing World.* The Hague: Ministry of Foreign Affairs (Development Cooperation). See http://www.minbuza.nl/en/developmentcooperation/developmentpolicy.

Annex 1

Phase 1 (WANI -1) Main Co-financing donors and partners

Canadian International development Agency (CIDA)
Conservation International
Consorcio AGUA-CARE
Danish International Development Agency (DANIDA)
Dialogue Water & Climate (IHE)
European Union (EU)
Federal Ministry of Water Resources, Nigeria
Fundacion Gonzalo Rio Arronte
General Directorate for Development Cooperation, Italy (DGCS)
German Development Service (DED)
Global Environment Facility (GEF)
Government of Botswana
Government of Spain
Interamerican Development Bank
International Water Management Institute (IWMI)
Mava Foundation
Ministries of Environment and Natural Resources, El Salvador
Ministry of Agriculture, The Netherlands
Ministry of Foreign Affairs, Finland
Municipalities in Guatemala, El Salvador and Mexico
Salva NATURA
Senegal River Basin Authority
Swedish International development Agency (SIDA)
Swiss Federal office for the Environment (BUWAL)
UK Department for International development (DFID)
UNDP Lao PDR /Asia-Pacific/Cambodia
United Nations Development Programme (UNDP)
University of El Salvador
UNOPS
Wetlands International
World Water Council
World Wildlife Fund Southern Africa Regional Programme

About IUCN

IUCN, International Union for Conservation of Nature, helps the world find pragmatic solutions to our most pressing environment and development challenges.

IUCN works on biodiversity, climate change, energy, human livelihoods and greening the world economy by supporting scientific research, managing field projects all over the world, and bringing governments, NGOs, the UN and companies together to develop policy, laws and best practice.

IUCN is the world's oldest and largest global environmental organization, with more than 1,000 government and NGO members and almost 11,000 volunteer experts in some160 countries. IUCN's work is supported by over 1,000 staff in 60 offices and hundreds of partners in public, NGO and private sectors around the world.

**INTERNATIONAL UNION
FOR CONSERVATION OF NATURE**

WORLD HEADQUARTERS
Rue Mauverney 28
1196 Gland
Switzerland
Tel +41 22 999 0000
Fax +41 22 999 0002
mail@iucn.org
www.iucn.org