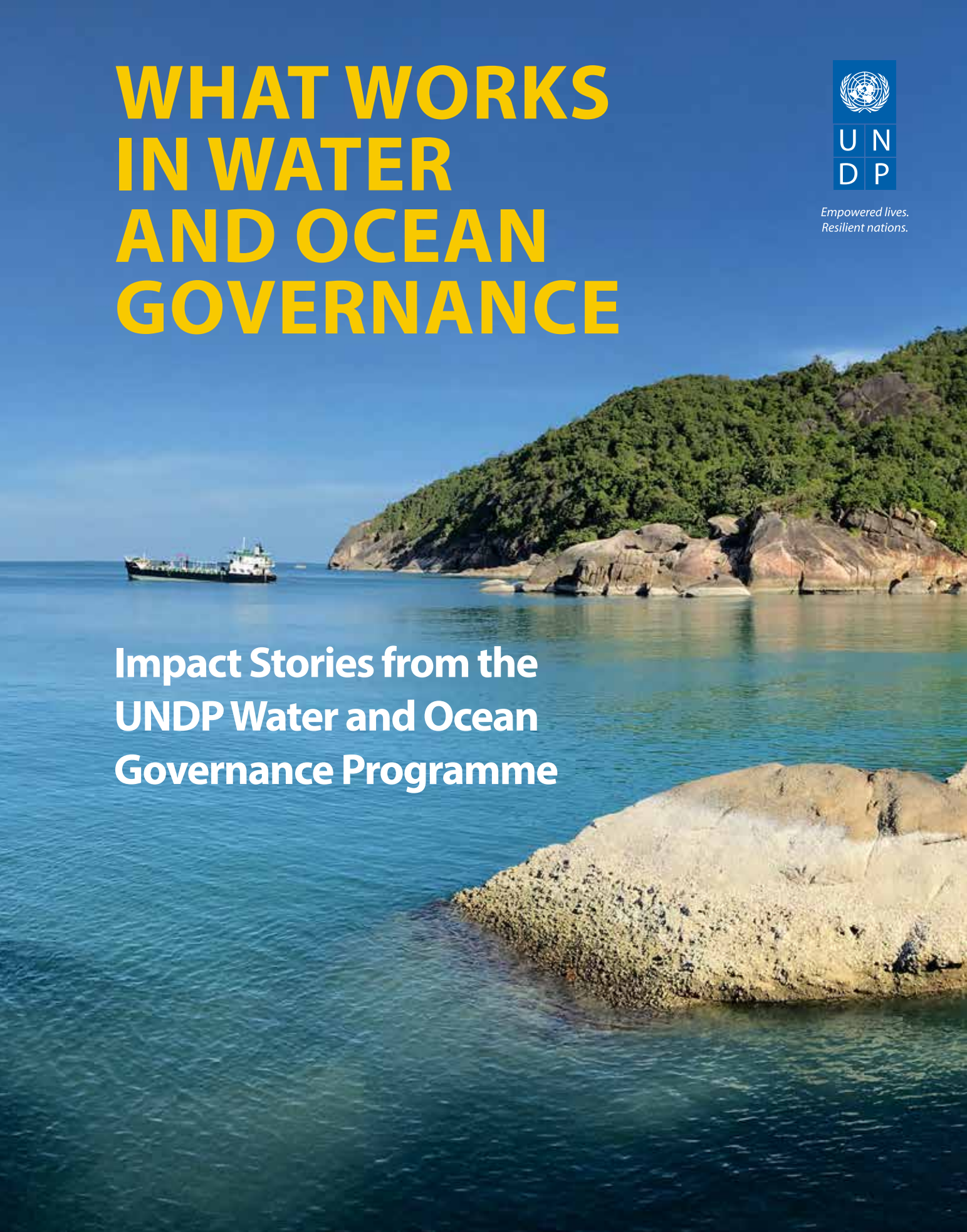
WHAT WORKS IN WATER AND OCEAN GOVERNANCE

UNDP

Empowered lives.
Resilient nations.



Impact Stories from the UNDP Water and Ocean Governance Programme

UNDP

Empowered lives.
Resilient nations.

WHAT WORKS IN WATER AND OCEAN GOVERNANCE

Impact Stories from the UNDP Water and Ocean Governance Programme

PRODUCED BY

SIWI

WATER GOVERNANCE FACILITY

December 2018

WHAT WORKS IN WATER AND OCEAN GOVERNANCE. IMPACT STORIES FROM THE UNDP WATER AND OCEAN GOVERNANCE PROGRAMME

The United Nation Development Programme
UNDP partners with people at all levels of society to help countries eradicate extreme poverty, and roll back inequalities and exclusion. We act on three fronts to achieve development that is sustainable, inclusive and resilient. On the ground in nearly 170 countries and territories, we offer global perspective and local insight to help empower lives and build resilient nations.

Empowered lives.
Resilient nations.

The Global Environment Facility was established on the eve of the 1992 Rio Earth Summit to help tackle our planet's most pressing environmental problems. Since then, the GEF has provided over $17.9 billion in grants and mobilized an additional $93.2 billion in co-financing for more than 4500 projects in 170 countries. Today, the GEF is an international partnership of 183 countries, international institutions, civil society organizations and the private sector that addresses global environmental issues.

The objective of **Swedish development cooperation** is to create opportunities for people living in poverty and under oppression, to improve their living conditions.

SIWI is a water institute, leveraging knowledge and convening stakeholders to strengthen water governance for a just, prosperous, and sustainable future.

The **UNDP-SIWI Water Governance Facility (WGF)** supports low and middle-income countries in their water reform by providing policy and technical advice and support, developing water \governance knowledge and helping to develop institutional capacity.

ACKNOWLEDGEMENTS
This report was written by Taylor Henshaw, with support and supervision by Marianne Kjellén (UNDP), Ivan Draganic and Birgitta Liss Lymer (UNDP-SIWI Water Governance Facility).

Comments and Contributions from
Michael Akester, John Alonso, Shukhrat Bahromzade, Antoine Blonce, Patrick Debels, Geraldine Deblon, Antoine Delepiere, Aimee Gonzales, Mish Hamid, Hashali Hamukuaya, Lotten Hubendick, Andrew Hudson, Neil Jarvis, Alejandro Jimenez, Hugh Walton, Ryan Whisnant, Akiko Yamamoto, Ivan Zavadsky, are gratefully acknowledged.

Content coordination: Marianne Kjellén, UNDP

Production coordination: Maria Sköld, Ivan Draganic and Antoine Delepiere UNDP-SIWI Water Governance Facility

Design by: Juliana Azevedo
Printed by Molind

FOREWORD

"Why does governance work take such a long time?" This was the question, from one of our financial partners, which incited us to prepare this report. The simple answer is that governance reform is a process; it is not the mere issuing of a statement or the signature of a document. Governance reform is about instituting and practicing new ways of operation and interaction. Governance reform is not like a linear production process but rather a whole-of-society transition that negotiates among varied interests and challenges towards changing entrenched practices.

Embarking on the present review, and in the interest of harvesting practical lessons from UNDP's Water & Ocean Governance portfolio, the exploration was focused on "What works in water/ocean governance?" Rather than looking at why governance reforms usually take time, the report aims to unveil the most critical steps or factors that made these generally successful water and/or ocean governance projects reach their objectives.

The report therefore puts a selected set of projects of the UNDP Water and Ocean Governance Programme (WOGP) under the spotlight. Whereas the achievements are often of a very different nature, they all tackle complex, cross-sectoral water or ocean issues that none of the actors involved could have managed on their own. This illustrates the important difference between management – addressing matters that are principally tackled by one actor, often within the purview of one organization – and governance, which relates to the broader relations and rules that regulate the way a whole sector or society acts jointly.

The unifying factor of the sixty plus active projects of the WOGP is bringing stakeholders together for the pursuit of collective interests like environmental protection or sustainable services provision. Beyond connecting them, the projects help stakeholders become more effective by way of knowledge and capacity development, and by helping to identify, mobilize and sequence finance to roll-out action. To catalyze finance through creation of appropriate enabling policy environments has always been an important part of WOGP's support to stakeholders; in this review it is highlighted as an essential element of the WOGP's overall theory of change. It also emerges as one of several critical factors for 'what works in water and ocean governance.'

Whereas policy reform can indeed accelerate financing for sustainable use of water and ocean resources, for governance to "work" it also needs to move in a desirable direction for all societal actors – towards equitable and sustainable human development scenarios. This review highlights the importance of building trustful relations that help actors overcome differences and 'unbundle' complex situations. Trust and confidence emerge from enabling environments of transparency and 'interactive governance.'

Revisiting our theory of change and reviewing 'what works in water and ocean governance', we in the UNDP Water & Ocean Governance Programme have reaffirmed our stakeholder-oriented approach with additional emphasis on transparency, trust-building and catalyzing finance towards long-term and collective goals in the pursuit of sustainable development. We hope you will enjoy this review of 'what works'.

ANDREW HUDSON
Head, Water and Ocean Governance Programme Sustainable Development Cluster
Bureau for Policy and Programme Support United Nations Development Programme

[1] See, for example, UNDP (2012) Catalyzing Ocean Finance Volume I: Transforming Markets to Restore and Protect the Global Ocean and Volume II: Methodologies and Case Studies.

Credit: Antoine Delepiere

CONTENTS

Credit: Antoine Delepiere

INTRODUCTION

What works in water and ocean governance?

Governance is a complex and distributed process that fundamentally determines how resources are utilized and protected, and how the related services and benefits are distributed in society. The effects of governance reform take time to materialize, through the resulting actions that are stimulated or controlled by a revised governance framework.

This report reviews a selected set of projects under the umbrella of the Water and Ocean Governance Programme (WOGP), with a view to exploring what has worked on the ground in terms of assisting countries and stakeholders to reform their water and ocean governance frameworks. The analysis inserts the reported transformation into the steps of the WOGP theory of change, as a way of identifying the factors that helped stakeholders improve their way of interaction and realize governance reforms.

The conclusions highlight the importance of both horizontal and vertical integration—where stakeholders bring the interests of the varying actors involved into the planning and development of a shared development vision, as well as into implementing practical steps toward realizing the shared vision through the various levels of government or organizational realm. In all of these (purposefully selected) successful cases, the projects have enabled stakeholders to generate results and achievements that would have been beyond any of the actors involved by themselves.

The report first introduces water and ocean governance, and the way that the UNDP WOGP addresses the water and ocean governance challenges. This is followed by eleven stories of 'what works in water and ocean governance,' drawing from projects dealing with global shipping, regional fisheries, transboundary rivers and aquifers, Large Marine Ecosystems (LME), Small Island Developing States (SIDS) and the distribution of water and sanitation services.

WATER AND OCEAN GOVERNANCE

It is long since established that the main route for resolving the 'global water crisis' is by improving water governance (UNDP, 2006; UN-Water, 2006). In order to resolve the water and ocean challenges of the world today, relevant actors must increasingly pursue their collective and joint long-term interests. This requires governance, regulatory and management frameworks that are more conducive toward equitable and efficient utilization and protection of freshwater and marine resources, and the equitable and efficient distribution of related services and benefits.

WHAT IS WATER AND OCEAN GOVERNANCE?

Water and ocean governance is one of the most critical areas through which to improve the sustainable development of freshwater and marine resources and services. Water and ocean governance refers to the political, social, economic and administrative systems that influence water and ocean use and resource management. It determines the equity and efficiency in resource and services allocation and distribution. It balances water and ocean use between socioeconomic activities and ecosystems. It determines who gets what water, when and how, and who has the right to water and related services and their benefits. Water and ocean governance relates not only to the state or government but also to civil society and the private sector, and where development takes place within different constellations.

GOOD WATER AND OCEAN GOVERNANCE TAKES TIME

Governance reform is a long-term and continuous process that entails taking incremental steps and which spans years and often decades. Assisting countries and regions to progress from one governance phase to the next is an integral component of the WOGP approach.

The global water crisis is primarily one of governance rather than of resource availability

[2] This section, to a large extent, draws on the publications: UNDP (2017) Water & Ocean Governance: Delivering on the Sustainable Development Goals and UNDP Water Governance Facility (2015) Water Governance in Perspective: Water Governance Facility 10 Years.

Governance
is the software
that makes the
hardware function

GLOBAL WATER AND OCEAN CHALLENGES

OPEN DEFECATION – still practiced by nearly 900 million people, is one of the clearest manifestations of **EXTREME POVERTY.** It perpetuates a cycle of disease, poverty and inequity.

NEARLY 1,000 CHILDREN DIE EACH DAY due to preventable water and sanitation-related diseases.

OVER 80% OF WASTEWATER is estimated to be **RELEASED** to the environment **WITHOUT ADEQUATE TREATMENT.**

80% of global **FISH STOCKS** are fully **EXPLOITED, OVEREXPLOITED OR COLLAPSED.**

20% of the world's **CORAL REEFS** have already been **LOST** and another 20% degraded.

10-20 MILLION TONS OF PLASTICS are entering the oceans **EVERY YEAR**, damaging species and ecosystems.

FLOODS and other water-related disasters account for **70% OF ALL DEATHS RELATED TO NATURAL DISASTERS.**

More than **1.8 BILLION** people live in river basins where water use **EXCEEDS THE LOCALLY RENEWABLE WATER RESOURCES.**

2/3 of the world's population live in areas that **EXPERIENCE WATER SCARCITY** for at least one month per year.

30% INCREASE IN OCEAN ACIDITY due to build-up of anthropogenic carbon dioxide in the ocean over the last 50 years is negatively impacting ocean ecosystems.

Source: UNDP Water and Ocean Governance: Delivering on the Sustainable Development Goals (2017).

Credit: AIO SIDS Project Flick, 2016

That many factors are beyond the control of any one actor lies at the very heart of the governance challenge

DIMENSIONS OF WATER AND OCEAN GOVERNANCE

There are four fundamental dimensions of water and ocean governance to consider when analyzing governance dynamics:

SOCIAL

The equitable distribution of freshwater and marine resources and services among various societal and economic groups, and its effects on society. Apart from being unevenly distributed in time and space, natural resources and the infrastructure required to make use of them and their related services are also unevenly distributed among various socioeconomic groups.

ECONOMICS

Efficiency in water allocation and use and the role of water in overall economic growth. Effective poverty reduction and economic growth depend highly on freshwater, marine and other natural resources. Improving natural resources governance will result in more efficient investment targeting and greater durability and sustainability of derived benefits.

POLITICAL

Equal rights and opportunities for water stakeholders to take part in decision-making processes. Participation facilitates more informed decision making, more effective implementation and enhances conflict resolution. A more effective involvement of commonly marginalized citizens, such as indigenous peoples or slum dwellers, in decision making can greatly improve outcomes.

ENVIRONMENTAL

Sustainable use of freshwater, marine resources and related ecosystems. The sufficient flow of water of appropriate quality is critical to maintaining ecosystem functions and services that build upon them.

Making progress toward improved water and ocean governance means addressing dynamic processes in relation to these four governance dimensions.

CHALLENGES IN WATER GOVERNANCE

In many places of the world, effective governance of water is undermined by poor resource management, corruption, fragmented institutional arrangements, bureaucratic inertia, insufficient human capacity and shortages of finances for investments. In addition, efforts are undermined by the lack of long-term sustainability in the way that freshwater and marine resources and related infrastructures are utilized, maintained and protected.

Governance is complex and multifaceted, and involves a wide range of actors and institutions, with different sets of skills and interests. Responsibilities are often unclear, with several different government entities and other agencies having overlapping or conflicting responsibilities, both formally and informally. The allocation of water is often determined by factors and actors outside what is usually defined as the water sector—agriculture, trade, energy, environmental and industrialization policies greatly affect water allocation and use. The
challenge defies solution by any one single ministry or set of stakeholders. Often, the regional and global dimensions of the governance challenge mean they are beyond the capacity of any single country to resolve.

THE UNDP WATER AND OCEAN GOVERNANCE PROGRAMME

The UNDP Water and Ocean Governance Programme (WOGP) is composed of a set of coordinated projects aiming to help countries achieve integrated, climate-resilient, sustainable and equitable management of water and ocean resources, and universal access to safe water supply and sanitation. Focusing on governance, WOGP supports the enabling environments and long-term and comprehensive partnerships for the sustainable use and protection of freshwater and marine resources, and the efficient and equitable provision of related services.

THEORY OF CHANGE

The illustration on page 13 depicts how the WOGP contribution—by way of projects and programme implementation, knowledge and capacity development, catalysing finance, and global policy advocacy—helps countries transform their freshwater and marine resources governance regimes. This transformative governance reform process moves countries, places and communities from an initial state of varying degrees of poverty, exclusion, unsustainable development, inadequate livelihoods, unequal access to services and conflict, to an improved state of enhanced wellbeing, reduced poverty and exclusion, secure livelihoods and more sustainable resource use.

It suggests an initial (undesirable) state (in its leftmost column), with conflict-ridden, unequitable or poorly developed (resources) governance regimes (i.e. the set of rules and values that govern the behaviours of people and organizations). This situation produces unequal control and use of resources, opening up for uncontrolled extraction along with inequitable (and for many people insufficient) livelihood opportunities and incomes. This state is manifest in poverty, exclusion and unsustainable resource use. It is a situation and challenge that is present in many of the areas of intervention of WOGP projects and programmes.

WOGP assists governments and relevant stakeholders to assess the situation and agree on priorities; to prepare the requisite elements of water and ocean governance reforms; and to implement changes on the ground.

The three main steps of the transformative governance reform process WOGP supports are:

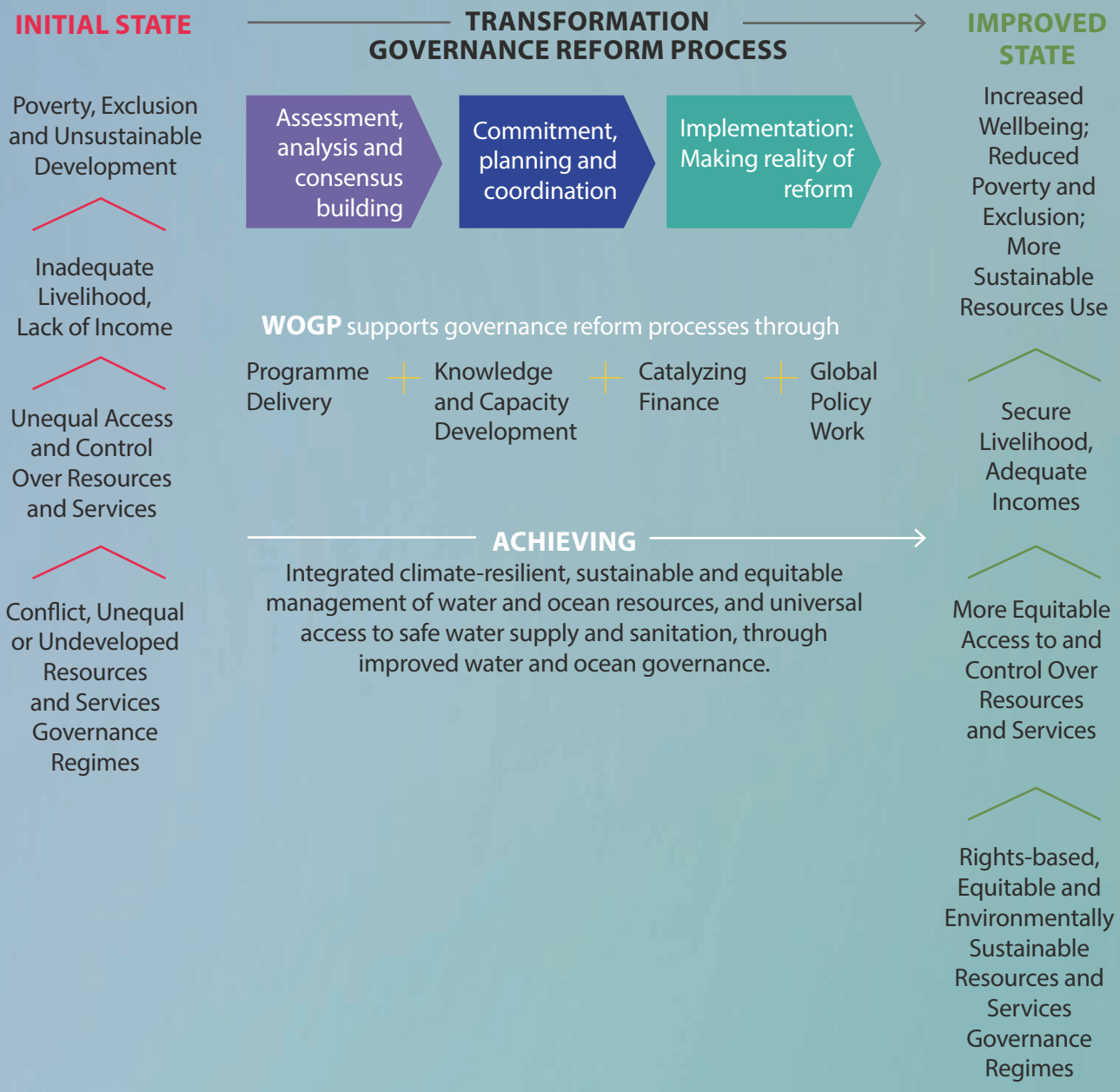
(1) Assessment, Analysis and Consensus Building. The identification of weaknesses and bottlenecks of existing water and ocean governance systems and processes and seeking agreement on priority issues and values. This step serves to formulate the needed changes.

(2) Commitment, Coordination and Planning for water and ocean governance reform, putting the agreed policies, plans, institutional frames and coordination mechanisms into place. In other words, preparing for change.

(3) Implementation: Making Reality of Reform. This involves catalysing public and private investments for the implementation of policies, laws, regulation, strategies, and the necessary institutional frameworks to operate with transparency and accountability and in a participatory manner. This is making change happen.

UNDP WOGP THEORY OF CHANGE

FIGURE 1



(Source: UNDP DRAFT June-2018. The Water & Ocean Governance Programme Contribution to Sustainable Development and the UNDP Strategic Plan 2018-2021 [page 13]. Adapted by Taylor Henshaw)

The WOGP principally supports this transformative process through:

PROGRAMME DELIVERY

Most directly, there are programmes and initiatives that directly support governments and other stakeholders in taking the steps to embark on a transformative governance and policy reform process. The largest share of WOGP resources are channelled to this kind of field implementation, which engages directly with stakeholders.

KNOWLEDGE AND CAPACITY DEVELOPMENT

Programme delivery is strengthened by knowledge and capacity development. Long-term engagement with stakeholders is required for institutional strengthening and organizational learning for key actors to drive and implement reforms with integrity and professionalism. Training and the development of knowledge products that shed light on water and ocean governance, persistent or emerging concerns and innovation also support policy development and the ability to attract further financing.

CATALYZING FINANCE

For there to be action there must be financing. An important part of programme delivery serves to identify, facilitate and sequence financing for government and partners to reach their objectives. While access to funding can determine the speed of implementation, it is the governance structure and the integrity and commitment of the actors involved that set the direction. WOGP assists countries and partners by helping to develop an enabling environment to catalyze adequate finance.

GLOBAL POLICY WORK

Closely related to knowledge and capacity development, the WOGP also engages with global policy work, involving analysis of trends and issues, the advocacy for relevant approaches and the communication of insights. Most global policy work is linked with other UN agencies and partners working on matters related to marine and freshwater resources.

THE WOGP PROGRAMMATIC APPROACH

The UNDP WOGP is one of the main global mechanisms contributing to the delivery of the freshwater and ocean aspects of the UNDP Strategic Plan and the organization's contribution toward achieving the Sustainable Development Goals (SDGs). The WOGP set of projects and programmes bring a diverse suite of actors together to address the challenges related to SDG 6—sustainable management of water and sanitation for all—and SDG 14—to conserve and sustainably use ocean, seas and marine resources.

The WOGP consists of a number of coordinated programmes and projects that deliver on particular aspects and sub-themes, and support water and ocean-related endeavours throughout UNDP and in collaboration with a wide range of implementation partners, including governments, the UN system, intergovernmental organizations, NGOs and the private sector.

The WOGP works at national, local, global and regional levels to enhance 'good water and ocean governance' in five mutually reinforcing and inter-linked thematic areas:

(1) Safe, equitable and resilient water and sanitation services
(2) Integrated coastal and watershed management
(3) Transboundary rivers, lakes and aquifers
(4) Large Marine Ecosystems and regional fisheries
(5) Global, cross-cutting and learning

The principal delivery mechanism in the area of *Safe, equitable and resilient water and sanitation services* is the programme for Governance, Advocacy and Leadership in Water, Sanitation and Hygiene (GoAL WaSH). Through projects in 13 locations around the globe, it enhances the performance of the drinking water and sanitation sectors in partner countries for effective, equitable and sustainable service delivery. It supports
(1) priority setting and the formulation of required policy changes;
(2) preparing for change, by developing action plans, coordination and regulatory functions; and
(3) making change happen, by supporting implementation and strengthening capacities for enhanced accountability and transparency. GoAL WaSH is presently in the process of broadening its focus to also support water resources management with a "source-to-sea" approach, under the new acronym GoAL-WatERS (Governance, Advocacy and Learning in Water for Equity, Resilience and Sustainability).

Over a third of the world's population lives within 100km of the coast or estuaries. Harbouring the brunt of the world's economic activities, coastal ecosystems are under constant threat. Integrated coastal management (ICM) embraces a broader, more systemic approach to the management of coastal environments and fosters sustainable development of coastal areas by bringing together government, technical specialists and local stakeholders. Increasingly, stakeholders are linking upstream integrated water resources management (IWRM) with downstream ICM, in "source-to-sea" or "ridge-to-reef" approaches. With regard to *Integrated coastal and watershed management*, UNDP is involved as a Global Environment Facility (GEF) Agency in 21 IWRM/ICM projects, combining the Transboundary Diagnostic Analysis (TDA) - Strategic Action Programme (SAP) methodology with 'bottom-up' approaches to maintaining aquatic ecosystem services and livelihoods. A number of projects support the special circumstances and needs of SIDS.

THE LME APPROACH AND TDA-SAP PROCESS

The LME Approach (Large Marine Ecosystem) applies a five-module strategy for assessing and monitoring LMEs and for taking remedial actions toward the recovery and sustainability of degraded goods and services. The modules involve utilizing suites of indicators for measuring LME socioeconomics, productivity, governance, pollution and ecosystem health, and fish and fisheries.

The modules are incorporated into a multi-country strategic planning process through development of a Transboundary Diagnostic Analysis (TDA) and a Strategic Action Programme (SAP). Participating countries first prepare a formal TDA through a consultative process in which they determine and prioritize, through the module indicators and clearly established evidence, environmental problems, their root causes and impacts, opportunities, and priority actions. The SAP then translates shared commitments and vision into policy actions to resolve priority threats—including actions for the national benefit of each country, and actions addressing transboundary issues—and into institutional mechanisms at the national, regional and international level for implementation of those actions.

The management of *Transboundary rivers, lakes and aquifers* relies heavily upon trustful cooperation between countries. UNDP is involved as a GEF Agency in 22 transboundary water initiatives, consisting of 13 river, six lake and three aquifer projects. Complementary to the GEF initiatives, the Shared Waters Partnership, implemented by Stockholm International Water Institute (SIWI), builds trust in transboundary waters governance by supporting dialogues and civil society engagements.

LMEs are highly productive waters, which together reproduce about 90 percent of the world's fisheries catch. They are also hotspots of pollution and nutrient overload, overfishing and biodiversity loss, urgently requiring cooperative, multi-country approaches at the regional level. In the area of *LMEs and regional fisheries*, UNDP is involved as a GEF Agency in 13 LMEs, applying the TDA and SAP methodologies for issue prioritization, causal chain analysis and multi-country agreement on required governance reforms and investments. Process outcomes involve new and strengthened institutions, protected areas, and empowered communities engaging in sustainable natural resources management.

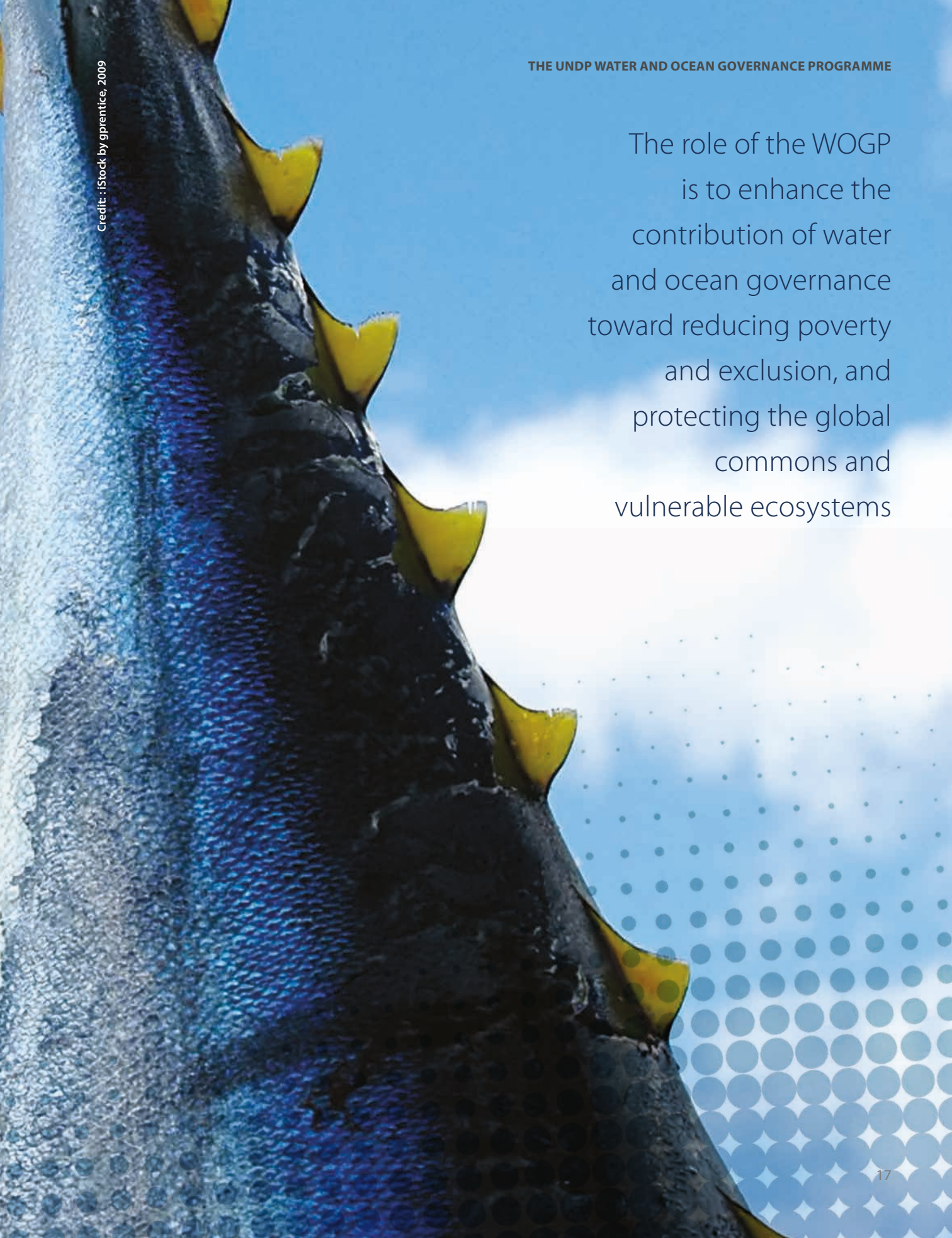
Global governance reform processes have been supported in collaboration with the maritime shipping industry, for example, addressing matters of ballast water (featuring as a story in this report) and other environmental management issues of this global industry.

Global, cross-cutting and learning are addressed through a set of learning, knowledge and capacity development initiatives. UNDP is the lead agency in the GEF International Waters Focal Area knowledge management platforms, IW:LEARN and LME:LEARN.

Local, national and regional networks for sustainable water management are supported through Cap-Net UNDP, an international network for capacity development in sustainable water management. It is made up of a partnership of autonomous international, regional and national institutions and networks committed to capacity development in the water sector. Water-related training materials and manuals are developed with a range of partners, and courses are delivered through its 23 networks and one Virtual Campus.

The UNDP-SIWI Water Governance Facility (WGF), a partnership between UNDP and SIWI, additionally strengthens UNDP's capacity to provide relevant policy support and advice to countries, and to build the knowledge and capacities for improved water governance within governments and civil society, as well as among UN agencies.

Most of the projects of the WOGP are financed by the GEF. Some projects, under GoAL WaSH/GoAL-WatERS for example, along with important mechanisms for knowledge management and capacity development like Cap-Net and WGF, are principally financed through a contribution to the WOGP by the Swedish International Development Cooperation Agency (Sida).

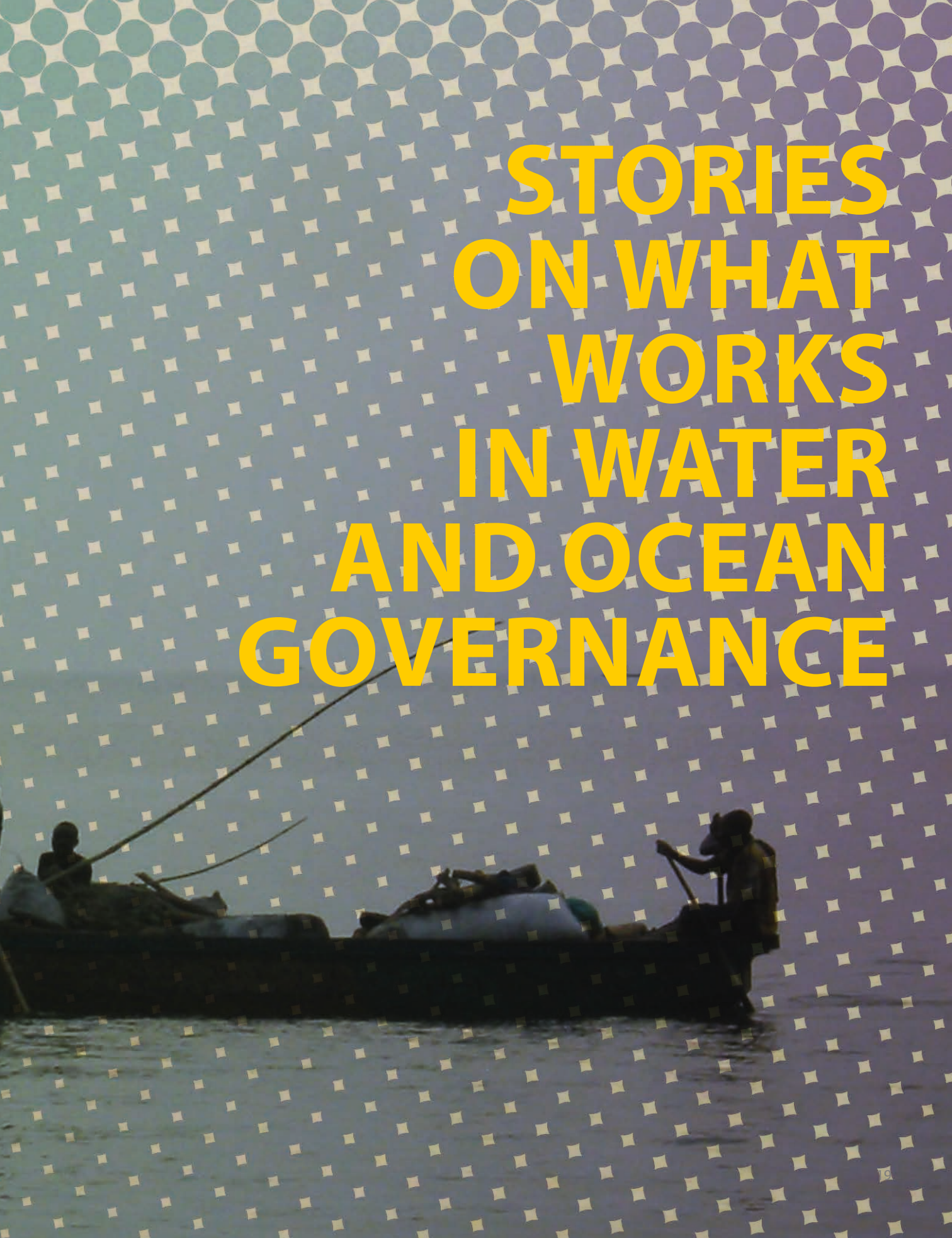


Credit: : iStock by gprentice, 2009

The role of the WOGP is to enhance the contribution of water and ocean governance toward reducing poverty and exclusion, and protecting the global commons and vulnerable ecosystems

Credit: Antoine Delepiere

STORIES ON WHAT WORKS IN WATER AND OCEAN GOVERNANCE



TRANSFORMING A GLOBAL INDUSTRY

STOPPING THE BALLAST WATER STOWAWAYS

This is a story about how countries came together to draw up an extremely complicated convention toward addressing the devastating effects that the organisms 'imported' in ships' ballast water tanks can have on local aquatic ecosystems and livelihoods. It is also a story about how industries joined the quest for improved ballast water management and capacity development for the pursuit of broader societal goals.

Credit: : iStock by liorpt, 2017

INITIAL STATE

Ships are designed and built to move through water, carrying both cargo and people. If a ship is travelling without cargo, or has discharged some cargo in one port and is on route to its next port of call, ballast, usually seawater, is often taken on board to achieve the required safe operating conditions—to maintain stability of the ship; to keep the hull stresses of the ship within permissible limits; and to reduce air-draft, adjust trim and correct list. About 10 billion tons of ballast water is carried around the world each year (GEF-UNDP-IMO, 2017).

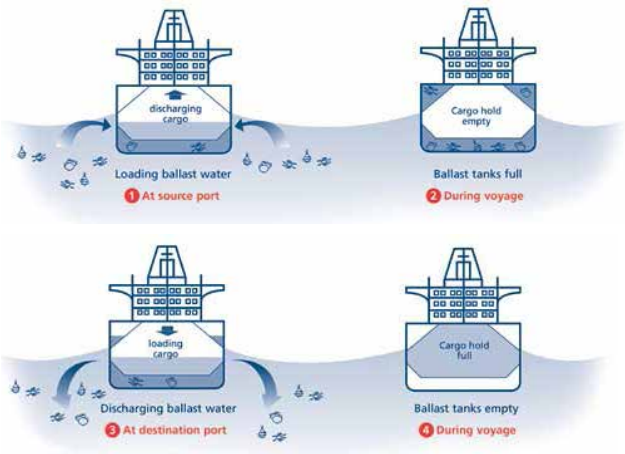
As ballast water is drawn into a ship's ballast tanks, organisms living in that water (including fish, crustaceans, mollusks and algae) are also taken on board. These organisms are subsequently returned back to the sea when ballast water is discharged at a ship's destination. This activity serves as a vector for the transfer of microbes, plants and animals from one part of the world to another; to locations these organisms would not usually be able to reach by natural means. Depending upon the environmental conditions into which they are discharged, organisms may not only survive but quickly establish themselves and become dominant—having disastrous impacts on their new homes, particularly to the local environment and economy, and to human health.

Without intervention, these impacts would grow with the movement to a more globalized world and trending increases in shipping activity. Developing countries in Africa, Asia and South America are at particular risk due to their significant exports of bulk commodities and resulting "import" of ballast water to their coastal areas. There are estimates that annual global socioeconomic costs of invasive aquatic species may exceed US$100 billion each year (UNDP 2012b), underscoring the scale and severity of the issue.

Poor governance of ballast water stems from
(1) the international and cross-boundary character of shipping;
(2) the lack of an international legal mechanism requiring the shipping industry to internalize the costs of avoiding invasive species transfers in ship design and operations that treat ballast water to an acceptable level;
(3) insufficient national and regional ballast water policy, and legal and institutional arrangements;

The transfer of water ballasted in one area of the world and released in another can contribute to 'invasive' species arriving in new regions and wreaking havoc on local marine ecosystems.

BALLAST WATER PROCESS FIGURE 2



Credit: based on IMO 2018

(4) differences in combative approaches and legislation and enforcement across countries;
(5) lack of cost-effective and viable ballast-water-treatment technologies;
(6) limited dedicated financial resources; and
(7) broad unawareness of the issue and of management and mitigation approaches.

10 BILLION TONS of ballast water carried around the world each year

7,000 SPECIES transferred in ballast water at any given time

US$100 BILLION annual global socio-economic cost of invasive aquatic species

Credit: GEF-UNDP-IMO, 2017

TRANSFORMATION
GOVERNANCE REFORM PROCESS

ASSESSMENT, ANALYSIS AND CONSENSUS BUILDING

While Member States of the International Maritime Organization (IMO)—the specialized Agency of the UN dealing with global shipping matters—had been undertaking a long and complex debate on an international regulatory framework for ballast water control and management since the early 1990s, the international response to the issue remained very modest until UNDP-GEF and IMO joined together in 2000 to implement the GloBallast Pilot Project.

Driven to mitigate the impacts of harmful aquatic invasions, the initial phase of GloBallast (2000-2004) laid the groundwork to foster an unprecedented international and public-private cooperation in the area of ballast water management. The project was implemented in six pilot countries—Brazil, China, India, Iran, South Africa and Ukraine—each of which represents a targeted developing sub-region. All six pilot countries came to the project with long maritime traditions, large scale port activities, competent marine research institutions, and strong financial capacity. They also had sufficient regional prominence to champion GloBallast efforts and forge regional consensus on ballast water management. GloBallast activities at demonstration sites in each pilot country included establishing National Lead Agencies, Focal Points and cross-sectoral/inter-ministerial National Task Forces for ballast water issues; assisting with national ballast water legislation and regulations; building institutional capacity for good ballast water management; conducting Port Biological Baseline Surveys (PBBS); and carrying out comprehensive communication and awareness campaigns on the ballast water issue.

The pilot countries provided valuable feedback on their experience in the pilot project to IMO Member States (which was pivotal in turning the idea of a convention into reality) and transformed themselves into regional centres of excellence and champions of the GloBallast project. The expertise and capacity they have built has made them enablers in scaling up efforts regionally and globally.

UNDERSTANDING THE BIOLOGICAL BASELINE

One of the first achievements of GloBallast was supporting developing countries in understanding and running the PBBS, which aims to provide an inventory of marine life in and around ports frequented by ships carrying ballast water to determine the presence, abundance and distribution of both native and invasive aquatic species. These surveys provide a baseline of biological data against which future changes in the structure and function of marine communities can be measured. In this sense, they can serve as a decision support system for port State control during implementation of the international legal framework.

"INVADERS FROM THE SEA"

GloBallast became instrumental in highlighting the issue of aquatic invasive species globally. One of the most significant achievements of GloBallast was the highly regarded and award-winning documentary *Invaders from the Sea*, co-produced with the BBC. In one scene, an Iranian fisherman in the Caspian Sea emotionally explains the dramatic impact the invasive comb jelly had on the local economy, and his lack of alternative resources to support his family. This "poster story" raised awareness of the damage caused worldwide by harmful invasive aquatic species and captured the attention of the shipping industry and the general public.

Credit: iStock by scubaluna, 2014

Zebra Mussels are one of the aquatic bio-invaders transported through ballast water

"The Convention is unique as it not only involves the maritime administrations and ship owners, but calls for involvement from a large number of other local agencies. A major achievement of GloBallast was the way it helped us to bring together and unite all the relevant stakeholders. … It brought everyone on board to reach agreement on policy, legal aspects and compliance issues so as to meet the Convention's requirements. It was essential to drive up engagement."

Bertrand Smith,
Director, Legal Affairs, Maritime Authority and National Project Coordinator, Jamaica (GEF-UNDP-IMO, 2017)

COMMITMENT, PLANNING AND COORDINATION

By catalyzing, for the first time, fruitful stakeholder dialogue on ballast water management, including formulating appropriate ballast exchange and performance standards, the pilot project assisted in significantly accelerating the global effort to develop the complex international framework that ultimately led to the adoption of the *International Convention for the Control and Management of Ships' Ballast Water and Sediments* by IMO Member States in 2004. The catalytic role GloBallast played in the adoption of the Convention was underscored by the fact that four of the pilot countries presided and vice-presided over the diplomatic conference that formally adopted the Convention.

The Convention establishes standards and procedures for the management and control of ballast water. At its core is the requirement for ships to be subject to a range of measures to address the potential impacts associated with ballast water operations by undertaking ballast water management based on two overarching methods: ballast water exchange and ballast water treatment. In addition to undertaking management measures, the Convention requires that all ships must have an approved Ballast Water Management Plan and maintain a Ballast Water Record Book. The management plan sets out the standard operational guidance for the planning and management of a ship's ballast water and sediments, while the record book logs ballast water operations such as uptake, treatment, exchange, circulation and discharge.

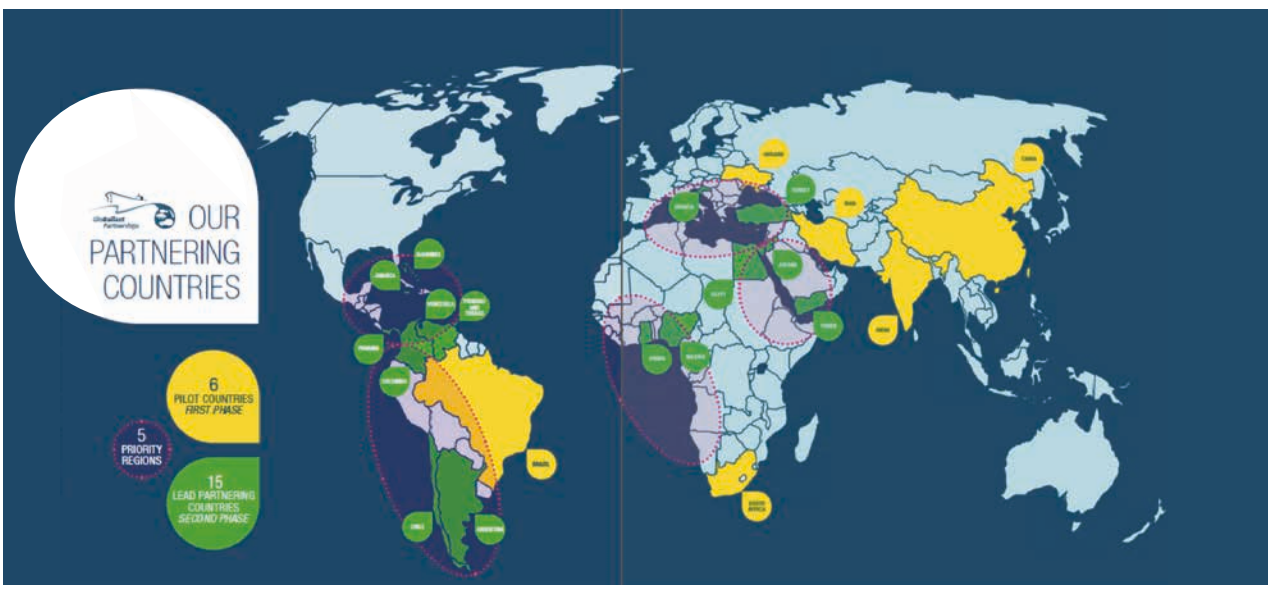
IMPLEMENTATION: MAKING REALITY OF REFORM

It was widely recognized that implementing the Convention would be particularly challenging for four interconnected reasons:

(1) The transboundary nature of global shipping means that, for any regulatory framework to achieve its goals, implementation would need to occur at the international level, which would be a lengthy process, with IMO Member States and other stakeholders all needing to reach agreement.
(2) This challenge is exacerbated by an almost universal lack of understanding, outside of a niche scientific community, of the ballast water issue, both scientifically and socioeconomically.
(3) Even after the adoption of the Convention, there were virtually no commercially available, fully tested and approved ballast water treatment solutions that could be installed on merchant vessels to offer an alternative to conducting ballast water management.
(4) When the Convention eventually met the conditions necessary for ratification and subsequent entry into force, many countries would have insufficient institutional and legal frameworks to be able to implement the Convention at the national level.

With the tools, methodologies and lessons learned from the pilot project, the second phase of GloBallast (2008-2017) was implemented to sustain the global momentum in tackling the ballast water problem and to catalyze innovative global partnerships to develop solutions for meeting the Convention's obligations. The project initially focused on 15 Lead Partnering Countries (LPCs)—Argentina, Bahamas, Chile, Colombia, Croatia, Egypt, Ghana, Jamaica, Jordan, Nigeria, Panama, Trinidad and Tobago, Turkey, Venezuela, and Yemen. The aim was to expand government and port management capacities; facilitate legal, policy and institutional reforms at the country level; enhance global knowledge management and marine electronic communications; catalyze global efforts to design and test technology solutions; develop mechanisms for sustainability; and drive regional coordination and cooperation. The LPCs were guided by a Global Project Task Force, comprising representatives from the GEF, UNDP, IMO, the participating countries, the shipping industry, international environmental NGOs and other contributing parties. Spearheaded by the activities of the LPCs, more than 85 countries, including the six pilot countries, also participated in and benefited from the activities under GloBallast. (The pilot countries provided their acquired expertise from the pilot phase to support the LPCs and confront their steep learning curve through basic training and awareness raising campaigns.)

GLOBALLAST PARTENERING COUNTRIES MAP 1



Credit: GEF-UNDP-IMO, 2017

BUILDING REGIONAL PARTNERSHIPS

Beyond partnering with individual countries—which encouraged interaction among ministries that normally would not engage with each other, and brought together pertinent national stakeholders, such as coast guard, scientists, academia and government agencies to address the ballast water issue—GloBallast focused on strengthening cooperation within regions to maximize the catalytic effect of the project.

Adding this regional partnership tier meant GloBallast could leverage and capitalize on regional organization structures and the experience of engaging with local communities, whereby communication and consultation could be undertaken more closely and frequently than would have been the case had the GloBallast project coordination unit acted alone. These regional partners—well-established regional organizations that were already focusing on other areas of marine environmental protection—were also valuable in opening the regional dialogues necessary for addressing regional requirements under the Convention. Established task forces in 12 sub-regions resulted in a number of regional strategies and action plans for harmonized Convention implementation.

ENGAGING THE SHIPPING INDUSTRY

The Convention brings few direct benefits to the shipping industry, making it difficult to build support for the ballast water issue within the industry itself. GloBallast was able to stimulate industry involvement, however, through the creation in 2009 of the Global Industry Alliance (GIA), a pioneering public-private partnership between GloBallast and the major private shipping corporations to bring about a two-way exchange of ideas and to alleviate industry concerns. Ship owners recognized the value of joining the GIA as a way to make their voices heard, learn how they would be affected by Convention implementation, and gain a mix of practical and technical expertise that would be necessary to meet the Convention's requirements.

The GIA was directly involved in a dialogue that led to the creation of Global TestNet, a network of 19 organizations involved in testing for ballast water treatment systems that aims to standardize the testing procedures, and promote transparency and openness in doing so. This is one of the most applauded GloBallast achievements—a timely response to a growing concern within the shipping industry.

DRIVING INNOVATION

GloBallast played an instrumental role in the establishment of two significant biennial, alternating events in the ballast water calendar: the IMO-GloBallast Research and Development Forum and the International Conference on Ballast Water Management. These events quickly established themselves as among the most highly regarded, well-informed multi-stakeholder gatherings on the subject, and were pivotal in driving innovation in treatment systems and transparency in testing those systems, in sampling and monitoring technologies, and in contingency-based measures. Engaging such a diverse audience (government representatives, regulatory bodies, industry, academia, leading scientific experts and technology developers) in productive discussions on fast-moving, expanding areas of research and development proved crucial in enabling progress in areas such as technology commercialization.

BUILDING CAPACITY

A major component of GloBallast was to devise guidance and training packages specifically addressing the legal, policy and technical challenges that might arise in Convention implementation at the national level. Training package production, however, was not "one size fits all." In each LPC, national consultants were engaged to modify the packages to fit their respective country requirements, factoring in culture, geography and specialized local knowledge. "The value of local knowledge cannot be overstated. In addition to the practical aspects of facilitation, it helps bring a sense of ownership and strengthens commitment, which are vital in a project of this kind. You simply wouldn't get the same effect by temporarily parachuting in a specialist from overseas," says Jose Matheickal, Deputy Director of Major Projects at IMO and Chief Technical Advisor of GloBallast (GEF-UNDP-IMO, 2017).

Capacity building efforts were also very useful to bring two or more countries together to share national experiences and to provide both south-south cooperation and cross-regional training. One example is the Turkey and Morocco training partnership. Turkey was quite advanced in ballast water management and therefore able to share experiences directly with Morocco, and Morocco was able to learn quickly and efficiently from the Turkish representatives and experts. Some stakeholders opined that this training was directly responsible for the subsequent early adoption of the Convention by Morocco.

> "GloBallast was invaluable in providing us a very clear vision of what would be required for implementing the Convention. Programmes like GloBallast are essential to encourage the institutions and decision-makers in developing nations to sign up to, and implement, international conventions."

Mohammed Al-Gubari,
MAA Deputy General Manager of Marine Environment Protection and GloBallast National Coordinator, Yemen (GEF-UNDP-IMO, 2017)

GloBallast produced a wealth of "how to" guidance documents and manuals, including a series of monographs to share information about, and the results of, the project, which have delivered and continue to deliver real guidance and support to stakeholders. Through these products, ballast water management is now taught on ships and as part of commercial mariner training, and knowledge therein has been incorporated into the major shipping companies' management systems.

IMPROVED STATE

GloBallast activities catalyzed the development, adoption and ratification of an extremely complicated international Convention. After meeting the necessary conditions, the Convention entered into force in September 2017. Considering the complexity of the issue and the technological challenges involved, the Convention entering into force—significantly lessening the risk to ocean health caused by aquatic invasive species—can be considered one of the most significant environmental achievements in the early part of this century. It will take decades to detect a measurable change in the incidences of aquatic invasions caused by ballast water. But what is already measurable is that many countries and industry stakeholders are now armed with a wealth of expertise in ballast water management, putting them in a much better position to successfully implement the Convention than they were before the GloBallast intervention.

Through GloBallast efforts, private sector companies, ship owners and related stakeholders around the world collectively invested more than US$100 million in ballast water technology research and development, which led to a variety of technological solutions to satisfy the demanding requirements of the Convention. It is projected that the shipping industry will invest between US$35 billion and $50 billion installing these solutions on about 60,000 vessels over the next decade (IMO, 2017).

GloBallast's transformation from a stand-alone programme, focused exclusively on ballast water management, to a model for innovative global, regional and national partnerships to support the conservation of oceans and seas is likely to remain a lasting legacy. "GloBallast has pioneered a successful model for collaboration, cooperation and capacity building, which is now being emulated through other 'Glo-X' projects," said Andrew Hudson, Head of the UNDP Water and Ocean Governance Programme (GEF-UNDP-IMO, 2017). The Glo-X model is now helping minimize the shipping industry's greenhouse gas emissions, which contribute to ocean acidification, through the GloMEEP Project, and will help address the transfer of aquatic species through biofouling, or the build-up of aquatic organisms on a ship's underwater hull and structures, through the upcoming GloFouling Partnerships Project (both UNDP-IMO-GEF partnerships)

MORE ONLINE

Globallast Partnerships
http://archive.iwlearn.net/globallast.imo.org/

GEF Project Page
https://www.thegef.org/project/building-partnerships-assist-developing-countries-reduce-transfer-harmful-aquatic-organisms

SAFEGUARDING HIGHLY MIGRATORY TUNA FISHERIES IN THE PACIFIC ISLANDS REGION

Credit: : iStock by shalamov, 2015

APPLYING BLUE ECONOMY PRINCIPLES TO PROTECT THE RIGHTS OF THE PACIFIC SMALL ISLAND DEVELOPING STATES

This story is one of 'David and Goliath' in the fisheries world—it is a story of transformational change in fisheries management, involving Pacific Small Island Developing States (SIDS), and the wider powers of global fisheries operators"Hugh Walton, Chief Technical Advisor, Pacific Islands Forum Fisheries Agency, explains (GEF-UNDP, 2016). The established commission's institutional design serves as a model for ensuring the full participation of small islands and regional fisheries management bodies. The story demonstrates the principles of blue economy in action.

INITIAL STATE

The Pacific Islands region encompass about 40 million km^2, falling mostly within the national jurisdictions of 15 Small Island Developing States (SIDS)—Cook Islands, Federal States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu—whom each serve as regional seas custodians.

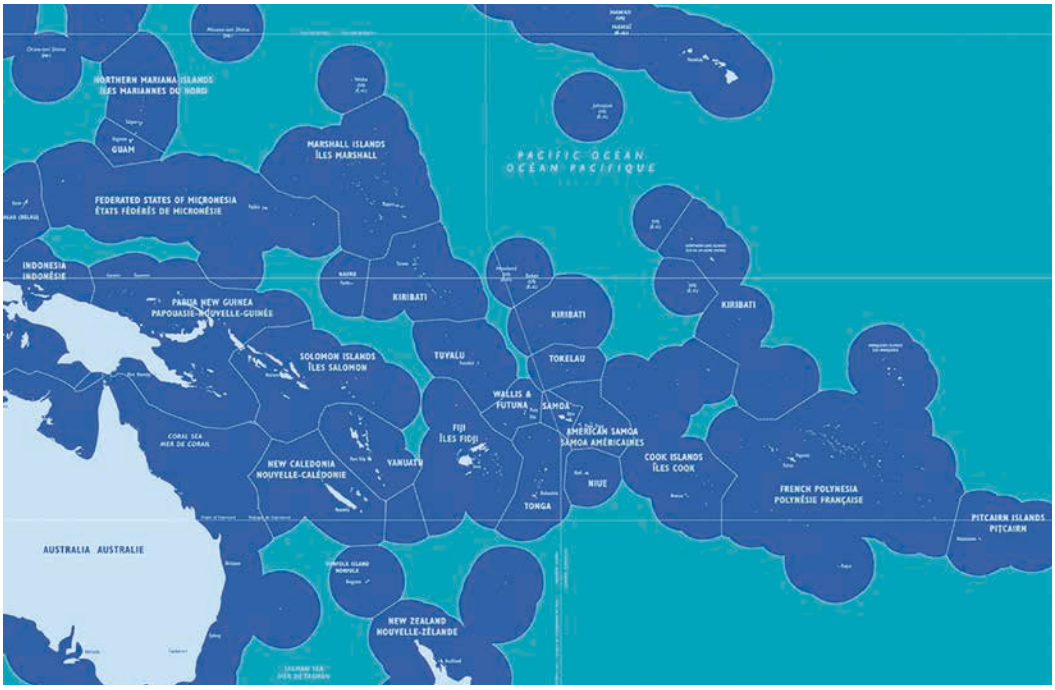
About 60 percent of global tuna supply (mostly skipjack, yellowfin, bigeye and albacore) comes from the Western and Central Pacific Ocean (WCPO) (GEF-UNDP, 2015). Of this, around 80 percent of the WCPO purse seine catch comes from the waters of the eight signatory members of the Parties to the Nauru Agreement (PNA), and this collectively accounts for the management and control of the world's largest sustainable tuna purse seine fishery (Walton, 2018). From a regional perspective, tuna harvests amount to about 90 percent of all fish caught in the region, representing a critical source of revenue and, for many, the only commercially viable resource Pacific SIDS can use to buoy up their economies and create jobs. In terms of value, the tuna fishery is worth more than six times that of all other Pacific Island fisheries combined (GEF-UNDP, 2015).

With tuna overexploited elsewhere in the world, the major fishing countries are increasingly wanting to fish in the WCPO to supply international markets. These distant water fishing nations (DWFN) have introduced technology and capital-intensive industrial fishing methods to the region, which had traditionally comprised smaller domestic commercial fleets and artisanal domestic fisheries from the Pacific SIDS. The most significant method introduced is purse seining, where a large net is used to surround a school of fish and subsequently closed off at the bottom with a cable that runs through steel rings. The operation effectively turns a huge panel of netting into an immense bowl that can trap considerable targeted fish and bycatch.

Most Pacific SIDS are on an uneven playing field with the DWFNs due to shortage of technology, compounded by a complex combination of socioeconomic factors, including smallness, geographic isolation and narrow resource bases, and lack of technical capacity and ineffective coordination among resource and conservation agencies. Harvesting has been mainly done by DWFNs. Domestic small scale and artisanal fisheries in the region take small quantities of tunas from coastal waters, but landings from these fisheries are a minor proportion of the total.

EXCLUSIVE ECONOMIC ZONES OF THE PACIFIC SIDS

MAP 2



Credit: FFA, 2018

Tuna are known as highly migratory stocks because of the great distances they can swim, often across national maritime boundaries and the high seas

TRANSFORMATION
GOVERNANCE REFORM PROCESS

ASSESSMENT, ANALYSIS AND CONSENSUS BUILDING

IDENTIFYING THE CHALLENGES FACING THE TUNA INDUSTRY

In 1997, a comprehensive analysis of transboundary marine issues in the Pacific Islands region, initiated and developed by the Pacific SIDS, with support from UNDP and GEF, led to a SAP. The SAP identified key challenges facing the tuna fishery. These included weaknesses in national and regional-level fisheries management and governance, and a lack of information available to senior decision makers to help them understand the root causes of unsustainable actions and to respond to them appropriately. The critical weakness at the regional level was identified as the lack of a legally binding institutional arrangement governing cooperation in the management of the region's commercial oceanic fisheries. At the national level, key identified weaknesses were the lack of compatible management arrangements among regional zones and the lack of political commitment to take the necessary decisions to limit fishing and catches.

COMMITMENT, PLANNING AND COORDINATION

TRANSITIONING TO BLUE ECONOMIES

A sustainable blue economy is a marine-based economy that, among others:
(1) provides social and economic benefits for current and future generations by contributing to food security, poverty eradication, livelihoods, income, employment, equity and political stability;
(2) restores, protects and maintains the diversity, productivity, resilience, core functions, and intrinsic value of marine ecosystems and natural capital upon which its prosperity depends;
(3) is governed by public and private processes that are inclusive, well-informed, precautionary, adaptive, accountable, transparent, innovative and proactive;
(4) creates a level economic and legislative playing field with adequate incentives and rules; and
(5) plans, manages and effectively governs the use of marine space and resources, applying inclusive methods and the ecosystem approach (World Bank, 2017).

Installing blue economy principles in Pacific Islands region oceanic fisheries management has been the focus of a series of UNDP-GEF Ocean Fisheries Management Projects (OFMP), implemented by the Pacific Islands Forum Fisheries Agency (FFA) and the Pacific Community. The three phases of this project have specifically aimed to address the weaknesses in regional and national-level fisheries management identified in the SAP and to support implementation of SAP priority actions, including creating a legally binding institutional arrangement governing regional cooperation; introducing compatible management arrangements throughout the range of oceanic fish stocks; improving scientific understanding to provide information for the kinds of management measures that need to be taken; and building capacity at the regional and national levels to empower the Pacific SIDS to engage on a more equal footing with the DWFNs, whom would also be participants in negotiating and implementing a regional governing arrangement to sustain oceanic fisheries management in the WCPO. An updated TDA was drafted and tabled for the consideration of the Members of the FFA at their May 2018 annual meeting. As a result, a revised SAP in currently under development.

"We helped the islands to establish the world's largest on-board observer programme, applying 100 percent coverage to the 1.5 million ton per year purse seine fishery since 2010, as well as the world's only regional satellite-based vessel tracking system, which enabled regulators to track the location and activities of over 2,000 fishing vessels."

Andrew Hudson,
Head, Water and Ocean Governance Programme, UNDP (UNDP, 2014)

THE WESTERN AND CENTRAL PACIFIC FISHERIES CONVENTION

The OFMP programs have prioritized supporting the participation of Pacific SIDS in the negotiations and eventual adoption, in 2000, of the *Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean* (WCPF Convention). Throughout the negotiation process, the OFMP played a significant role in building the Pacific SIDS' capacity to negotiate with the DWFNs, bolstering their confidence and ensuring their interests were well represented. While the WCPF Convention draws on many of the provisions of the UN Fish Stocks Agreement (1995), it also reflects the special political, socioeconomic, geographical and environmental characteristics of the WCPO region.

The WCPF Convention seeks to address problems in the management of high seas fisheries resulting from unregulated fishing, overcapitalization, excessive fleet capacity, vessel reflagging to escape controls, insufficiently selective gear, unreliable databases and insufficient multilateral cooperation in respect to conservation and management of highly migratory fish stocks. All coastal states in the region and all eligible fishing states have ratified the Convention. The advice and support provided under the OFMP helped the SIDS take the necessary legal steps for ratification, which led to the Convention's early entry into force (2004).

At the same time, the OFMP worked to strengthen fisheries governance at the national and regional levels. At the national level, it supported the reform, realignment and restructuring of the SIDS' national fisheries laws, policies, institutions and programs to take up the new opportunities that the WCPF Convention creates and to discharge the new responsibilities that the Convention requires. At the regional level, through capacity building programs, it helped to fully integrate existing institutions, such as the FFA, into the Convention process and implementation.

IMPLEMENTATION: MAKING REALITY OF REFORM

THE WESTERN AND CENTRAL PACIFIC FISHERIES COMMISSION

A critical precursor to improving fisheries management and transitioning to a blue economy in the Pacific Islands region was the establishment of a foundational governance institution. The Convention established the Western and Central Pacific Fisheries Commission (WCPFC) as the central decision-making body for management of tuna fishing in the Pacific Islands region. It consists of representatives from 25 countries that have ratified the Convention. Another eight countries participate as cooperating non-members.

Through capacity building efforts and financial assistance over the course of the WCPFC's preparatory period and early implementation, the OFMP supported the active participation of the Pacific SIDS— several of which would not have otherwise had the financial means to attend and engage as equals— to ensure they were well represented, empowered and could present and negotiate their positions at, and fully contribute to, Commission meetings and deliberations. The Commission has since provided a platform for Pacific islands to sit as equals at the same table as the DWFNs that operate fishing vessels in the region. The Commission must assess the impact of all proposals for conservation and management measures on SIDS, and the Convention requires the Commission to ensure that the burden of management actions on SIDS is not disproportionate.

Conservation and management measures of the Commission are legally binding and apply to all WCPFC members and the Convention area. The Commission supports subsidiary bodies, including the Science Committee (SC) and the Technical and Compliance Committee (TCC) to help carry out its mandate. OFMP supports key FFA annual meetings (the MCS Working Group (MCSWG) and the Management Options Consultation (MOC) that contribute to FFA Members' inputs to WCPOFC meetings. The TCC is the enforcement committee of the Commission. It reviews members' adherence to Commission decisions and monitors individual countries' implementation of those measures. The TCC also makes recommendations to the Commission with respect to encouraging, improving and enforcing compliance by members with the decisions of the Commission.

The WCPFC established a number of monitoring, control and surveillance initiatives to promote compliance by Commission members with conservation and management measures and other decisions of the Commission. Many of the elements of the compliance program are in place, setting a number of important global precedents, which are outlined below.

VESSEL DAY SCHEME

The OFMP contributed to the development of the Parties to the Nauru Agreement (PNA) Vessel Day Scheme (VDS) to constrain and reduce catches of target tuna species. The VDS caps the total number of fishing days permitted for this particular fishery and is now the largest rights-based cap and trade management scheme used in international fisheries globally (GEF-UNDP, 2016), substantially increasing revenues to participating Pacific Island countries. The total allocation of fishing days is set and apportioned between PNA members for one-year periods up to three years in advance. It has an economic objective of creating competition among DWFNs to purchase units of fishing effort in days, at the highest possible price. The VDS has resulted in more sustainable catch volumes and has seen SIDS revenues from the purse seine fishery increase from US$220 million in 2012 to US$480 million in 2016, and supported 25,000 jobs in FFA Member Countries in 2017 (FFA, 2018).

SURVEILLANCE AND VESSEL TRACKING

The Regional Fisheries Surveillance Programme is a unique collaboration among the members of the FFA to address illegal, unreported and unregistered (IUU) fishing. A range of regionally agreed systems and tools and best practice technology applications provide a high level of monitoring, control and surveillance and the agency is active in a range of activities supporting IUU mitigation, such as the implementation of electronic monitoring and reporting systems on WCPO vessels. The project contributed to the establishment of national and regional Vessel Monitoring Systems (VMS) to provide information on vessel movements. The VMS has been further developed by FFA and the WCPFC into the world's largest international satellite-based vessel tracking program, tracking over 2,500 tuna vessels in national waters and high seas (GEF-UNDP, 2015). Based at the FFA's headquarters Regional Fisheries Surveillance Centre (RFSC), this satellite-based vessel-tracking program has helped strengthen enforcement and compliance, and has improved scientific understanding assists with monitoring tuna (and other) stocks, and supports more informed decision-making.

OBSERVER PROGRAMME

The OFMP supported the introduction of the world's largest on-board Observer Programme (including 100 percent coverage on tropical purse-seine vessels) (GEF-UNDP, 2015), which has contributed to achieving more responsible and sustainable harvesting, and has generated significant employment. Independent observers report on tuna fishing catches and methods. Often, they will travel with the fishing vessels, being away at sea for weeks or months at a time, to gather independent information about what is happening on the particular fishing vessel at sea. (Fishing vessels are obliged to provide observers with a bed and food for the time they are on-board the ship.) Observers note how much fish is caught; what type of fish is caught; what methods are used to catch fish; and whether there are any observed breaches to laws and regulations. This information is then fed back into a central database at the Pacific Community so that the FFA and national governments can keep track of what fishing vessels are doing and whether fishing laws and regulations are being implemented. Subsequently, national authorities can then use this information to investigate vessel practices and police accordingly. Across the Pacific Islands region, there are about 200 active observers, who are trained by FFA and employed by their national governments (FFA, 2018).

"This project played a critical role in enabling Pacific Island nations to maintain a strong influence and avoid any disadvantageous outcomes throughout the process of negotiating the Western and Central Pacific Fisheries Convention with Distant Water Fishing Nations. There is no doubt that GEF [UNDP] support was a major factor contributing to a successful outcome."

Andrew Wright,
former Executive Director, Western and Central Pacific Fisheries Commission (GEF-UNDP, 2015)

IMPROVED STATE

Sustainable management of the WCPO tuna stocks is critical not only to the wellbeing of the region's people, but also for the international community seeking to conserve an economic resource of global value. It is too early to be able to measure changes in the environmental status of the resources and ecosystem of the Pacific Islands region from OFMP-related reforms. However, the measures already adopted by the WCPFC and the Pacific SIDS, if fully implemented, are projected to maintain the two major tropical tuna species (skipjack and yellowfin) at levels that will maintain Maximum Sustainable Yield (MSY). These measures are also projected to reduce fishing mortality on bigeye tuna, the most vulnerable stock, with additional measures necessary to maintain bigeye stocks at levels that will sustain the MSY. In 2018, the Oceanic Fisheries Program of the Pacific Community, as science provider to WCPFC, reported that all four key tuna stocks on the WCPO were being sustainably harvested (Walton, internal communication, 2018). This is well reflected in the ongoing MSC certification of the PNA skipjack and yellowfin tuna H fishery, which has also been supported by OFMP.

Since the UNDP-GEF interventions began in 1997, concurrent with the major strides in moving the regional tuna fishery toward sustainability and internalizing management costs, overall tuna landings by Pacific SIDS fishing fleets have roughly tripled, as have the dockside dollar value of landed fish (UNDP, 2012). These enhanced landings and economic benefits to the Pacific Island countries have been catalyzed to a sizeable degree by the OMFP's application of blue economy principles, through increased country capacities to fully participate in all WCPFC processes, to apply fleet and catch monitoring, control and surveillance, and to apply ecosystem-based approaches to fisheries management. The processes and strategies that the OFMP helped implement set global precedents for how DWFNs and coastal states can collaborate on resource management. It serves as a showcase for empowering small islands to engage on an even footing with larger and more politically influential countries

MORE ONLINE

SustainablePacFish
http://www.sustainpacfish.net/

GEF Project Page
https://www.thegef.org/project/implementation-global-and-regional-oceanic-fisheries-conventions-and-related-instruments

COORDINATING MARINE ENVIRONMENT DEVELOPMENT EFFORTS IN THE CLME+ REGION

Credit: iStock by Damocean, 2018

MOBILIZING PARTNERS FOR THE SUSTAINABLE MANAGEMENT, USE AND PROTECTION OF THE CARIBBEAN AND NORTH BRAZIL SHELF LARGE MARINE ECOSYSTEMS

This story is about the more recently initiated implementation of the interactive governance approach, which calls for the whole of public, civil and private sector interactions taken to solve societal problems and create societal opportunities. It is about an upscaling of efforts and enhanced coordination and collaboration among key programmes, projects and initiatives, and among different organizations and sectors of society working or with a stake in the marine environment—deemed essential to combat the size and variety of marine environment issues at hand, and something no individual project or initiative could tackle alone.

INITIAL STATE

The region of the Caribbean and North Brazil Shelf Large Marine Ecosystems (the "CLME+ region") constitutes one of the geopolitically most diverse and complex sets of LMEs in the world. Twenty-six independent States and eighteen dependent/associated territories are located within, or border the CLME+. Home to more than 100 million people, the CLME+ constitutes a region of globally unique cultural and historical value, a consequence of its precolonial and colonial history, and of the indigenous, African, Asian and European roots of its current population. At the same time, the region supports a multitude of globally important economic activities and ecological processes. The CLME+ contains the highest concentration of SIDS among all of the world's LMEs.

The vast expanse of the marine environment in the CLME+ is important for fishing, shipping, global tourism, and the oil and gas industries. The Caribbean makes up more than 60 percent of the world cruise market (GEF-UNDP, 2014). The Panama Canal is a critical hub for maritime traffic, handling about five percent of total world trade (GEF-UNDP, 2014). With the advancement of technology, seabed exploration has grown exponentially in the region over the last few years, and the number of countries now producing oil and gas for export has increased (GEF-UNDP, 2014). Additionally, the CLME+ provides global markets with important products derived from its fisheries, including red snapper, shrimp, Caribbean spiny lobster and queen conch. These economic activities take place in a region that occupies a globally relevant position in terms of its share in the total coverage of key tropical marine habitat and ecosystem types known to deliver substantial contributions to globally important ecological processes.

Over the past decades, shared living marine resources in the CLME+ region have become increasingly impacted by habitat degradation, unsustainable fisheries practices and pollution. This situation is now seriously jeopardizing the region's opportunities for sustainable blue growth (Optimizing revenues from sustainable use of aquatic resources while minimizing ecosystem degradation and enhancing social benefits).

CLME+ REGION MAP 3

Credit: UN Environment

TRANSFORMATION
GOVERNANCE REFORM PROCESS

ASSESSMENT, ANALYSIS AND CONSENSUS BUILDING

TRANSBOUNDARY DIAGNOSTIC ANALYSES FOR THREE ECOSYSTEM TYPES

With co-financing provided by CLME+ regional and national entities, in 2009 the GEF partnered with UNDP and UNESCO-IOC to implement the CLME Project to help the countries and territories in the region unite their efforts to establish a more coordinated ecosystem-based management (EBM) approach to management of the LMEs. Under the CLME Project, a series of TDAs were produced for the three ecosystem subtypes known to support the most important fisheries and biodiversity on the CLME+ region: the reef ecosystem; the pelagic ecosystem; and the continental shelf ecosystem. The three priority environmental problems highlighted through these TDAs and common to the three ecosystem types were: (1) unsustainable exploitation of fish and other living resources; (2) habitat degradation and ecosystem community modification; and (3) pollution. Causal Chain Analyses (CCA) carried out under these TDAs further identified direct and root causes of these problems, which have included: weak governance (including legal and institutional frameworks, inadequate environmental quality standards and legislation); limited human and financial resources; inadequate data and information access and knowledge; inadequate public awareness and participation; inadequate consideration of value of ecosystem goods and services; population and cultural pressures; and trade and external dependency (high dependence on fish for income and export earnings). The TDA and CCA results were combined with the outcomes of a series of case studies, including an analysis of existing governance arrangements, and pilot projects and used to shape the development of a SAP.

COMMITMENT, PLANNING AND COORDINATION

AN "UMBRELLA" STRATEGIC ACTION PROGRAMME

Under the CLME Project, a SAP was developed in 2013, providing a comprehensive roadmap toward sustainable living marine resources through strengthened and consolidated regional cooperation. The SAP is a ten-year programme consisting of 76 priority short term (0-5 years) and medium-term (6-10 years) actions for better marine resources governance, structured under six strategies and four sub-strategies. It combines actions for structural change with capacity building at the regional, national and local levels, and high-priority management interventions and investments on the ground. The SAP can be seen as an "umbrella" programme, with SAP ambitions matching the magnitude of the challenge faced by the region's marine environment. The SAP supports CLME+ countries and organizations in their delivery on marine-related international environmental and development targets, such as the Aichi Targets, UN SDGs, and regional agreements. And the SAP places substantial focus on the strengthening of and coordination among existing organizations and arrangements for the management of living marine resources.

To date, the SAP has been politically endorsed by 35 ministers representing 25 countries and six overseas territories: Antigua and Barbuda, Bahamas, Barbados, Belize, Brazil, Colombia, Costa Rica, Dominica, Dominican Republic, France (with 6 overseas territories in the CLME+ region), Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Montserrat (UK overseas territory), Nicaragua, Panama, St. Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, the United States of America (CLME+ Project, 2018).

CLME+ PROJECT AND STRATEGY

Throughout the life of the CLME Project, regional cooperative mechanisms were enhanced and have allowed for more coordination between key regional fisheries and environmental organizations for decision making. Much of the CLME Project's success came from the fact that decisions on how to respond to challenges were left to partner countries and regional organizations. This helped develop broad-based support and ownership of the project activities, which eventually manifested in the regional agreement to implement the SAP.

Despite the high-level political endorsement of the SAP, critical work remained to be done to keep the momentum going to achieve more sustainable management of the CLME+ region. At the Fourth Steering Committee Meeting of the CLME Project (Cartagena, March 2013), participating countries expressed their interest in moving forward toward implementing the CLME+ SAP, with a high priority given to the development of a proposal for a new project, to be implemented with renewed co-financing support from the GEF. To this end, a new GEF-UNDP and UNESCO-IOC project began in 2015 to demonstrate large buy-in from regional stakeholders drawing its co-financing from both regional and national entities, and to form the cornerstone of the SAP implementation efforts.

The CLME+ Project is a five-year project that specifically aims to support the implementation of this ten-year CLME+ SAP. However, as an ambitious and broad "umbrella" SAP, it was acknowledged that SAP implementation cannot be achieved through a single project or initiative. Whereas substantial actions on stress reduction could be expected from a typical SAP implementation project, in the specific context of the CLME+, and giving due consideration to its scale, uniqueness and complexity, a too strong focus on specific stress reduction measures at the local or sub-regional level would quickly exhaust the available funds under the project, whereas such local or sub-regional actions could very well be addressed by many of the other existing, or newly planned projects and initiatives. Rather, better articulation, coordination and collaboration among the wide array of ongoing and newly planned projects and initiatives, that can deal with stress reduction at the local or national scale, would be required.

CIVIL SOCIETY AND PRIVATE SECTOR ENGAGEMENT IN CLME+ SAP IMPLEMENTATION

In developing the SAP, efforts were made to consult with all relevant stakeholders. Despite these efforts, the SAP mainly contains priority actions to be undertaken from a governmental/public sector perspective. Successful governance of the region's shared living marine resources, however, demands the involvement of other societal groups that have a direct stake in resource management. In support of enhanced private sector and civil society engagement, the CLME+ Project is supporting work on the development and delivery of civil society and private sector versions of the SAP ("C-SAP" and "P-SAP" respectively).

The C-SAP, for example, will lay out a strategy for capacity building and civil society engagement in fisheries and ocean governance at the local, national and regional levels and enhancement of associated livelihoods that take gender considerations into account. It will include a database on existing civil society organizations and small and micro enterprises that should be targeted for capacity building and engagement. It will also include a database on existing capacity building initiatives and identify opportunities for coordination and synergies. The final draft of the C-SAP is expected to be completed by the end of 2018. In her opening remarks at a C-SAP development meeting among 18 CSOs and SMEs from 14 CLME+ countries in February 2018, Nicole Leotaud, Executive Director of the Caribbean Natural Resources Institute (the CLME+ co-executing partner leading the C-SAP and corresponding Small Grants Coordinating Mechanism development), noted, "This is the first time that I know of where funding has been dedicated under a project to shape the role of civil society in marine governance and management". She then added "if we get this right, it is potentially a model that can be taken to governments and donors to say civil society can play a role, help us" (CLME+ Project, 2018). The Small Grants Coordinating Mechanism will lay out a framework for engagement of and coordination and collaboration among the various small grant programs supporting civil society organization and small and micro enterprises in relevant areas to meet priorities under the SAP. It will include a framework for ongoing mapping of existing initiatives, exchange of best practices, and tracking of contribution to achievement of the SAP.

IMPLEMENTATION: MAKING REALITY OF REFORM

CLME+ PARTNERSHIP AND ALLIANCE

The SAP cannot be implemented by a single organization, project or initiative. An upscaling of efforts and enhanced coordination and collaboration among key programmes, projects and initiatives, and among the different organizations and sectors of society working or with a stake in the marine environment, will be essential to combat the size and variety of the marine environment issues in the CLME+ region.

With the facilitation and support of the CLME+ Project, a wide-ranging, global and multi-stakeholder partnership for the marine environment of the CLME+ region is being mobilized. The Project's *Global Partnership for the Sustainable Management, Use and Protection of the Caribbean and North Brazil Shelf Large Marine Ecosystems* ("CLME+ Partnership") aims to ensure better coordination, collaboration, complementarity, and cost-effectiveness among, and oversight of, the many efforts and initiatives on the marine environment in the CLME+ region, and to promote the engagement and upscaling of actions by all sectors of society, to realize the vision of the CLME+ SAP. The CLME+ Partnership, which will be interactive, responsive, dynamic and evolving, voluntary and non-legally binding, will offer a framework for effective engagement of governments, IGOs, academia, civil society, influential individuals, financial institutions and the private sector. In other words, the CLME+ Partnership will bring together key actors working on pollution reduction, fisheries, and the protection of key coastal and marine assets and capital, such as beaches, tourism hotspots and critical marine habitats (mangroves, coral reefs and seagrass beds). By doing so, more efficient use of limited resources can be promoted, lessons learnt and best practices can be exchanged, enhanced oversight of status and progress can be achieved, and specific actions and investments can be better tailored to those areas where positive impacts from such actions will most benefit the environment and human society. There is no membership cost. The first Forum Meeting of the CLME+ Partnership took place in June 2018.

The CLME+ Partnership includes two types of members: Core Members and Subscribing Members. The CLME+ Partnership Core Members consists of (a) the countries that have politically endorsed the SAP; and (b) the Parties to the MoU that establishes and governs the *Interim Coordination Mechanism for the Sustainable Management, Use and Protection of Shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystem* (SAP ICM). The SAP ICM invites key stakeholders to become Subscribing Members. Outside Core Membership automatic participation, membership of the CLME+ Partnership is formalized through either the signing and formal submission by the invited prospective member to the CLME+ Partnership Secretariat, and the subsequent signing for acceptance by the Secretariat. Subscribing Members will include a wide range of stakeholders, such as governments, IGOs, UN Agencies, private companies and entities, donors, development partners and banks, universities, and the media, among others.

The CLME+ Alliance is automatic for all CLME+ Partnership Members. It will further be open for membership to organizations and individuals who would not be able or required to coordinate their actions with the SAP ICM, but who desire to subscribe to the long-term vision for the CLME+ region, and who pledge to actively contribute to the sustainable management, use and protection of the CLME+ region.

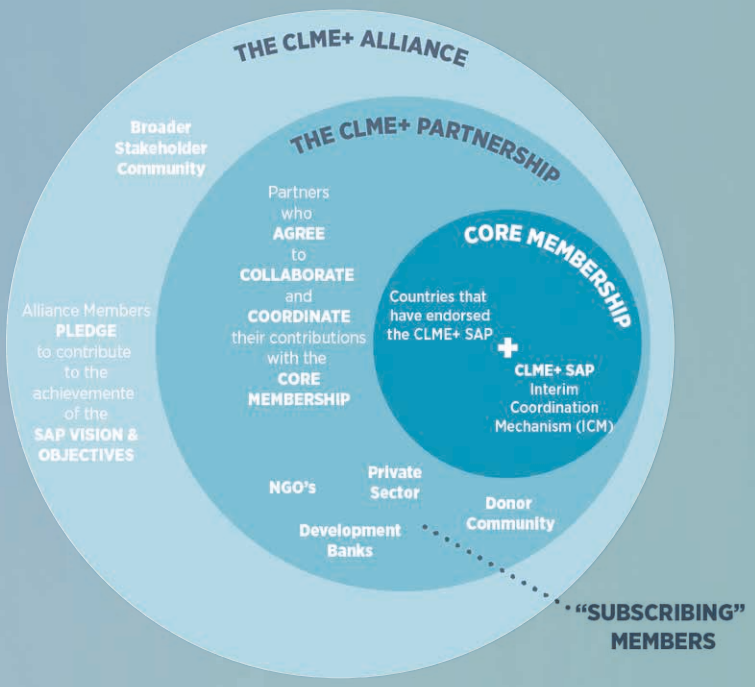
CLME+ STRATEGIC ACTION PROGRAMME AND FISHERIES INTERIM COORDINATION MECHANISMS

The SAP ICM is at the heart of the CLME+ Partnership. It was formally established in July 2017 through a MoU signed by five Core Member inter-regional government organizations: Organization of the Central American Fisheries and Aquaculture Sector; the Central American Commission for Environment and Development; the Caribbean Community Secretariat; the Caribbean Regional Fisheries Mechanism; and the Organization of Eastern Caribbean States Comm-ission. It was subsequently agreed to by the WECAFC-FAO, UNESCO-IOC, and UN Environment, represented by its Caribbean Regional Coordinating Unit and Secretariat to the Cartagena Convention. The SAP ICM contributes to the coordinated implementation of the SAP; monitors, evaluates and reports on SAP implementation progress; and catalyzes the progressive expansion of the CLME+ Partnership and Alliance. In addition to SAP priorities, new and emerging issues affecting the CLME+ marine environment may be put on the ICM's agenda. The Interim Coordination Mechanism for Sustainable Fisheries was established by MoU in January 2016 among three Regional Fisheries Bodies (CRFM, OSPESCA, and WECAFC-FAO) to facilitate, support and strengthen the coordination of actions among the three RFBs to increase the sustainability of fisheries in the CLME+ region. Within the Fisheries ICM the three RFBs agreed to work toward harmonization of their respective policy and legal frameworks for fisheries; to cooperate on relevant scientific and fisheries management projects; to establish reciprocal observer arrangements; and to share reports of their sessions and meetings of their subsidiary bodies and projects.

THE CLME + PARTNERSHIP

FIGURE 3

Credit: CLME+ Project, 2018

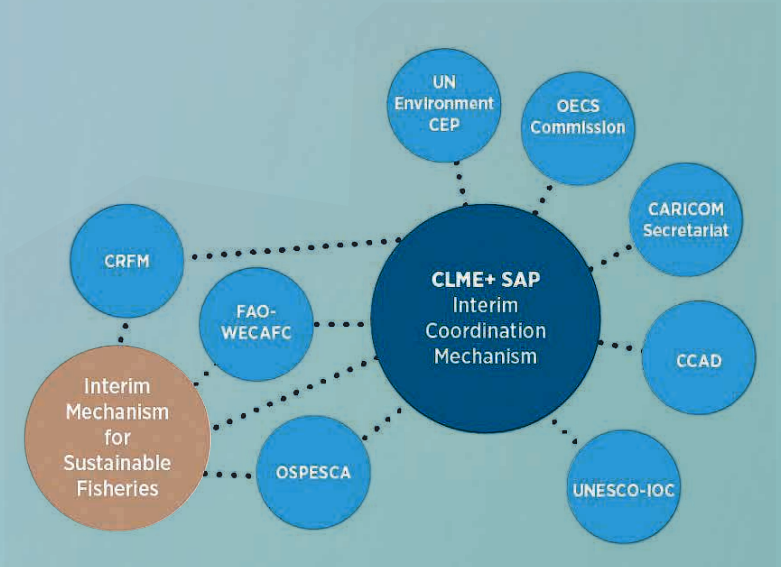


CLME+SAP INTERIM COORDINATION MECHANISMS

FIGURE 4

THE CLME + SAP ICM= AT THE CORE OF THE CLME + PARTNERSHIP

Credit: CLME+ Project, 2018



Credit: iStock by Altinosmanaj, 2017

Habitat degradation is a priority CLME+ environmental problem highlighted in the TDAs

The Fisheries ICM will also increase the uptake of information and fisheries management advice generated at the national and sub-regional levels to the regional level. The three RFBs agreed to work on a number of priority areas, such as the provision of advice in support of management of fisheries of spiny lobster, queen conch, shrimp and ground fish, recreational fisheries, flying fish, Fish Aggregating Device fisheries, sharks, spawning aggregations, and Illegal, Unreported and Unregulated (IUU) Fisheries. Joint Working Groups on these species and fisheries have been established in recent years and are now better coordinated. The three RFBs have also agreed to work on areas and actions identified in the CLME+ Project and the SAP that are of relevance to the scope of work. The three RFBs have also committed to working towards the harmonization of their respective fisheries policy and legal frameworks. The Fisheries ICM will also provide a pilot structure to establish a Regional Fisheries Management Organization for the Western Central Atlantic Ocean. "This is a strategically significant development that should produce significant tangible benefits for our countries, coastal communities and other stakeholders in the fisheries sector. It will ensure that our policies, programmes and plans for sustainable use, management and conservation of the living marine resources are more coherent, integrated and holistic, and hence more appropriate for addressing the challenges we face in the Caribbean Sea and adjacent Atlantic Ocean", CRFM Executive Director Milton Haughton told the FAO in February 2016 (FAO, 2016).

MORE ONLINE

CLME Project *https://clmeproject.org*
CLME Hub *https://clmeplus.org/*
GEF Project Page
https://www.thegef.org/project/sustainable-management-shared-marine-resources-caribbean-large-marine-ecosystem-clme-and
GEF Project Page
https://www.thegef.org/project/catalyzing-implementation-strategic-action-programme-sustainable-management-shared-living

IMPROVED STATE

WHOLE-OF-SOCIETY APPROACH

The interactive governance approach calls for the whole of public, civil and private sector interactions taken to solve societal problems and create societal opportunities. In line with SDG 17, the CLME+ Partnership has been established and mobilized to ensure interactive governance of the CLME+ region marine environment. It will promote and secure the engagement and upscaling of actions by all sectors of society, so that the long-term vision of the CLME+ SAP can be made a reality in the coming decades.

Specifically, the installed Partnership can be used to:
(1) strengthen consensus among partners, whenever relevant and deemed beneficial, on approaches and strategies for addressing the threats to the marine environment, as well as their root causes, and to exploit and promote the exploitation of sustainable marine-based socioeconomic development opportunities and goals;
(2) build confidence through collaborative projects and programmes;
(3) promote and secure the engagement and upscaling of actions by all sectors of society;
(4) reduce regional disparities in capacity for sustainable ocean and marine resources governance and management;
(5) facilitate enhanced oversight of efforts undertaken in the context of the Partnership;
(6) jointly track and document progress toward the long-term vision for the marine environment;
(7) assist in raising awareness, contribute to the development of capacities, and facilitate and contribute to the exchange of technologies and knowledge, including best practices and lessons learnt of stakeholders, building on the best available science and knowledge; and
(8) help leverage required resources.

The Partnership will also assist the region in achieving global and regional goals and targets, including those set under SDG14, the Aichi Targets, and the LBS and SPAW Protocols of the Cartagena Convention. In alignment with its goal, the CLME+ Partnership is intended to be a long-term partnership arrangement ●

IMPLEMENTING INTEGRATED WATER RESOURCES MANAGEMENT IN THE ATLANTIC AND INDIAN OCEAN SIDS

Credit: AIO SIDS Project Flickr, 2016

DEMONSTRATING RIDGE-TO-REEF APPROACHES THROUGH A PARTICIPATORY PROCESS

This story is about a multi-stakeholder, cross-sectoral participatory planning and implementation approach that introduced a new way of addressing water resources challenges and planning at the local and national levels in SIDS, with demonstration projects playing the role of reference on IWRM principles. With examples from Cabo Verde and Comoros, it is a story about how every islander has a role to play to protect freshwater and the healthy ecosystems that provide it; and about how securing water for a SIDS' future is everyone's responsibility, from communities to policymakers, to students and politicians, farmers and hotel managers.

INITIAL STATE

Small Island Developing States (SIDS) have particular needs and specific issues in relation to sustainable development and environment that are not relevant, or of such a high priority, to larger countries on the continental landmasses. These include a limited resource base (human and natural); a limited land area for development; a limited set of economic options; consequent intense competition between development priorities, the environment and associated biodiversity; and vulnerability to extreme events in the face of restricted movement and limited settlement options.

Cabo Verde, São Tomé and Príncipe, Comoros, Seychelles, Maldives and Mauritius—SIDS located in the Atlantic and Indian Oceans (AIO)—differ profoundly in size and level of economic development, but share problems relating to the scarcity and contamination of freshwater supplies; overexploitation and poor management of groundwater resources; increasing pressure on agricultural production; and rapidly disappearing biodiversity. To a lesser or greater degree, these SIDS also face serious difficulties with providing access to clean drinking water, sanitation services, and liquid and solid waste management facilities to their people.

This story covers two of the six AIO SIDS: Cabo Verde and Comoros.

AIO SIDS MAP 4

Credit: AIO SIDS Project, 2018

CABO VERDE

Cabo Verde is an archipelago, consisting of ten islands, 13 islets and a population of 550,000, off the northwest coast of Africa (AIO SIDS Project, 2018). The climate is subtropical dry, and characterized by a short rainy season from July to October. The mainstay of the economy is tourism and fishing, along with fish processing.

Tarrafal, a coastal area on the island of Santiago, faces serious challenges with respect to the overexploitation of its ground-water, limited water available for agricultural use, coastal water quality, and sanitation services for its residents. The town is growing fast; and the adjacent Colonato agricultural area is shrinking, owing to a lack of water for irrigation and saltwater intrusion to coastal aquifers, caused in part by the extraction of sand from beaches for construction. Although the Municipality of Tarrafal has established a sanitation infrastructure, many households had yet to be connected to the system.

COMOROS

Comoros is located in the Indian Ocean at the northern end of the Mozambique Channel. It is formed by three main islands—Grande Comore, Mohéli and Anjouan—and a number of minor islets. It is among the least developed countries in the world, with about half the population living below the poverty line. More than 80 percent of Comorans are dependent on agriculture and fishing for their livelihoods (AIO SIDS Project, 2018). Staple crops include bananas, cassava and taro, while cloves, ylang-ylang and vanilla are grown for export.

Mutsamudu, Anjouan, is the second largest city in Comoros and home to about 30,000 people, all of whom depend on the water resources of the Mutsamudu River— a catchment that is under extreme pressure from increased abstraction, pollution from solid waste and degradation from deforestation and poor agricultural practices. The city's water infrastructure is inadequate, poorly maintained and unable to meet the needs of a growing population.

TRANSFORMATION
GOVERNANCE REFORM PROCESS

ASSESSMENT, ANALYSIS AND CONSENSUS BUILDING

THE INTEGRATED WATER RESOURCES MANAGEMENT APPROACH

Water is a valuable and scarce resource in SIDS. Water resources must be managed in an integrated manner, linked to other management tools and frameworks, such as catchment management, aquifer management, coastal zone management, wastewater management and waste management. The Integrated Water Resources Management (IWRM) approach offers solutions to the water crisis in linking water to other vital resources and viewing the whole water cycle together with human interventions as the basis for sustainable water management. IWRM strategies are based on the following principles:

(1) Multiple Uses of Water, recognizing that water is needed for different purposes, functions and services, and should be integrated and take account of both demand for and threat to the resource;

(2) Participatory Approach, involving users, planners and policymakers at all levels in the decision-making process and where local communities make decisions about their resources;

(3) Role of Women, recognizing that women play a key role in the collection and safeguarding of water for domestic purposes and, in many instances, agricultural use;

(4) Holistic Management, where both the supply of and the demand for water should be considered when creating management strategies; and

(5) Multiple Integrated Perspectives, recognizing that water is an economic, social and environmental good (AIO SIDS Project, 2018).

IWRM DEMONSTRATION PROJECTS IN SIX AIO SIDS

The GEF project, Implementing Integrated Water Resources Management in the Atlantic and Indian Ocean Small Island Developing States (IWRM AIO SIDS), jointly implemented by UNDP and UN Environment, has worked to strengthen the commitment and capacity of six participating countries (Cabo Verde, São Tomé and Príncipe, Comoros, Seychelles, Maldives and Mauritius) to implement an integrated, ecosystem-based approach to the management of their freshwater resources, and to improve their water use efficiency. In doing so, the project implemented country-driven and designed demonstration activities focusing on utilizing ridge-to-reef approaches to bring real and tangible on-the-ground environmental stress reduction solutions to common water resource and sanitation services challenges in each of the beneficiary SIDS. These demonstrations were aimed to act as catalysts for replication and scaling up to improve sustainable water resources management at the national level.

During the project preparatory phase, the project and each country undertook a national diagnostic and hotspot analysis to assess the current status, priority issues, threats and barriers to effective IWRM in-country, and to determine the best entry point and location for their respective targeted IWRM demonstration project. Cabo Verde, Maldives, Mauritius and Seychelles put a strong emphasis on the protection and sustainable utilization of groundwater resources and protection against pollution and seawater intrusion, and using integrated abstraction, water demand and supply, wastewater and land use management approa-ches. Comoros and Sâo Tomé and Príncipe focused on watershed pollution control and land use management.

The project held participatory IWRM planning and implementation workshops in all six SIDS to launch the demo projects and to:

(1) help local stakeholders understand their respective demo project's objectives, budgets, targets and indicators;

(2) to define their own roles, responsibilities and modalities for effective participation in implementation of their projects; and

(3) to provide inputs toward the communication and awareness raising plans for their projects. These workshops were carried out with the support of UNDP Cap-Net, which provided IWRM expert facilitation services. A key output of the workshops was an established stakeholder coordination platform in each demo project community (comprising comm-unity level stakeholders from different sectors and national and local authorities), mandated to support implementation. These platforms built ownership, transparency and accountability in planning and resource allocation.

COMMITMENT, PLANNING AND COORDINATION

CABO VERDE

Tourism represents about 21 percent of Cabo Verde's GDP and has huge potential for expansion across the country (AIO SIDS Project, 2018). The sector, however, negatively impacts the country through correlated increases in on-island population and water consumption. The Cabo Verde government chose Tarrafal for its IWRM demo project because of the coastal fishing town's rising popularity as a tourist destination and its serious challenges with respect to the overexploitation of its groundwater—the source of clean drinking water and sanitation services to its residents. The demo project's aim was to improve sustainable water management through improved wastewater treatment and reuse for agricultural irrigation, with a specific focus on supporting improved related infrastructure and farmers' livelihoods, reducing impacts of saline intrusion through supporting salt tolerant revegetation and reducing coastal discharges. The demo also planned to support and promote awareness raising of the tourism and water consumption issue and to mainstream water and environmental management into Cabo Verde's national tourism policy.

The National Directorate of Environment under the Ministry of Environment, Housing and Land Use (currently the Ministry of Agriculture and Environment) was the lead agency and responsible for project implementation at the national level. The government appointed a national team from its permanent staff members, which included the Director General for Environment, who provided oversight as the national focal point of the project. The Director of Natural Resources was appointed as the demo project's national coordinator. The Tarrafal Municipality and Águas de Santiago (ADS) were the main beneficiaries of the project. (The project supported the Municipality in improving sanitation and in building new infrastructure that would be managed by ADS.) wzThe Tarrafal Farmers Association was a beneficiary and a partner who supported and executed all demo activities directly linked to farmers.

COMOROS

Anjouan, a mountainous island in Comoros, once had more than 40 rivers. But owing to climate change and its ancillary consequences, today there are seven rivers left, and water has become very scarce. For the people of Mutsamudu, Anjouan, the second largest city in Comoros, their Mutsamudu River has been badly affected by high sediment loading and pollution caused by solid waste, leading to poor water quality for residents. Through the diagnostic and hotspot analysis, the Comoran government determined that an integrated approach was needed to tackle the problems of pollution and erosion in Mutsamudu, and the city became the site for the Comoros IWRM demonstration project. The project aimed to improve raw water supply quality to the town of Mutsamudu through improving solid waste management practices in the upstream watershed (water supply catchment) and peri-urban farming around the system reservoir. Activities to this end would be supported by water resources assessment and monitoring and awareness raising campaigns, and used to develop and implement a multi-issue watershed management plan.

The Vice Presidency in charge of the Ministry of Environment, Energy and Land Management was the lead ministry responsible for demo project implementation. The Directorate General for Environment and Forest supervised the different activities of the demo project. One of the outcomes of the Comoros demo participatory planning workshop was the establishment of a multi-stakeholder coordination committee for the whole island of Anjouan. The committee provided a venue for stakeholder participation and engagement throughout the project implementation period, with quarterly meetings to review progress and joint planning of activities. The committee ultimately became a focal point and platform for the island to discuss water resources issues, and a reference point for other projects on water, demonstrating the value of cross-sectoral and multi-stakeholder coordination at the local level. It is still meeting on a regular basis and has addressed a number of issues since the close of the demo project, including on conflicts over land ownership in the Mutsamudu catchment.

IMPLEMENTATION: MAKING REALITY OF REFORM

CABO VERDE: COMBATTING POVERTY THROUGH THE USE OF TREATED WASTEWATER

The project began with a baseline study to evaluate the efficiency of the Tarrafal wastewater treatment plant (WWTP). The aim was to identify opportunities for improvements to the WWTP and to determine the technical criteria for household connections to the sewerage network. The analysis showed that the WWTP did not have sufficient flow compared to its dimensions; it functioned well below its capacity; and the treated water was never used for a specific purpose, making the retention time in the maturation pond very high, which has contributed over time to the increase in the concentration of salts present in the treated water due to evaporation.

This study was followed by a socioeconomic study of the poorest households to identify those most in need of a sewerage connection. Based on a participatory agreed upon criteria, which took into account socioeconomic status, 400 households were selected. In parallel, a study to map the existing sewerage network in a Geographic Information System was finalized to present a clear view of the houses selected for connection and to have an inventory of all households already connected to Tarrafal's sewerage network.

Of the 400 households selected, 365 have been connected to the main sewerage system, increasing the amount of water inflow to the WTTP from 179m^3 to 350m^3 per day (representing a more than 50 percent increase in volume of wastewater that can be used for irrigation once treated) (AIO SIDS Project, 2018). Left unconnected and untreated, this water would have otherwise leaked into the aquifer or directly to the marine ecosystem. Tarrafal is a municipality with serious sanitation problems related in part to poor sanitation infrastructure and outdoor defecation. In some areas, especially in the most remote areas of the coast, the terrain is very rocky, making it difficult for families to build large septic tanks. As a result, families build small tanks but cannot pay for the tanks to be emptied regularly, meaning waste leaks into the aquifer. To combat this issue, the project provided 88 of the most vulnerable households with new toilet systems to replace the inefficient septic systems.

To direct the water from the WWTP to new plots of agriculture located in the Colonato area (established under the project), a 2000-metre additional network was built, supported by the project, with a pumping station that elevates the treated water to a 100m^3 reservoir where it can then be distributed to the plots through gravity. Colonato farmers were trained in agricultural production using treated wastewater under a micro-drip irrigation system and were provided with micro irrigation kits for efficient use of water in agricultural production. To convince the farmers that it is safe to use treated wastewater in agriculture, an exchange programme was instituted, sending the farmers to other parts of Cabo Verde where the method of farming was being practiced successfully. Women farmers were trained on tree planting and measures to prevent coastal erosion and saltwater intrusion into the aquifer. In total, 3,000 fruit trees and 1,000 halophyte (salt tolerant) plants were planted, forming a living barrier against erosion and leading to improvements in soil in the Colonato agricultural area.

To promote project awareness, a targeted communication strategy was developed and included performances by local theatre groups, photo competitions, exhibitions at local fairs and visits to schools. A local radio station broadcasted a programme to raise awareness about wastewater reuse. The campaigning also targeted the hotels in Tarrafal in order to promote best practices and optimize water consumption. At the national level, the general public was sensitized through live events and documentaries aired by the national media.

COMOROS: IMPROVING WATER SOURCE PROTECTION

The Comoros demo began with a water resources assessment and geospatial mapping of the Mutsamudu Basin, which helped determine the quality and quantity of surface and groundwater resources in the area. Along with studies on socioeconomic drivers and economic valuation, the assessments formed the basis for an integrated watershed management plan, which was developed through a participatory approach in consultation with landowners and local communities, and approved by the Island Government. Community support, through the establishment of the Mutsamudu Catchment Management Committee, as part of the implementation of the watershed management plan, was considered critical to the success of the demo project.

The project provided technical assistance to protect the reservoir on the river, which is surrounded by small-scale farmers whose traditional farming methods have resulted in a high degree of soil erosion from wind and rain, causing siltation and blocking of the municipality's water infrastructure and degradation of the river. Through 52 pilot sites, the project worked with the farmers, demonstrating the impact of their practices on the environment and on water quality, and introducing techniques that make cultivation easier, increase yields and protect natural resources. The project helped build a secure, waterproof shed with a concrete base as a store for fertilizers kept on farms in the reservoir area as one measure to prevent soil erosion. A solid waste management collection service was established, with support from the Anjouan Municipality and the Island Government, to remove and manage the solid waste that has been polluting the river, particularly in the area upstream of the municipal water supply intake. A truck, co-financed by the Island Government and the project, has been supporting operations. In collaboration with the UNDP Office in Comoros, the project installed a chlorination system to ensure that residents on the river catchment enjoy safe potable water.

An agreement between the Directorate General for Environment and Forests, the Directorate for Water Quality and the University of Comoros was reached to undertake regular monitoring of the basin. Under the agreement, the laboratory of the University was refurbished and equipped with new equipment for water quality monitoring and it now has the capacity to conduct bacterial, chemical and physical analyses of water samples collected from the Matsumudu and other rivers on Anjouan. This not only allowed the demonstration project team to monitor the impact that the IWRM plan has on water quality in the Matsumudu Basin, it also provides early warning to residents in the event that water becomes dangerously contaminated. The quality of the water in the Mutsamudu River is now being routinely tested.

Strengthening these interventions was an inclusive public awareness campaign that aimed at engaging the people of Mutsamudu in an effort to keep the river clean. This campaign quickly gained momentum, with students from the university joining local residents and army soldiers (mobilized through the office of the Island Governor), in river cleanups, tree planting excursions, workshops and seminars.

IMPROVED STATE

In Tarrafal, the IWRM demo project is expected to reduce pressure on the environment through the decrease of water abstraction for irrigation and of wastewater discharge into the nearby sea. Decreased water abstraction, coupled with the anti-erosion measures put in place, should ensure an improvement of the soil structure in the Colonato areas, as well as lower saltwater intrusion into the aquifer. The new collections to the sewerage system will significantly improve the functioning of the WWTP and basic sanitation in Tarrafal and will improve the livelihoods of the small-scale farmers by providing a cheaper water source for irrigation, leading to more arable land. Project sustainability will be supported at three levels: agriculture and groundwater protection and water use efficiency activities will be taken over by the Ministry of Agriculture and Environment; the maintenance of the WWTP and quality of the effluent is in the hands of ADS; and the sanitation activities will be carried on by the Municipal Chamber.

In Mutsamudu, the project significantly improved the management of the river catchment. The awareness-raising campaign included major river clean-up activities, coupled with trialing solid waste collection services. These efforts helped pave the way for the regional government to establish a responsible solid waste management system on the island. Small-scale farmers, whose traditional farming practices resulted in a high degree of soil erosion and siltation, have been trained to make their farming practices more productive. These practices are also helping farmers avoid erosion and siltation, working to restore their land and also improve the water quality in the area. IWRM demo implementation motivated the Comoros national government to adopt a National IWRM Plan in 2017.

MORE ONLINE

AIO-IWRM
http://aio-iwrm.org/

GEF Project Page
https://www.thegef.org/project/implementing-integrated-water-resource-and-wastewater-management-atlantic-and-indian-ocean

BUILDING THE FIRST LARGE MARINE ECOSYSTEM CONVENTION AND COMMISSION

Credit: iStock by Fabian Plock, 2017

TRANSITIONING TO ECOSYSTEM-BASED GOVERNANCE OF THE BENGUELA CURRENT LARGE MARINE ECOSYSTEM

This story is about how three coastal countries utilized a strategic science-to-governance planning process to undertake a paradigm shift from sector-by-sector management to multi-sector management from an ecosystem perspective. It also tracks the development of the world's first fully institutionalized and operational intergovernmental, multi-sectoral LME commission.

INITIAL STATE

The Benguela Current Large Marine Ecosystem (BCLME) extends from east of the Cape of Good Hope in South Africa, northward to Cabinda Province in Angola, and encompasses the full extent of Namibia's marine environment. It is one of the richest ecosystems on Earth—with ecosystem goods and services valued at about $US270 billion annually (GEF-UNDP, 2015) primarily acquired through artisanal and large-scale fisheries, large oil, gas and mineral reserves, and tourism. Nicknamed the "Current of Plenty" due to its powerful wind-driven upwelling system, the nutrients that rise from the depths of the ocean along the Benguela Current make the LME a high-level area of primary productivity and a significant player in global ocean processes.

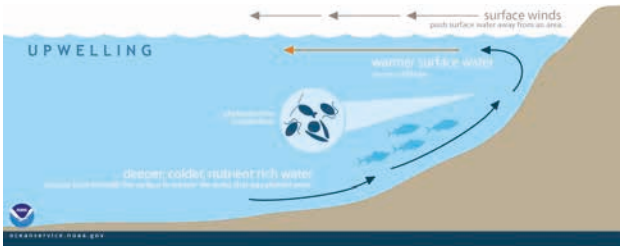
The colonial and political histories of the three countries have left a legacy of fragmented governance of the BCLME, at both the national and transboundary levels, where the management paradigm has focused on single-species and short-term sectoral approaches. Mining concessions, oil and gas exploration, fishing rights and coastal development, for example, have been managed in silos, with little or no proper integration or regard for other uses and users. This unintegrated ocean governance approach is an underlying cause of the main threats to the sustainable development of the BCLME which include **(1)** increasing fishing pressure, including through overfishing, illegal fishing and discard of bycatch, leading to depleted stocks, and in some instances, stock collapse; **(2)** extractions of oil, gas and diamonds from the seabed not based on best practices and international standards, leading to the alteration or destruction of the environment in the vicinity of these extractive activities; and **(3)** pollution hotspots through rapid coastal development.

LARGE MARINE ECOSYSTEMS are relatively large areas of ocean space of about 200,000 km^2 or more, adjacent to the continents, and extending out to the break in a continental shelf or the seaward extent of a current system.

The marine and coastal resources of the Benguela Current Large Marine Ecosystem contribute about **US$270 BILLION** each year to the economies of the region.

UPWELLING PROCESS

FIGURE 5



Credit: NOAA

THE BENGUELA CURRENT LARGE MARINE ECOSYSTEM

MAP 5

Credit: UNDP-GEF, 2013

TRANSFORMATION
GOVERNANCE REFORM PROCESS

ASSESSMENT, ANALYSIS AND CONSENSUS BUILDING

The long-term sustainability of the BCLME is critical to the security and economic development of Angola, Namibia and South Africa. In the mid-1990s, the three governments recognized that their conventional management approaches were not enough, and that they needed to collectively move beyond their jurisdictional boundaries and historical differences and cooperate in the integrated management and sustainable use of their shared marine resources. The governments turned to the UNDP and the GEF, among other development partners, for assistance in facilitating and catalyzing this cooperation; assistance which has now spanned almost two decades through three BCLME projects.

During the preparation for the initial UNDP-GEF "BCLME Programme" (formally launched in 2003), the three countries reached consensus on a strategy for their long-term partnership. Together the countries committed to the LME Approach (shifting from sector-by-sector management to multi-sector management from an ecosystem perspective) and the science-to-governance process through the development of a TDA and a SAP. The countries also ensured that interests of all ocean-use sectors were represented equally throughout the national and transboundary policy discussions.

BCLME TRANSBOUNDARY DIAGNOSTIC ANALYSIS

With support from the BCLME Programme and moderated by an independent facilitator, two regional workshops took place for stakeholders to identify, define and agree on the major elements of the TDA. The first workshop gathered 100 stakeholders representing a cross-section of public and private actors, including from all relevant ministries and agencies in each country and from the various commercial sectors (industrial and artisanal fishing, mining, oil and gas, port authorities, and tourism). The participants identified issues and constraints in BCLME management and corresponding potential solutions to overcoming them. Following this first meeting, working groups made up of national experts prepared thematic reports on the issue areas identified. Small working groups in the second workshop, comprising international LME and BCLME experts, reviewed and synthesized the thematic reports and first workshop outputs to identify, formulate and prioritize the essential elements of the TDA. The TDA was finalized in November 1999. To address the agreed identified threats, the TDA recommended priority action in three broad areas:
(1) sustainable management and utilization of living resources;
(2) assessment of environmental variability, ecosystem impacts and improvement of predictability; and
(3) maintenance of ecosystem health and management of pollution.

> "Sustainable management is not possible without a legal framework such as the one jointly put in place today by the governments of Angola, Namibia and South Africa…The leaders of these countries have clearly shown that it is possible and desirable to see political solutions based on scientific knowledge in order to reverse marine degradation and resource depletion."
>
> **André Laperriere,** *Former Deputy CEO, GEF (at the signing of the Convention in 2013) (UNDP, 2013)*

COMMITMENT, PLANNING AND COORDINATION

BCLME STRATEGIC ACTION PROGRAMME

The corrective and remedial actions proposed through the CCA of identified problems in the TDA became the framework for the SAP. Led by the BCLME Programme, it was subsequently refined by a small group of experts, with opportunities for input by various stakeholders. The SAP sets out the challenges and principles fundamental to integrated marine ecosystem management of the BCLME and specifies the nature, scope and timetable whereby policy actions are to be implemented. It also provides budget projections to deliver those actions. BCLME SAP policy actions are presented in six groupings:
(1) sustainable management and utilization of living marine resources;
(2) management of mining and drilling activities;
(3) assessment of environmental variability, ecosystem impacts and improved of predictability;
(4) management of pollution;
(5) maintenance of ecosystem health and protection of biological diversity; and
(6) capacity strengthening. The TDA-SAP development process created a common platform for Angola, Namibia and South Africa to collectively commit to BCLME legislative, institutional and management reforms in each country, required to realize the sustainable management of the BCLME. The consensus, confidence and trust built among the countries inspired full endorsement of the SAP in 2002.

INTERIM BENGUELA CURRENT COMMISSION

With support from the BCLME Programme, which generated a wealth of information about the LME, the three countries aimed to establish a Benguela Current Commission as a land mark step toward good multi-country, multi-sectoral, LME-based ocean governance, and to engage constructively and peacefully to resolve the transboundary issues that threaten the integrity of the BCLME. Marking the culmination of the BCLME Programme, the Interim Benguela Current Commission (IBCC) was established in January 2007 via an Interim Agreement signed by the three countries. Creating the IBCC was seen as an opportunity to test and strengthen the institutional structures required for a full-fledged permanent commission. The existing management structures under the BCLME Programme, and its sister project, the Benguela Environment Fisheries Interactions and Training (BENEFIT, funded by Norway and Germany), served to support the interim commission until the new structures were made operational. Iceland, through ICEIDA, joined to support the countries under the IBCC to further promote the LME Approach in BCLME governance.

BENGUELA CURRENT CONVENTION AND SAP IMPLEMENTATION

In 2009-2014, the second phase of the UNDP-GEF support ("BCLME SAP Implementation project") played a catalytic role in the development of the Benguela Current Convention and BCLME SAP implementation.

In 2013, after almost two decades of cooperation and high-level policymaker engagement, Angola, Namibia, and South Africa signed the Benguela Current Convention—the first permanent legal framework in the world to be based on the LME Approach to ocean governance. At the heart of the Convention, which entered into force in 2015, is the concept of the long-term, ecosystem approach that prioritizes the sustainable use of ecosystem goods and services, while recognizing that humans are an integral part of the process.

While the Convention recognizes the SAP as the adopted policy document identifying the challenges to the LME and outlining the policy and management actions needed to address those challenges, the Convention embraced a much stronger multi-sectoral approach to ocean governance than the original SAP. The original SAP, endorsed 12 years prior to the Convention, largely focused on an ecosystem-based approach to fisheries. The Convention reflected the current thinking that in order to realize the sustainable utilization and management of the LME, a broader spectrum of stakeholders from the sectors who use ocean space and extract its abundant resources must be engaged in the management discussions and policy and institutional reforms.

The countries reviewed the original TDA and SAP and updated the documents in 2013 to make them fall more in line with the Convention and its objectives, so that the documents would systematically and meaningfully contribute to the Convention implementation. As part of the TDA and SAP updating process, the SAP Implementation project commissioned an economic valuation of the BCLME and a Strategic Environmental Assessment. Both consolidated and raised awareness about the relative economic importance of extractive marine sectors to the national and sub-regional economies, as well as the strategic and economic importance of the non-fisheries sectors as stakeholders of the BCLME. Key findings and policy messages from these assessments were incorporated into the updated SAP.

A new SAP was signed in 2014 by 12 Ministers, four from each Member State, for the 2015-2019 period. The continued commitment by the three countries to SAP was translated into their contribution of more than US$18 million toward SAP implementation, including for staff, laboratories, equipment and the use of research vessels.

At the national level, SAP Implementation Project efforts served to sensitize, capacitate and empower stakeholders about the importance and need for national policy and institutional harmonization with the SAP and Convention to fully enable an integrated transboundary LME management approach.

IMPLEMENTATION: MAKING REALITY OF REFORM

BENGUELA CURRENT COMMISSION

The Benguela Current Commission (BCC), based in Swakopmund, Namibia, constitutes the first fully institutionalized and operational intergovernmental, multi-sectoral LME commission in the world. BCC actions have focused on three critical areas of intervention: preventing marine pollution (from ships, land-based sources, marine mining and oil extraction); strategic alignment of policies, laws, and regulations across multiple sectors (to ensure that industrial activities in one country do not impact

> "The Benguela Current Commission is committed to supporting Angola, Namibia, and South Africa to establish an ecosystem approach to managing the Benguela Current Large Marine Ecosystem. This is a holistic approach to marine and coastal management that strives to balance the many activities that take place in this shared ecosystem… that aims to optimize the use of the Benguela Current ecosystem without damaging it, in line with the objectives of SDG14: Life Under Water."
>
> **Dr. Hishali Hamukuaya,**
> *Executive Secretary of the Benguela Current Commission*

Credit: istock by pum eva, 2014

INTERACTIONS BETWEEN THE BENGUELA CURRENT AND ORANGE-SENQU COMMISSIONS

The Orange-Senqu River, with a basin encompassing the whole of Lesotho and parts of Botswana, Namibia and South Africa, is the largest river discharging into the BCLME. The mouth of the Orange-Senqu is recognized as an internationally important wetland for migratory birds and was accorded Ramsar status in 1991. The four riparian countries established the Orange-Senqu River Commission (ORASECOM) in 2000 as a technical advisory body to its member states to promote joint management and basin-wide cooperation for the sustainable management of the basin resources based on IWRM principles.

Ecologically, the flow and other changes of the Orange-Senqu River Basin (sediment transport, nutrient loads, pollution and other water quality issues) may influence the state of the estuary and the coastal and marine ecosystems of the BCLME. Understanding how the Orange-Senqu River Basin and the BCLME interact and influence each other is essential for ORASECOM and BCC to interact and collaborate for the effective management of the river basin, the estuary and the coastal and marine ecosystems.

With support of the two UNDP-GEF projects, BCC and ORASECOM started engaging each other to establish a common understanding of the ecosystem conditions, in particular those around the Orange River mouth—the wetland officially recognized as "under threat" by the Montreux Record of Wetlands Under Threat. A joint workshop was convened by BCC and ORASECOM in August 2010 to explore the interactions between the Orange-Senqu Basin and the BCLME. The workshop recommended developing an overarching rehabilitation and management plan for the estuary in close cooperation with the Joint Orange River Mouth Management Committee, consisting of the governments of Namibia and South Africa, the relevant provincial government representatives from the two countries, private sector (in particular mining) representatives and concerned citizens. The Strategic Management Plan for the Orange River Mouth Ramsar Site was developed in 2013 with support from the UNDP-GEF BCLME SAPIMP project.

The implementation of the Strategic Management Plan will be supported partly through the upcoming UNDP-GEF support to the Orange-Senqu River Basin SAP Implementation project. In addition to a set of environmental concerns related to the estuary identified during the development of the Strategic Management Plan, new concerns over the impacts of land-based activities on the coastal and marine ecosystems, such as micro plastic pollution, are emerging, and the countries are calling for stronger cooperation between BCC and ORASECOM to address these transboundary environmental issues, with support from UNDP-GEF projects in the coming four years.

on the coastal or marine environment of the others); and transboundary management of fisheries (including monitoring and regulation of fishing activity). The SAP is the BCC's strategic policy document. A SAP Implementation Plan, an operational document that details the activities required to implement the SAP policy actions, serves as a guidance framework for the BCC to develop scientific and management projects to help the BCC meet its objectives.

In addition to assisting the countries with the Convention negotiation process and updating the TDA and SAP, the SAP Implementation Project has made important contributions to building and strengthening the structure and efficiencies of the BCC. It supported the development of a commission strategic plan, a business plan, a data and information policy and protocol, a resource mobilization strategy, and oversight and evaluation committees; and it encouraged the adoption of appropriate financial mechanisms and partnership agreements. It also improved the overall participation of non-fisheries sectors in the Commission. "The SAP Implementation Project has been a true catalyst because it has supported sector integration in the Benguela Current Commission at the LME scale. I expect that these efforts will have major positive impacts in the region if outcomes are sustained and further developed into the future," said Pinehas Auene, Deputy Director, Pollution and Maritime Affairs, Namibia. The involvement of key industry players that are both highly influential and economically dependent on the policies and regulations that govern the BCLME has secured regional ownership in the BCC, which is critical to the institution's effectiveness. A new UNDP-GEF project, "BCLME III", launched in 2018, is now supporting the BCC in its implementation of the SAP at both the national and regional levels.

The Box on the Interactions between the Benguela Current and Orange-Sengu Commissions highlight how different bodies of environmental resource management and protection can collaborate, and how this spurs other parties to become concerned and initiate joint action to related issues. This is an illustration of the interactions being highlighted in a source-to-sea perspective.

IMPROVED STATE

The application of the paradigm shift from a single sector management approach to multi-sector, ecosystem-based governance is taking root in the BCLME. "The [UNDP-GEF projects have] served as a critical central coordinating mechanism which has resonated with the development goals and priorities of each of the countries reliant on the BCLME," explained Nico Willemse, former UNDP-GEF BCLME Project Manager Phase II (GEF-UNDP, 2015). In a joint 2016 journal commentary, government stakeholders from the three countries stated, "The ratification of the [BCC] has taken the governments and people of Angola, Namibia and South Africa considerably closer to their stated intention of implementing ecosystem-based, multi-sectoral ocean governance in the BCLME for sustainable development. Furthermore, the adoption by the countries of SAP 2015-2019 has provided us with a clearly defined strategy that will ensure the BCC meets its objectives. With a clear plan of action, the commitment of the three countries and the support of partners and stakeholders, the BCC is well prepared to address the transboundary issues that threaten the BCLME".

MORE ONLINE

GEF Project Page
https://www.thegef.org/project/implementation-strategic-action-programme-sap-toward-achievement-integrated-management

GEF Project Page
https://www.thegef.org/project/implementation-benguela-current-lme-action-program-restoring-depleted-fisheries-and-reducing

ADVANCING ECOSYSTEM-BASED MANAGEMENT IN THE HUMBOLDT CURRENT LARGE MARINE ECOSYSTEM

Credit: istock by NonChanon, 2017

COMBATTING HABITAT DESTRUCTION AND OVERFISHING TO PRESERVE MARINE ECOLOGICAL INTEGRITY

This is a story that demonstrates how the Ecosystem-Based Management approach, in this case through incorporating the expansion and strengthening of Marine Protected Areas and improving access to fishery resources and markets, can contribute to maintaining the ecological integrity of a Large Marine Ecosystem in the context of changing climatic, economic and social pressures. It is also a story that reflects the incremental nature and long-term engagement process of good governance reform.

INITIAL STATE

The Humboldt Current LME (HCLME) is a complex mosaic of currents and countercurrents extending along the coast of Chile and Peru. The narrow continental shelf and movement of the Current generate local upwellings that harbour massive forage fish stock that feed seabirds and marine mammal populations (including fur seals, sea lions, penguins and biodiverse marine life), which aggregate in and around the abundant narrow beaches and northern rocky points and islands of the ecoregion. Biological assessments have identified more than 25 different habitat types as conservation targets, reflecting the rich biodiversity along the HCLME. These habitats include seamounts, estuaries and submarine canyons, which all host a large quantity of endemic species.

The HCLME's cold and nutrient-rich waters support one of the world's largest fisheries, the Peruvian Anchovy. Once harvested, most of the catch is destined to become oil products and fishmeal to support the world's booming aquaculture industry—an important component of global food supply. The harvest also generates considerable local employment opportunities and income for artisanal fisherfolk, including in anchovy salting and processing plants for direct human consumption.

This unique ecosystem has been placed at risk through overfishing, industrial development, coastal city expansion, tourism, sea traffic growth, agriculture, and mineral extraction practices. It is also particularly vulnerable to the impacts of climate change. During El Niño events, shifting wind patterns and increased sea temperatures result in the layer of warm surface water extending to greater depths, which, in turn, limits upwelling. This translates to variations in fish abundance and distribution, leading to alterations in species dominance and significant changes in flora, which impact the socioeconomic sphere in both countries.

In an early GEF development fund project, a 2003 TDA identified four thematic problem areas in the HCLME:
(1) the suboptimal exploitation of fisheries resources;
(2) insufficient understanding of the Humboldt Current System variability;
(3) threats to the HCLME biodiversity of relevance to the fisheries production; and

HUMBOLDT LARGE MARINE ECOSYSTEM MAP 6

Credit: GEF TWAP, 2016

(4) the situation related to the coastal habitat with impacts from land-based event." Over the next decade, considerable advances were made by Peru and Chile toward improving aspects of all four problem areas. However, many of the threats have instead grown, due to increases in anthropogenic land-based and marine activities.

While both countries had incorporated the concept of Ecosystem-Based Management (EBM) in national legislation, including the need for marine and coastal protected areas, specific mechanisms for its implementation was incipient and required strategic guidance.

TRANSFORMATION
GOVERNANCE REFORM PROCESS

ASSESSMENT, ANALYSIS AND CONSENSUS BUILDING

TOWARD ECOSYSTEM-BASED MANAGEMENT OF THE HCLME

EBM is an integrated management approach that recognizes the full array of interactions within an ecosystem, rather than considering single issues, species or ecosystem services in isolation (NOAA, 2018). Importantly, it recognizes that people are an integral part of natural ecosystems and that effective management solutions must involve all relevant sectors of society. In the mid-2000s, the governments of Peru and Chile sought a targeted intervention strategy to advance their EBM efforts.

At this time, there were a number of identified barriers to effective EBM in the HCLME. Government institutions responsible for managing coastal and marine systems were fragmented and tended to be organized along administrative rather than ecological boundaries; existing data and information on the LME was incomplete and dispersed, and not translated for decision makers; sectoral development in both countries focused on national issues and short-term interventions that did not take into account linkages at the ecosystem level; and there was no common binational vision of the ecosystem as such, nor mechanisms for agreeing on priorities and for collaborative action and reforms for joint LME management.

The two governments requested GEF and UNDP support to overcome these barriers. A project, beginning in 2010, set out to install holistic EBM for managing fish and other marine resources based on the five modules of the LME Approach: (1) ocean productivity; (2) fish and fisheries; (3) ecosystem health; (4) socioeconomics; and (5) governance. Specifically, the project aimed to establish and strengthen Marine Protected Areas (MPAs) and fisheries management tools as part of a developed and endorsed binational SAP to implement EBM and to put in place measures to address policy and capacity gaps that presented barriers to the design and implementation of the SAP.

MARINE PROTECTED AREAS

MPAs are geographic spaces that have been designated to conserve and enhance marine resources through restrictions on certain activities taking place in those spaces. These can serve a variety of purposes: conserve marine biodiversity; protect important ecosystem habitats, species and cultural resources; support scientific research; provide places and opportunities for tourism and education; and enhance fish stocks. Fish stocks inside these areas can serve as a "bank account" or insurance against fluctuations in and collapse of populations outside the protected area, due to mismanagement or natural variability. SDG 14 sets a target of ten percent of the ocean being set aside as MPAs.

In both Chile and Peru, there were few refuges from the identified pressures, and protected area systems have been heavily skewed to terrestrial areas. At the time of project inception, less than 0.4 percent of the coastal area was under any form of protection in Peru and the only marine area under a management category corresponded to the area adjacent to a natural reserve. In Chile, the majority of coastal and marine protected areas were not situated close to fishing villages, instead encompassing extensive areas of ocean some distance offshore (UNDP, 2016). Recognizing that the MPA paradigm is a key component of EBM, the MPA tool became a key element of the GEF-UNDP project intervention.

COMMITMENT, PLANNING AND COORDINATION

A PARTICIPATORY APPROACH

The project established five multi-sectoral technical working groups for each of the LME Approach modules. These working groups—comprised of the Chilean and Peruvian governments, their respective fisheries research institutions, IFOP and IMARPE, industrial and artisanal fisherfolk associations, tourism operators, voluntary national park guards, university associations, fish processing and hatchery operating companies, and local and international NGOs—operated nationally and bi-nationally, and were instrumental in the delivery of ecosystem diagnostic analyses and an updated TDA, as well as the SAP.

The project was effective in sensitizing local communities and society as a whole about environmental problems and the need to adopt an EBM approach to managing the LME. More than 5,000 people from relevant sectors and public agencies were trained under the project in the EBM approach and solutions. In addition, about 1,000 people from local communities, trade unions, environmental organizations, technical cadres and government agencies participated in meetings and workshops aimed at promoting the management of marine and coastal protected areas. "We can thank stakeholders from both countries, the UNDP and the GEF for bringing people together to create links and partnerships which have encouraged regional cooperation for the common good of both the HCLME and the coastal peoples of Peru and Chile," said Michael Akester, National Coordinator, Humboldt Current LME Project I.

TRANSZONAL DIAGNOSTIC ANALYSIS

Building on the initial 2003 TDA, the updated analysis in 2013 agreed to adopt the term 'transzonal' as synonymous with 'transboundary', with the former defined as "that which happens or is caused in the territorial waters of one country causing an impairment in the provision of HCLME goods and services in the territorial waters of both countries." The main threats to the HCLME identified in the 'Transzonal' TDA are overfishing and habitat destruction. Among the root causes for overfishing identified were: "increase in the demand of fishery products" and "limited binational coordination for ecosystem approach research and management." Relating to habitat destruction, root causes identified included: "
(1) insufficient knowledge and assessment of the goods and services of the LME;
(2) limited multi-sector articulation; and
(3) insufficient management of coastal marine zone under an ecosystem approach."

STRATEGIC ACTION PROGRAMME

The four-year TDA development was followed by an 18-month SAP design period. The SAP is a framework for coordinated action between Chile and Peru envisioning "A healthy and resilient HCLME through an ecosystem approach to management that guarantees the conservation and sustainable use of its goods and services for the benefit of the people." The document establishes priorities for action, strategic direction and the political commitments to address the major problems of the LME. The SAP contains five express actions:
(1) restore and maintain optimal population levels of main fishery resources considering the environmental variability while maintaining the health and productivity of the ecosystem;
(2) improve the environmental quality of coastal and marine ecosystems through integrated management;
(3) restore and maintain habitat and biodiversity of marine and coastal systems to a sustainable level [including through establishing different conservation instruments, such as MPAs];
(4) diversify and add value, creating productive opportunities inside and outside the fishing sector; and
(5) contribute to the food security of the population."
The two countries signed the SAP at ministerial level in 2016 and its implementation will be catalyzed through a new GEF-UNDP project, designed with stakeholders from Chile and Peru, in late 2018.

IMPLEMENTATION: MAKING REALITY OF REFORM

IMPROVING ACCESS TO FISHERY RESOURCES AND MARKETS

A key component of the HCLME project was to encourage the Marine Stewardship Council (MSC) certification scheme for fisheries that are targeted for human consumption. MSC certification certifies to consumers that a fishery has been independently validated as being well managed and harvested in a sustainable manner, which secures access to the rapidly growing market for sustainable seafood products and further fosters sustainable harvesting practices. The MSC Fisheries Standard has three core principles that every fishery must meet: **(1)** Sustainable fish stocks: Are enough fish left in the ocean? Fishing must be at a level that ensures it can continue indefinitely and the fish population can remain productive and healthy; **(2)** Minimizing environmental impact: What are the impacts? Fishing activity must be managed carefully so that other species and habitats within the ecosystem remain healthy; and **(3)** Effective fisheries management: Are operations well managed? MSC certified fisheries must comply with relevant laws and be able to adapt to changing environmental circumstances.

MARINE STEWARDSHIP COUNCIL CERTIFICATION SCHEME FIGURE 6

Credit: Marine Stewardship Council, 2016

Project counterpart funds in Chile, for example, were used to support MSC certification for the small-scale fishery of Juan Fernandez Archipelago (JFA) lobster in 2015, the first artisanal fishery to be certified in the southeast Pacific. Lobsters from the JFA, which are mainly exported to China and France, are now eligible to carry the blue MSC ecolabel. By meeting the MSC standard, the fishery is helping to ensure future supplies of lobster as a source of revenue for the 800 inhabitants of these islands, located 400 miles from Chile's mainland. The success with which EBM has been applied by the local authorities and island communities is demonstrated by the fact that it was the islanders who initiated the requests for certification of the fishery.
In the medium term the JFA lobster fishery plans to move toward the MSC Chain of Custody standard for traceability of seafood products that involves eco-labeling of seafood products from a certified sustainable fishery. Two other Chilean fisheries and the Peruvian anchovy fishery are working toward the MSC Fisheries standard.

IMPROVED MONITORING THROUGH THE OCEAN HEALTH INDEX

The project, in conjunction with Conservation International, promoted the Ocean Health Index (OHI), an increasingly accepted measure of ocean health based on 10 globally applicable indicators, to improve assessments in Chile and Peru. The OHI evaluates the condition of marine ecosystems according to 10 human goals that represent the key ecological, social, and economic benefits that a healthy ocean provides: food provision; artisanal fishing opportunities; natural products; carbon storage; coastal protection; coastal livelihoods and economies; tourism and recreation; sense of place; clean waters; and biodiversity. By providing a means to advance comprehensive ocean policy and compare future progress, the OHI can inform decisions about how to use or protect marine ecosystems. Once assembled, one application for the data will be to improve climate change monitoring. El Niño and La Niña ocean-atmosphere disruptions impact marine ecosystems and anchovy production at local, regional and global levels, and OHI data will assist in the development of adaptation strategies for the anchovy fisheries.

Credit: iStock by skinfaxi, 2017

"[EBM] requires that the creation and management of protected areas takes place alongside sustainable use of resources. In Chile and Peru, this involved engaging all stakeholders in the establishment, zonation and management of protected areas to allow for co-managed fisheries, tourism and other economic activities such as guano collection. This engagement process takes time and moving ahead too quickly leads to a series of backtracks."

Michael Akester,
National Coordinator, Humboldt Current LME Project I (GEF-UNDP, 2017)

MARINE PROTECTED AREAS AND MASTER PLANS

To implement SAP Action 3, the project carried out activities at four pilot areas—three in Peru and one in Chile— to address the political, administrative, technical and financial barriers for the establishment of MPAs for the HCLME. Pilot activities were designed to develop and test a number of management and threat abatement tools that could be upscaled to the systemic level. These sites were identified and selected in the early stages of the project using criteria that included global biodiversity value, potential resource generation, stakeholder interest and threat mitigation potential.

The Guano Islands off the coast of Peru support large populations of nesting birds and large marine mammals, such as fur seals and sea lions. The Guano Islands and Capes National Park, established in 2010 as the third protected area in Peru, is unique, as there is no other land-sea protected area covering the entire length of a country's seaboard. The park creates connectivity among the 22 islands and 11 cape sites, which include some of the most important upwelling areas in the HCLME, resulting in high primary productivity and forming the basis of globally significant fisheries. "Managing the Guano Islands is a daunting task, because it comprises so many sites over such a large area," said Mariano Valverde, Director of the Guano Islands National Park, Peru. Mr. Valverde explained, "The [HCLME] project provided critically important support through the development of a Master Plan for the national park [approved by Presidential Decree in April 2016], strengthening the capacity of the management agency, and involving stakeholders in management of marine resources. It also contributed to the creation of inter-institutional coordination spaces and facilitated bi-national cooperation—an important breakthrough, as our conservation efforts had previously been hampered by a lack of coordination. The adoption of the [EBM] approach was effective in bringing about a significant change of attitudes amongst local communities toward marine protection. Generally, the training provided through the project helped build a better understanding of sustainability and provided practical guidelines and management strategies for reducing overfishing. The role of marine protected areas in safeguarding the fishery also became clearer. Our staff received training in many subjects and took part in learning exchanges with protected area managers in other countries. Personally, I found that sharing experiences with my counterparts in other countries helped re-shape my vision and approach to protected area management and binational cooperation. Above all, the lasting impact of this work has been that it involved and secured the commitment of people from all levels in society for conservation of our [LME]." (GEF-UNDP, 2017)

The JFA Area in Chile, which centers on Robinson Crusoe and Alejandro Selkirk Islands, is located on the migratory route of many species of global importance, such as green and black sea turtles, and protected marine mammals such as southern right, humpback, blue and sperm whales. The 11,000 km^2 Juan Fernández Multiple Use Marine Protected Area was declared in 2016, and protects two seamounts and important sea lion breeding areas. Tourism and lobster management plans for the protected area were designed in a participatory manner involving local and central government authorities and the resource users. "The sea is part of our soul in these islands," said Mr. Angulo, a local fisherman and member of the local council. He explained, "For the past 150 years, the artisanal fishers of Juan Fernández have adopted local practices to protect fishery resources. But, economic and social changes have meant that new approaches were necessary to ensure the health of the ecosystem on which the fishery depends. For us, one of the most significant outcomes of the [HCLME] project, is that it helped establish the [MPA]. This brings to these waters the protection that the community had always dreamed of, and involves them in their management… In short, the [HCLME] project has enabled us to achieve two great milestones in the history of these islands. This protects the ocean we love, secures our fishing livelihoods and has lasting impacts that enable us to uphold the legacy of our forebears." (GEF-UNDP, 2017).

"The intensive training and awareness-raising carried out in the community gave impetus to the idea to have the rock lobster fishery certified by the MSC—an achievement of which we are extremely proud, as ours is the only artisanal fishery in the south-east Pacific with this accreditation. This has resulted in invitations to participate in international events to share best practices and gives our products a competitive edge in the marketplace. The [HCLME] project invested heavily in developing the capacity of the Fisheries Unit in our local municipality, bringing our management and planning in line with international standards. It also facilitated research that has enabled us to conduct the annual audit, which we have to perform in terms of the MSC certification."

Mr. Pablo Manríquez Angulo
is a fisherman living on Crusoe Island. He is a member of the local council's planning department and has played a pivotal role in promoting the MSC certification of the rock lobster fishery in JFA (GEF-UNDP, 2017)

IMPROVED STATE

The HCLME project has demonstrated how EBM, incorporating the expansion and strengthening of MPAs, can contribute to maintaining the ecological integrity of a LME in the context of changing climatic, economic and social pressures. More than one million hectares of co-managed MPAs have been established in Chile and a smaller area for macro algae repopulation was established at a pilot level in Peru. The project supported the establishment of fisheries co-management schemes that restrict access in defined areas to specific fishing communities, and set regulations for catch levels through associated management plans. The experiences of the pilot areas, as proof of concept to be replicated in other areas, have served to disseminate best practices, identify lessons learned and involve the users of the resources in their sustainable management under ecosystem criteria. More than 5,000 people have been mobilized in workshops and courses, both in training and to support the consolidation of the governance of protected area management committees.

The implementation of the developed ecosystem-wide SAP, approved at the ministerial level, which will guide and coordinate governance arrangements, planning, policy development and priority actions for sustainable management and conservation of marine and coastal ecosystems in Chile and Peru, will be supported by the forthcoming UNDP-GEF HCMLE II project.

MORE ONLINE

HCLME Project
http://humboldt.iwlearn.org/img_0/partners

GEF Project Page
https://www.thegef.org/project/towards-ecosystem-management-humboldt-current-large-marine-ecosystem

REDEFINING COASTAL GOVERNANCE OF THE SEAS OF EAST ASIA

Credit: iStock by UserGI15632539, 2016

PILOTING AND SCALING UP INTEGRATED COASTAL MANAGEMENT

This is a story about how countries tested and applied a suitable model to regulate and coordinate activities in coastal areas, and to integrate the use of coastal resources with land use planning. It is also an unprecedented story about how a long-running project evolved into an international organization with legal personality to deliver integrated coastal management solutions to its partners and built a spirit of regional cooperation outside the legally binding convention process. Furthermore, it is an example of how strategic partnerships and targeted financing can catalyze regional cooperation toward effective management approaches and strategies.

SCALING UP INTEGRATED COASTAL MANAGEMENT

MAP 7

INITIAL STATE

The East Asian Seas (EAS) are made up of six sub-regional LMEs (Yellow Sea, East China Sea, South China Sea, Sulu-Celebes Sea, Indonesian Sea and Gulf of Thailand), which, collectively, occupy a total sea area of 7 million km2 and contain 235,000 km of coastline (PEMSEA, 2016). About 1.5 billion people live within 100 km of the region's coasts, which are home to over a third of the world's mangroves and a third of the world's seagrass beds and coral reefs (PEMSEA, 2011).

These habitats are exposed to varying degrees of pressure and show signs of continuous and serious degradation due to human activities. The situation is compounded by rapid economic growth, coupled with expansion of maritime trade and global demand for marine products, and population increases and large-scale migration of people and commerce to coastal areas.

There are several adverse impacts of these trends:
(1) food availability will be undermined as stocks may crash due to unsustainable catch, destructive practices and habitat degradation;
(2) economic dislocation will result for those whose jobs are dependent on the coastal and marine environment when the environment is no longer able to support sustainable livelihoods;
(3) aesthetic and recreational values will be lost, along with the associated economic activity;
(4) some coastal areas may become uninhabitable due to rising sea levels and intensified weather events from climate change; and
(5) public health will be compromised by toxins and hazardous compounds in edible marine products and by increased dangerous waste levels in coastal waters used by the public, among others.

Credit: PEMSEA, 2016

Many coastal management issues cut across sectors. The conventional, sectoral management approach, which addresses these challenges separately on a sector-by-sector basis, is typically not sufficient for solving complex problems in coastal areas.

235,000 KM of Coastline in the EAS RegionCoastal and marine industries comprise

15-20 PERCENT OF GDP in some EAS countries

9 OF THE TOP 10 busiest seaports in the world are in the EAS

TRANSFORMATION
GOVERNANCE REFORM PROCESS

ASSESSMENT, ANALYSIS AND CONSENSUS BUILDING

THE ORIGINS OF PEMSEA

In the early 1990s, countries of the region recognized the unsustainable pattern of growth affecting its coasts and oceans and requested assistance from the newly created GEF. In 1993, the GEF, together with UNDP and IMO, launched the first in a series of projects to improve regional ocean and coastal governance and on-the-ground management responses to existing and potential hazards faced at the local, national, sub-regional and regional levels. The initial project (MPP-EAS) focused considerably on the prevention and management of marine pollution through the application of a new governance approach for the region, Integrated Coastal Management (ICM), to address marine pollution issues at the local level. Through two ICM demonstration sites in Xiamen (China) and Batangas (Philippines); the project mobilized sub-regional efforts towards addressing marine pollution problems in the Straits of Malacca and Straits of Singapore and to strengthen capacity development in ICM. MPP-EAS originally involved six countries (Cambodia, China, the Philippines, Malaysia, Thailand and Vietnam), but expanded to include eight more (Brunei, Indonesia, DPR Korea, RO Korea, Singapore, Japan, Lao PDR and Timor-Leste) during the course of project implementation. This initiative marked the origins of Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), an international organization specializing in integrated coastal and ocean governance of the Seas of East Asia.

INTEGRATED COASTAL MANAGEMENT MODEL

Representing a shift from a reactionary problem-oriented approach to a planned, preemptive and management-based approach, ICM, first developed in the 1970s, has emerged as a paradigm to manage, regulate and coordinate activities in coastal areas, and to integrate the use of coastal resources with land use planning. PEMSEA determined that there was no adequately tested ICM working model that could be applied and scaled up across jurisdictions in the EAS Region. As such, a considerable amount of time and resources were used to develop, test and verify a suitable ICM working model for the region.

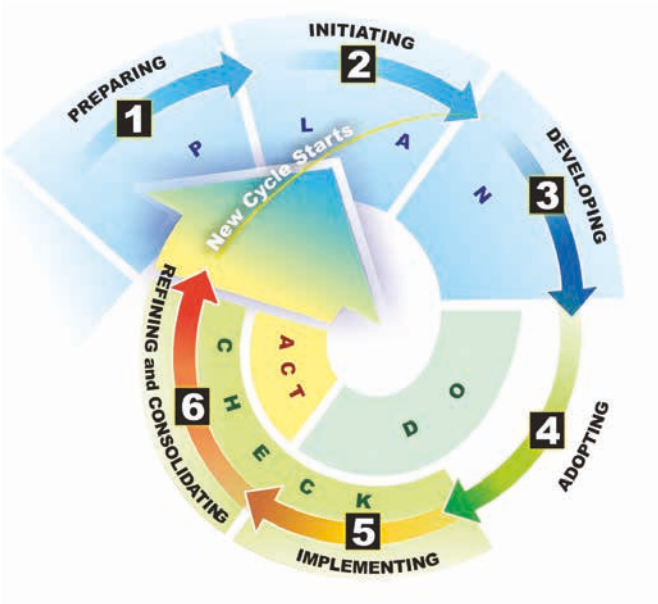
The resulting ICM framework aims to develop appropriate local policies and legislation that complement or reinforce national coastal/ocean policy; to create interagency coordinating mechanisms to reduce sectoral conflicts; to strengthen information management for the development of science-based, issue-focused action plans; to strengthen communication to keep the public informed; and to develop necessary local institutional capacity for integrated and adaptive management.

Developing the policy and management direction of a specific ICM program under the framework is achieved through the ICM Cycle. This cycle is a six-stage approach to identifying and prioritizing the environmental concerns of stakeholders and to planning, approving, implementing and monitoring policy and management interventions. Each stage contains a series of sub-actions that should must be followed and completed before moving to the next stage. Before the cycle begins, a thorough evaluation of candidate demonstration sites is completed. This evaluation, following selection criteria, is important in determining demonstration site sustainability for ICM implementation.

ICM DEMONSTRATION SITES

The first project to test the model was limited to demonstrating how local governments could effectively implement and sustain ICM practices pertaining to marine pollution. Xiamen and Batangas were considered to have biogeographical features and pollution management challenges similar to those found throughout most of the EAS. If the Xiamen and Batangas demos were successful, the ICM approach and methodologies utilized, as well as specific experiences and insights, would be useful for ICM application in other countries of the region, which have varying social and political systems.

ICM CYCLE FIGURE 7



Credit: PEMSEA, 2018

The working experience of the two demonstration sites selected in the initial project period gave rise to improvements and refinements of the ICM methodology. A number of important lessons were learned. Firstly, marine pollution is only one of the major threats to the region's environmental and economic sustainability. In order to protect ecosystems and their services over the long term, the countries would need to address the cumulative impacts of pollution together with other threats, such as fisheries overexploitation and habitat destruction, in a holistic and integrated manner. Secondly, there was need for a region-wide vision and mission to provide clear goals and direction to achieve sustainable coastal and ocean development.

COMMITMENT, PLANNING AND COORDINATION

Building on the pilot phase and realizing the need to take a broad, integrative and partnership management approach to addressing the complex management barriers in the region, a follow-on UNDP-GEF project focused on the development of a regional marine strategy and building a partnership mechanism for the implementation of the strategy.

THE SUSTAINABLE DEVELOPMENT STRATEGY FOR SEAS OF EAST ASIA

The decision to prepare a sustainable development strategy arose in a 2000 intergovernmental meeting of 11 PEMSEA countries. A long and comprehensive consultation and approval process ensued, with the project stimulating debate and consensus building among a variety of stakeholders. Following review and refinement through several senior intergovernmental meetings, the Sustainable Development Strategy for Seas of East Asia (SDS-SEA) was endorsed by 12 PEMSEA countries (Brunei Darussalam; Cambodia; China; DPR Korea; Indonesia; Japan; Malaysia; Philippines; RO Korea; Singapore; Thailand; and Vietnam) with the signing of the Putrajaya Declaration in 2003. Lao PDR and Timor-Leste adopted the SDS-SEA in 2006.

The PEMSEA countries opted for a non-binding approach, rather than a regional convention. While the SDS-SEA incorporated relevant international conventions, existing regional and international action programs, agreements and instruments, and applicable principles and implementation approaches, it did not create a new set of obligations, but rather complemented existing ones. As the region is highly diverse in many ways (size, population, economic development, type of government), this approach was found to afford flexibility and allow each country to implement the SDS-SEA in accordance with the individual country's capacity to do so. It also avoided the long and complex negotiation and ratification process necessary for a binding instrument.

Containing 217 action programmes under 20 objectives and six strategies, the SDS-SEA harmonizes international development goals and provides a framework for planning, implementing and monitoring sustainable development of coasts and oceans across the EAS region. The 2015 SDS-SEA, updated to address the changing context in ocean governance in light of new and amended international and regional agreements, calls for ICM programs to cover at least 25 percent of the region's coastline by 2021, as well as national coastal and ocean policies, and supporting legislation and institutional arrangements set up and functional in 100 percent of PEMSEA Partner Countries by the same year.

INSTITUTIONALIZING PEMSEA

Following the adoption of the SDS-SEA, a regional implementing mechanism needed to be adopted. Questions included what form it should take and what mode should be used to institutionalize it. These questions fell to the newly formed East Asian Seas (EAS) Partnership Council—comprised of country and non-country partners to formulate program and operational policy in support of the implementation of the SDS-SEA. The Council ultimately recognized PEMSEA as the SDS-SEA regional implementation mechanism in 2006.

The process aimed for the regional mechanism to be self-sustaining. PEMSEA, however, had no legal capacity to contract, own property, pursue remedial measures, or directly receive funds. The Council resolved to pursue the means by which PEMSEA could contract and operate directly in its own name. The international legal personality of PEMSEA—enabling it to develop and implement coastal and ocean governance programs independently, within its own legal framework as an international organization—¬ would be formally recognized through a multilateral agreement of country partners. Due to internal priorities and parliamentary approvals, which in some cases had to be obtained, not all countries were in a position to move quickly in gaining the necessary national approvals for the signing of the agreement. It was decided by consensus to push ahead with several countries signing the legal personality agreement which would then allow PEMSEA to negotiate for privileges and immunities with each government, and not to wait for all countries to sign the agreement on legal personality. Countries that were unable to sign, nevertheless indicated their full support for the others to proceed with the signing. While experiencing some difficulties and delays in the necessary national approvals, the spirit of cooperation and goodwill remained strong, and a collective desire to pursue the means to strengthen the institution prevailed.

PEMSEA's transformation from a long-running UNDP-GEF project-based entity into an international organization with its own legal entity has been unprecedented. In a span of three years after PEMSEA was recognized as the regional coordinating mechanism, PEMSEA was able to enter into contracts and directly receive and manage funds in its own name in 2009. This new paradigm for regional cooperation differs from those of regional conventions in that the mode of regional cooperation is based on the spirit of partnership and the moral obligation of partners, be they governments or otherwise, to comply with agreed principles, objectives and activities guided by a shared vision.

PEMSEA, celebrating its 25th anniversary in 2018, now delivers integrated solutions to its partners through a set of advisory, knowledge and certification service offerings to support the unique needs of local and national governments, international development organizations, companies, investors, and others operating in a complex coastal environment.

IMPLEMENTATION: MAKING REALITY OF REFORM

INTEGRATED COASTAL MANAGEMENT CODE AND SYSTEM CERTIFICATION

PEMSEA built an ICM Code in 2007 to provide an international standard for the good governance of its ICM system. The Code has since been recognized as an essential component of national ICM scaling up programmes in several countries. It is intended to apply to all types and sizes of local governments and to accommodate different political, social, cultural and geographic conditions. For this reason, the requirements are expressed in broad terms so that the Code can have widespread application.

PEMSEA's ICM System Certification is designed for local governments seeking validation of their ICM system and recognition for excellence and continuous improvement. The ICM System Certification formally evaluates and certifies that an ICM System conforms to the requirements of the ICM Code. Three levels of certification are available:
(1) blue economy level: high level of excellence in ICM, with sustainable development benefits demonstrated, maintained and continually improved;
(2) effective ICM system level: significant progress in building sound processes and environmental benefits demonstrated in priority areas and consistent with requirements of ISO 14001 and ISO 9001; and
(3) proficient ICM governance level: ICM system is developed and implemented, compliant with the Level 1 Requirements of the ICM Code.

A governance system is established to properly manage revisions and updates of the ICM Code, the certification process and the administration of activities for ICM System services. Partnerships with other regional agencies and organizations are an important component of building the ICM Code ecosystem.

THE PEMSEA NETWORK OF LOCAL GOVERNMENTS FOR SUSTAINABLE DEVELOPMENT

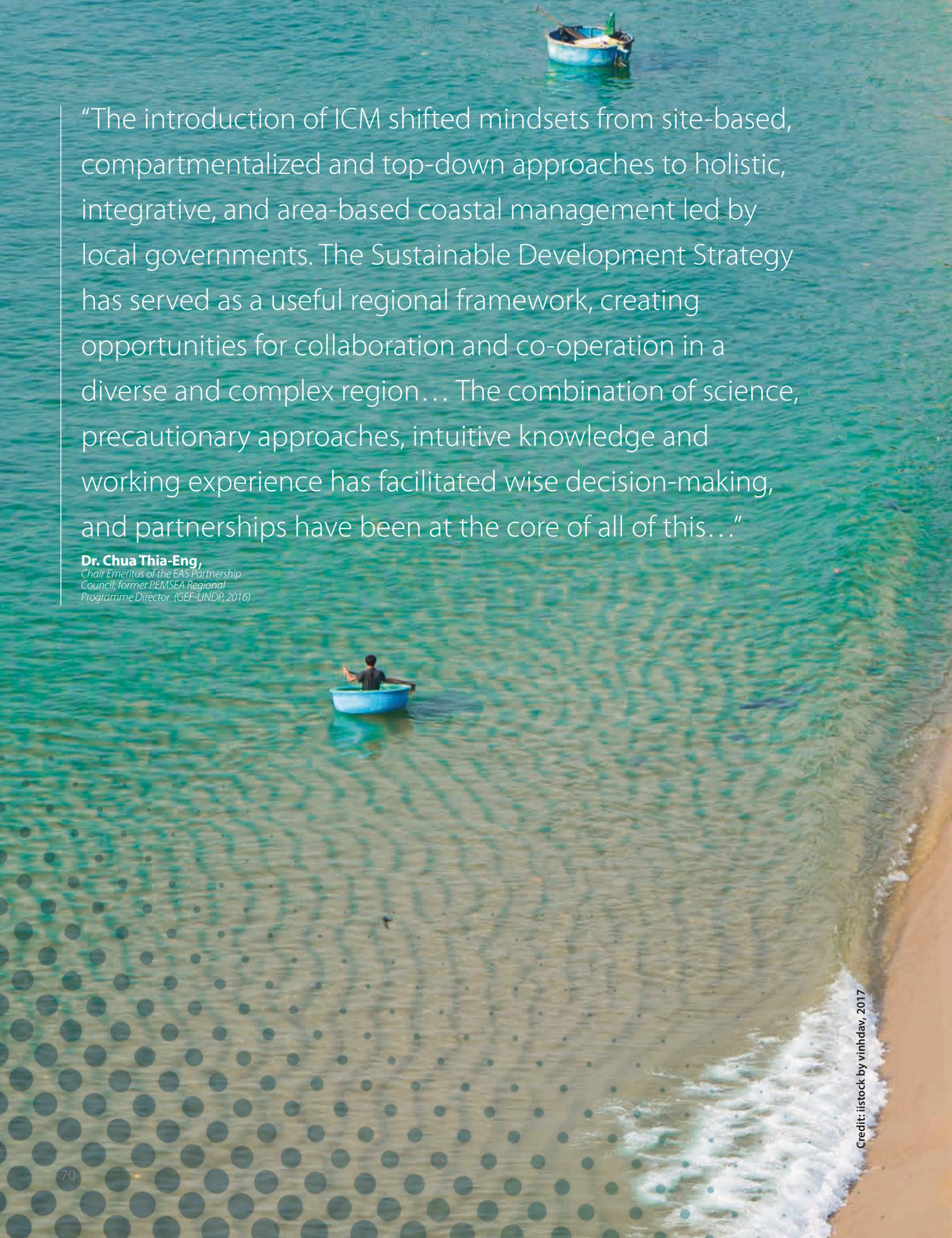
The PEMSEA Network of Local Governments for Sustainable Development (PNLG) is one of the driving forces in realizing the SDS-SEA, making major contributions through enhancing the capacity of local governments to plan, develop and manage their coastal and marine resources for sustainable use; promoting the application of ICM approaches, processes and tools; facilitating the linkage between scientific technical institutions and local governments, in order to provide capacity building and scientific input to local government decision making, policies and programs; and implementing innovative financing mechanisms and partnership arrangements for environmental investments with international and national financial institutions, private investors and operating companies. The PNLG Secretariat holds office in Xiamen, and has 48 regular members in ten countries in the EAS and two associate members

CATALYZING FINANCE

Environmental investments through PEMSEA-facilitated ICM and sub-regional program implementation had amounted to US$369 million, of which US$78.65 million came from the private sector (as of 2012, when the last full analysis was conducted; UNDP, 2012, b). This translates to an environmental investment leverage ratio of about 13 to 1 for GEF funds over the projects to that point. If the pollution reduction projects that have been catalyzed by PEMSEA in the Bohai Sea and Manila Bay are considered, the ratio increases to more than 275 to 1.

THE PEMSEA NETWORK OF LEARNING CENTERS AND CAPACITY BUILDING EFFORTS

The PEMSEA Network of Learning Centers (PNLC) is a network of universities and scientific institutes across the EAS Region providing technical advice and assistance to national and local governments, ICM project sites, nongovernmental organizations, local communities and the private sector through studies and projects on coastal and ocean management, monitoring and reporting on trends and mentoring and training of ICM practitioners. These learning centers have developed critical mass of national experts needed for expansion of ICM practices. Since 2003, PEMSEA has conducted 178 ICM training and workshop activities, involving about 5,000 participants from the PEMSEA Partner Countries (PEMSEA, 2015).



"The introduction of ICM shifted mindsets from site-based, compartmentalized and top-down approaches to holistic, integrative, and area-based coastal management led by local governments. The Sustainable Development Strategy has served as a useful regional framework, creating opportunities for collaboration and co-operation in a diverse and complex region… The combination of science, precautionary approaches, intuitive knowledge and working experience has facilitated wise decision-making, and partnerships have been at the core of all of this…"

Dr. Chua Thia-Eng,
Chair Emeritus of the EAS Partnership Council; former PEMSEA Regional Programme Director (GEF-UNDP, 2016)

Credit: iistock by vinhdav, 2017

IMPROVED STATE

SCALING UP (THE XIAMEN AND BATANGAS EXAMPLES)

Demonstration site lessons have improved ICM methodologies and tested working models. ICM implementation has paved the way for environmental improvements and investments in the EAS Region by putting in place the necessary enabling environment. The original demo sites, Xiamen and Batangas, provide cases in point. Three cycles of ICM implementation in Xiamen have placed public health at the centre of economic development, set up effective nutrient reduction programmes, rehabilitated habitats, improved shorefront management, and reduced adverse impacts on ecosystem health, creating a more conducive and healthy environment for Xiamen residents. The Xiamen experience has become a working model for ICM implementation nationally, regionally, and globally. Based on the success of the ICM demo project, China developed national legislation requiring coastal sea-use zoning and management for the entire Chinese coastline. The Province of Batangas in the Philippines started applying the ICM framework for managing the development of Batangas Bay in 1994. In coordination with 34 local governments, agencies and donors, ICM has now expanded to cover the watershed, coastal areas and bays of the entire province.

Solving the complex problems of coastal and ocean management and governance requires work at local, national, and regional levels. PEMSEA provides an excellent example of how strategic partnerships and targeted financing can catalyze regional cooperation toward effective management approaches and strategies. PEMSEA also demonstrates that countries are willing to come together and commit to long-term sustainable development without a legally binding regional protocol or convention.

From 1993-2017, PEMSEA established ICM sites in 67 locations in nine countries. By mid-2017, about 42,000 km (18 percent) of the region's coastline was under ICM.

"The stalwart support of the GEF [UNDP] over the years has been a major factor in the development and maturation of PEMSEA and ICM in the region. Each phase of PEMSEA's evolution has consisted of clear and measurable targets, which promoted progressive development and uptake of ICM," said Stephen Adrian Ross, former PEMSEA Executive Director (GEF, 2017). Currently, there are more than 80 local governments across the region applying ICM as a management system for sustainable development and management of their coastal and marine areas

MORE ONLINE

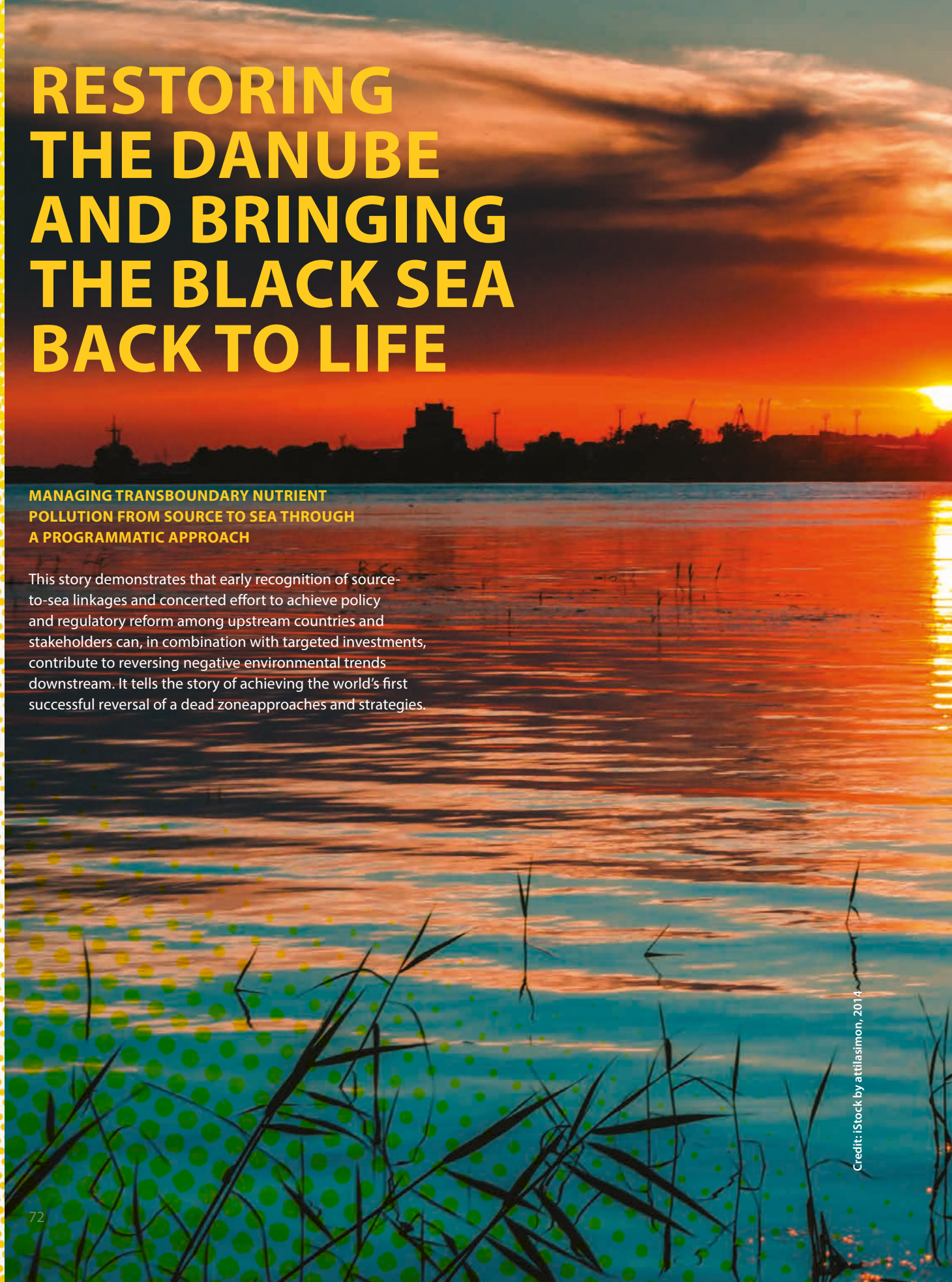
PEMSEA
pemsea.org

GEF Project Page
https://www.thegef.org/project/prevention-and-management-marine-pollution-east-asian-seas

GEF Project Page
https://www.thegef.org/project/eas-scaling-implementation-sustainable-development-strategy-seas-east-asia

Source: PEMSEA, 2017

RESTORING THE DANUBE AND BRINGING THE BLACK SEA BACK TO LIFE



MANAGING TRANSBOUNDARY NUTRIENT POLLUTION FROM SOURCE TO SEA THROUGH A PROGRAMMATIC APPROACH

This story demonstrates that early recognition of source-to-sea linkages and concerted effort to achieve policy and regulatory reform among upstream countries and stakeholders can, in combination with targeted investments, contribute to reversing negative environmental trends downstream. It tells the story of achieving the world's first successful reversal of a dead zoneapproaches and strategies.

Credit: iStock by attilasimon, 2014

INITIAL STATE

The Danube stretches 2,780 km from the Black Forest in Germany to the Danube Delta in Romania, where it discharges into the Black Sea (GEF, 2016). The Danube River Basin is the most international river basin in the world, covering territory of 19 countries today, while the Black Sea, bordered by six countries, is the world's most isolated sea, connected to the Mediterranean through the narrow Bosphorus and to the Sea of Azov through the Kerch Strait.

As a result of the "green revolution" during the nineteen sixties, the Danube and Black Sea countries dramatically increased their application of artificially-prepared fertilizers and manure to agricultural land. While fertilizer had helped bolster agricultural productivity, it also had a cost, as farm runoff has contributed nutrient (nitrogen, phosphorus) pollution to these waters. Industrialization and population growth has also led to significant increases in point sources of pollution through untreated wastewater and wetland destruction. The net result was a four-fold increase in the burden of nutrients reaching the Danube and Black Sea (UNDP, 2012, b).

While nutrients are essential to both freshwater and marine ecosystems, in excess they can lead to a serious problem known as eutrophication, whereby excess nutrients stimulate high levels of plankton growth. When these plankton die, their decomposition by aerobic bacteria consumes so much oxygen in the water that major areas can experience very low oxygen conditions, or hypoxia. By the 1980s, much of the northwest shelf of the Black Sea was hypoxic—a number of species and benthic ecosystems had disappeared and resulting economic losses and livelihoods from fisheries, tourism and other sectors were estimated at US$500 million per year (UNDP, 2012, b).

DANUBE RIVER DRAINING INTO THE BLACK SEA MAP 8

Credit: WWF, undated.

Excess nutrients, such as nitrogen, phosphorus and silica, entering coastal waters from land-based sources can lead to coastal hypoxia, or "dead zones".

TRANSFORMATION
GOVERNANCE REFORM PROCESS

ASSESSMENT, ANALYSIS AND CONSENSUS BUILDING

THE SOURCE-TO-SEA CONTINUUM

The intensification of human activities to meet the increasing demands for water, food, energy, space and economic growth creates a cascade of impacts that extend from land to freshwater systems to seas. The source-to-sea link between Black Sea eutrophication and Danube River inflow (as the main contributor of nutrients) was recognized in both the Bucharest Convention (in force in 1994) and the Danube River Protection Convention (in force in 1998). The international nature of the basin system, however, meant that any effort to restore the Danube and Black Sea would need broad and unprecedented international cooperation.

REACHING CONSENSUS THROUGH THE TDA-SAP PROCESS

Initial UNDP-GEF assistance toward this goal began in the early 1990s, when the Danube and Black Sea countries began joint planning activities under the regional environmental conventions. UNDP-GEF investment enabled the formulation of TDAs (based on national reviews of the sources of pollution and their effects on the basin system) and SAPs to support the implementation of the conventions, while also setting in place cooperation between Black Sea and Danube nutrient reduction initiatives.

The TDAs confirmed nutrient pollution as the highest priority transboundary issue facing the Danube/Black Sea Basin system. The SAPs, which incorporated a bottom-up approach with some 300 professionals and experts from the region, including central and local governments, NGOs, universities and research institutions and the private sector contributing to their production, included measures to reduce pollution, promote conservation and restore ecosystems in the basin system. One of the general objectives of the Danube SAP (1994, revised 1999), which fed into the development of the Joint Action Programme for the Danube River Basin, is to "contribute to reducing the pollution loads of the Black Sea from sources in the catchment area" aiming for improved ecological and chemical status of the water and prevention of accidental pollution events. The Black Sea SAP (1996, updated 2007) aims at preserving commercial marine living resources, conserving Black Sea biodiversity and habitats, reducing eutrophication, and ensuring good water quality for human health, recreational use and aquatic biota. It identifies integrated coastal zone management, the ecosystem approach and integrated river basin management as key environmental management approaches to reach these objectives.

COMMITMENT, PLANNING AND COORDINATION

THE STRATEGIC PARTNERSHIP FOR NUTRIENT REDUCTION

In 2000, the International Commission for the Protection of the Danube River (ICPDR) and the International Commission for the Protection of the Black Sea (ICPBS), with participation of the 23 Danube and Black Sea country representatives, the GEF, UNDP, UN Environment and the World Bank, began a collaboration to accelerate implementation of the Danube and Black Sea action programs. This coordinated effort led to the design of the GEF Danube-Black Sea Strategic Partnership for Nutrient Reduction in 2001, which was underpinned by an MoU between the ICPDR and Black Sea commissions earlier that year. The long-term objective of the Strategic Partnership was for all Danube and Black Sea basin countries to take measures to reduce nutrient pollution levels and other hazardous substances to levels necessary to permit ecosystem recovery to conditions similar to those observed in the 1960s.
The intermediate objective of the Partnership was to reduce discharges of nitrogen and phosphorous to the Black Sea to levels at or below those observed in 1997.

The Partnership involved a programmatic approach, combining both basin-scale institutional reforms and national investment components, and comprising:
(1) the Danube Regional Project (DRP), implemented by UNDP, to provide technical assistance and capacity building to Danube countries implementing their "Joint Action Programme" for the Danube Basin, with a focus on nutrient reduction through policy, legal and institutional reforms and technology transfer;
(2) the Black Sea Ecosystem Recovery Project (BSERP), also implemented by UNDP, with an aim to provide similar technical assistance to Black Sea countries to implement their SAP; and
(3) the Investment Fund for Nutrient Reduction (IFNR), implemented by the World Bank, which would finance single country pilot projects for nutrient reduction in the municipal, industrial and agriculture sectors, as well as for wetland and floodplain restoration.

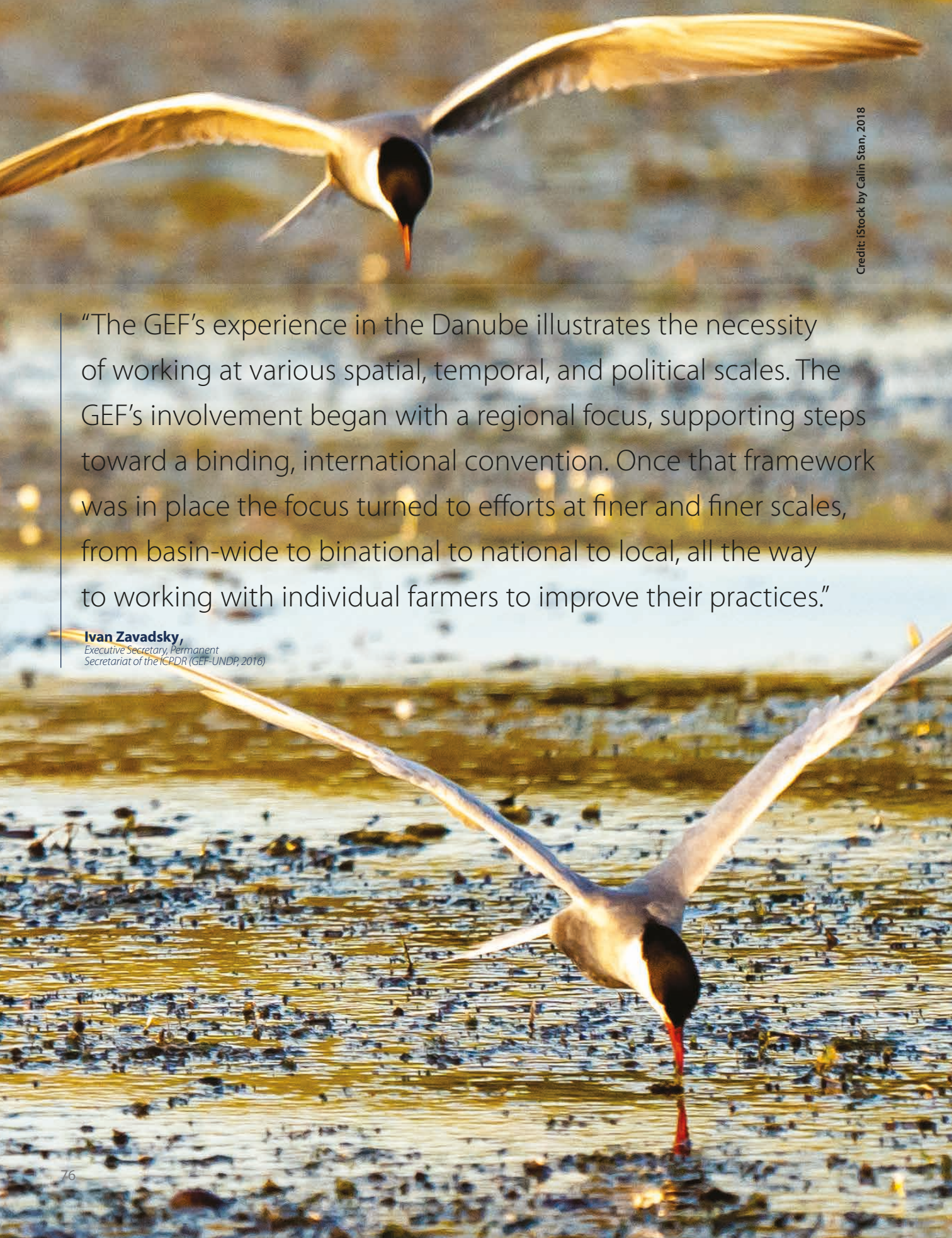
INSTITUTIONAL REFORMS AND COMPLIANCE MEASURES

Through a range of capacity building activities, the DRP (Danube Regional Project) and Black Sea Ecosystem Recovery Project (BSERP) helped to establish, strengthen and ultimately sustain the emerging commissions and secretariats for both the Danube and Black Sea, each of which are charged with coordinating implementation of their respective conventions and action programs.

In 1997, the DRP and BSERP supported the ICPDR and ICPBS to establish a Joint Ad-hoc Technical Working Group, made up of representatives from both commissions, to work together to safeguard the basin ecosystems from further deterioration. This effort led to the commissions signing the 2001 MoU, which constituted a framework for implementing common goals to reducing pollution loads including adopting strategies for economic development to ensure appropriate practices and measures to limit the discharge of nutrients and hazardous substances and for rehabilitating ecosystems that assimilate nutrients.

The DRP also assisted the ICPDR to implement the European Union's (EU) Water Framework Directive (WFD), which obligates EU Member States and accession countries to use a river basin approach for managing their water resources, and obliges every EU river basin and sub-basin, including the Danube, to have had a 'River Basin Analysis' and a developed 'River Basin Management Plan' by 2009, which specifies a 'Programme of Measures'. Nutrient pollution was one of four key issues that could prevent Danube countries from meeting the WFD requirements. DRP assistance resulted in legislative reforms in seven Danube EU countries to meet the legal obligations to implement EU Directives and these countries proceeded to comply with the relevant nutrients/toxics legislation of the EU WFD. The project also helped four non-EU countries achieve voluntary compliance. It supported the development of a pilot management plan for the Sava River Basin, which joins the Danube at Belgrade, as a model for river basin management planning at a sub-basin level, in line with the EU WFD. Although at the time only Slovenia and Croatia were required to develop a management plan by the EU WFD, Bosnia and Herzegovina, Serbia, and Montenegro also agreed to comply voluntarily.

Through capacity building activities, the DRP also assisted countries in designing new agricultural point and non-point source pollution control policies and legislation as well as policies and legislation for new land use, wetlands rehabilitation/protection, and industrial pollution control. It also helped the ICPDR and ICPBS develop monitoring systems for process, stress reduction and environmental indicators, and it supported the development of a prototype Danube GIS and improvement of a warning systems for accidents, emergencies and pollution spills in the basin.



Credit: iStock by Calin Stan, 2018

"The GEF's experience in the Danube illustrates the necessity of working at various spatial, temporal, and political scales. The GEF's involvement began with a regional focus, supporting steps toward a binding, international convention. Once that framework was in place the focus turned to efforts at finer and finer scales, from basin-wide to binational to national to local, all the way to working with individual farmers to improve their practices."

Ivan Zavadsky,
Executive Secretary, Permanent Secretariat of the ICPDR (GEF-UNDP, 2016)

IMPLEMENTATION: MAKING REALITY OF REFORM

The Danube-Black Sea Strategic Partnership undertook a large number of projects at the national stage to, among others, clean up some of the industry that pollutes the Danube, phase out phosphorus detergents, restore wetlands, and increase the use of environmentally-friendly agricultural practices.

TEST – PROMOTING CLEANER INDUSTRY IN THE DANUBE

Industry, mining and agriculture are responsible for most of the direct and indirect pollution in the Danube Basin. A closely linked GEF-UNDP-UNIDO project set out to build capacity in cleaner production, environmental management systems and accounting, and environmentally sound technologies in five Danube countries—Bulgaria, Croatia, Hungary, Romania and Slovakia—by applying the UNIDO program, Transfer of Environmentally Sound Technology (TEST). Seventeen pilot enterprises (including, among others, alcohol production, textiles, meat processing, sugar production and chemical production from a group of 130 identified hotspots) that were contributing to transboundary pollution in the basin were selected.

Through the introduction of a suite of TEST tools, the idea was to bring these pilot enterprises into compliance with environmental norms of the Danube Convention and the EU Integrated Pollution Prevention and Control Directive, while at the same time taking into account their needs to remain competitive and not jeopardize their market positions, and addressing the social consequences of major technology upgrading. Subsequent to training more than 700 employees from the demonstration enterprises and from national institutions in the TEST approach, more than 230 cleaner production measures were implemented at the demo enterprises, leading to a total savings equivalent to US1.3 million per year (GEF, 2010). Environmental management systems were introduced in 11 companies and four companies received international ISO14001 accreditation. Implementing the TEST approach brought overall improvements to company profiles and credibility, including a reduction in unnecessary investments and costs; recycling of wastes or using them for alternative products; overall improvements in product quality; along with improved reputation and marketing potential as a result of environmental acceptability and avoidance of fines and penalties.

SMALL GRANTS PROGRAMME

In 2004, the UNDP-GEF Small Grants Programme began to support community action in the Danube to address nutrient pollution. This US$1 million programme awarded nearly 150 small grants of between US$5,000 to US$15,000 to NGOs in 11 Danube countries. These projects helped raise community awareness and supported local action to improve farm practices, restore wetland areas and reduce wastewater pollution throughout the basin. The SGP has been the DRP's main vehicle for engaging local stakeholders and the public.

CATALYZING FINANCE

INFR, the World Bank managed investment arm of the Strategic Partnership, supported identification and preparation of 10 demonstration investments in seven eligible countries totaling about US$67 million in GEF financing and US$194 million in co-financing (ratio 3:1). These projects have been projected to deliver estimated nitrogen reduction of more than 5,000 metric tons/year and phosphorus reduction of more than 400 metric tons/year (UNDP, 2012, b), demonstrating the significant catalytic contribution of investments through the INFR to overall nutrient pollution reduction in the Danube/Black Sea basin.

"NO FOSFOS" CAMPAIGN TO REDUCE PHOSPHATE POLLUTION IN SARAJEVO

In Sarajevo, Bosnia and Herzegovina, a small grant supported the NGO Ekotim to campaign for the reduction of phosphate pollution from the use of household detergents. One of the main problems was that local households could still buy laundry detergents containing more than 30 percent phosphate. In addition, Sarajevo's wastewater treatment facility had been destroyed during the Balkan conflict, meaning untreated residential and industrial wastewater had been pouring into the local Miljacka River, which feeds into the Danube. The "No FOSFOS" project aimed

to raise awareness among Sarajevo consumers about the links between their detergent use and water pollution and to promote the use of phosphate-free detergents. The project reached some 200,000 citizens in Sarajevo through a successful communications campaign, which included distributing more than 20,000 leaflets in a variety of locations, including bars, shopping centers and street side; reaching 150,000 people through a local radio jingle on twenty radio stations; carrying out workshops in schools; and placing stories in national newspapers. A Bosnian company ended up developing a new line of phosphate-free detergents and post-campaign testing of city wastewater showed that total phosphorus discharge levels to the river having come down from 310 to 245 kg per day (GEF, 2010) as a result of the campaign.

CONTROLLING AGRICULTURE POLLUTION IN ROMANIA

Romania is the largest contributor of nutrients to the Black Sea. In the region of Calarasi, an INFR grant helped to support the reduction of nitrogen pollution from agricultural activities by increasing the use of manure management and other environmentally-friendly agricultural practices across an area of 410,000 ha of arable land bordering the Danube. In the grant period, through capacity building and awareness campaigns targeting the local communities, the land area covered by environmentally-friendly practices increased from zero to almost 35 percent (GEF, 2010). The percentage of households using manure storage and segregating organic waste materials went from zero to almost 55 percent and the amount of manure being applied as fertilizer went from 2 percent to 34 percent (GEF, 2010). In 2007 the Romanian Government decided to adopt the best practices for nitrogen reduction successfully demonstrated in Calarasi across the rest of the country, particularly in vulnerable areas. This scaling up effort has been supported by the World Bank and GEF.

IMPROVED STATE

ACHIEVING THE WORLD'S FIRST REVERSAL OF A DEAD ZONE

A series of GEF-financed UNDP projects in the Danube and the Black Sea over 20 years delivered policy, legal and institutional reforms and identified more than 500 priority pollution reduction investments, which created an enabling environment that catalyzed more than US$3 billion in nutrient pollution reduction investments across the basin countries (UNDP, 2012, b). These investments helped reduce nitrogen and phosphorous loads to the Black Sea by 20 percent and 50 percent respectively from 2001-2015. Oxygen levels are now at or near saturation in most areas of the Black Sea (STAP, 2011). The downstream impact of this has been the effective elimination of the 'dead zone' in the northwest shelf of the Black Sea, a marked decrease in the frequency of algal blooms, and the return of many species that had become locally extinct. Associated with these changes, there has been a significant recovery in revenues from tourism and fisheries and local livelihoods in the Black Sea region ●

MORE ONLINE

Danube Regional Project
http://www.undp-drp.org/drp/index.html

GEF Project Page
https://www.thegef.org/project/strengthening-implementation-capacities-nutrient-reduction-and-transboundary-cooperation

GEF Project Page
https://www.thegef.org/project/strengthening-implementation-capacities-nutrient-reduction-and-transboundary-cooperation-0

"Following consultative processes, the [DRP] developed an Exit Strategy to set in motion a phase-out of project support in preparation for the [ICPDR] operating as a self-financing Commission and Secretariat. As a result, we now have a technically and institutionally strong Danube Commission and the Danube countries are now standing confidently, backed by solid environmental regulation and real investments, to meet their own environmental needs…This success story has not ended. The Danube Ministerial Conference in 2016 acknowledged the impressive progress in ongoing reduction of organic emissions from point and diffuse sources. Hundreds of fish migration aids have been constructed, opening up migration routes and improving the connectivity between habitats. In addition, more than 50,000 hectares of wetlands and floodplains have been partially or totally reconnected, restoring ecosystem functioning and flood attenuation services. None of this would have been possible without the initial, well-targeted and strategically designed GEF-funded interventions."

Ivan Zavadsky,
Executive Secretary, Permanent Secretariat of the ICPDR (GEF-UNDP, 2016)

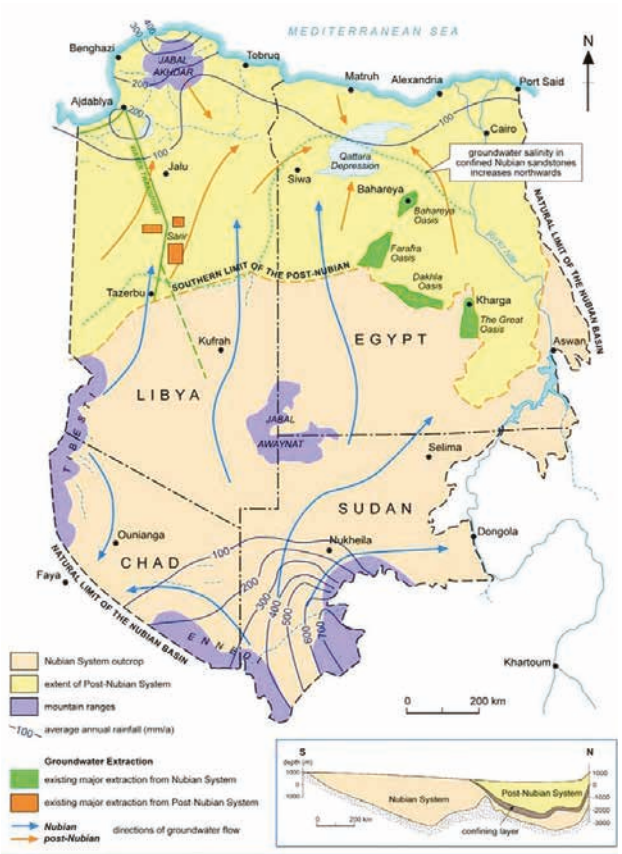
MANAGING THE WORLD'S LARGEST KNOWN FOSSIL AQUIFER

Credit: iStock by Anna Skvortsova, 2018

LAYING THE FOUNDATION FOR JOINT GOVERNANCE OF THE NUBIAN SANDSTONE AQUIFER SYSTEM HIDDEN RESOURCE

This is a story about an aquifer where "the water is ancient, and the secrets are many". It illustrates the complexity of managing international groundwater systems. It is also a story about how innovative modeling applications and techniques were used to widen the scientific database, which built the necessary confidence among countries to enter into an action program to set up the policy and institutional reforms required to establish a framework for collective aquifer management.

NUBIAN SANDSTONE AQUIFER SYSTEM MAP 9



Credit: International Water Law Project, 2013

INITIAL STATE

The Nubian Sandstone Aquifer System (NSAS) is the world's largest fossil (ancient and non-renewable) aquifer system, stretching about 2,600,000 km^2 and including about 375,000 km^3 of groundwater in Chad (12.8 percent), Egypt (41.5 percent), Libya (36.6 percent) and Sudan (9.1 percent) (GEF, 2018). The bulk of groundwater stored in the aquifer system is either too deep to reach and abstract, or too salty to use, particularly in the northern areas. And only about 3.9 percent of the reserve is recoverable using the latest available technology; of which practically all is in the unconfined parts of the aquifer system.

The NSAS is strategically crucial for the 110 million people of this arid region, which has few alternative freshwater resources outside the Nile Valley and Delta and the Chadian lakes. It is estimated that about seven million people depend on the NSAS groundwater resources for their daily activities. The area is characterized by traditional farming systems in the vicinities of oases, and populations that are settled in villages or are nomadic or semi-nomadic, practicing seasonal movement of stock after grazing.

Since the 1960s, groundwater has been actively pumped out of the aquifer to support irrigation, industry and water supply needs. Increasing abstraction is putting more and more pressure on the aquifer, which, under current climatic conditions and based on current knowledge appears to be only marginally rechargeable.

GROUNDWATER provides a unique buffer during extended dry periods and therefore is a critical resource for adaptation to climate variability change.

TRANSFORMATION
GOVERNANCE REFORM PROCESS

ASSESSMENT, ANALYSIS AND CONSENSUS BUILDING

THE JOINT AUTHORITY AND EARLY COOPERATION

Cooperation on the NSAS, between Egypt and Libya, dates back to the 1970s. It crystallized with the establishment of the Joint Authority for the Study and Development of NSAS (JA) in June 1991—functioning to study and develop the NSAS and to seek international assistance to establish a regional strategy for the utilization of the NSAS water resources. Sudan joined the JA in 1996 and Chad joined in 1999. To date the JA remains the main political driving force and first basis for the regional legal and institutional mechanisms necessary to formalize future plans for regional cooperation in the NSAS.

One of the early identified challenges to a regional strategy was gaining sufficient information about the aquifer. The International Fund for Agriculture Development (IFAD) and the Centre for Environment and Development for the Arab Region and Europe (CEDARE) supported the JA with initiatives that led to a joint survey of the socioeconomic development polices and plans in the aquifer areas and the establishment of a Nubian Aquifer Regional Information System (NARIS) database. Important advances, through two agreements in 2000, were made to improve the understanding of the aquifer system and establish mechanisms for data sharing and groundwater monitoring and modeling. The agreements sprang from the conviction that constant monitoring and updating of data and information regarding the NSAS, and sharing of such data and information, are at the heart of the sustainable use of groundwater resources in the aquifer. These advances laid the groundwork for a partnership among the GEF, UNDP, IAEA and UNESCO, with projects starting in 2003, to work with the JA member countries to strengthen regional cooperation, address data gaps, improve technical understanding of the NSAS, and develop policy strategies for managing the aquifer system.

THE SHARED AQUIFER DIAGNOSTIC ANALYSIS

To jointly identify, understand and reach agreement on the priority issues, threats and root causes of the NSAS, national multi-disciplinary teams were constituted, and with the support of a group of international experts, prepared the joint Shared Aquifer Diagnostic Analysis (SADA). The SADA was developed as an objective, non-negotiated technical document, following the principles and procedures of the GEF TDA. (The project trained each national counterpart team in the TDA methodology).

The SADA process enabled the NSAS countries to rank the threats to the aquifer system resulting from continued development of the aquifer. Technical evaluation of these threats was possible through sharing of aquifer data and a collaborative modeling effort (see right), building on the administrative structure already in place through the JA. The SADA process identified three key transboundary concerns: (1) declining water levels related to abstractions; (2) damage or loss of the ecosystem and biodiversity that are linked to the aquifer at oases; and (3) water quality deterioration from industry, agriculture and urban pollution.

NSAS 3-D HYDROLOGICAL MODEL

Three-dimensional modeling permits accurate representation of water movement toward pumping areas and enables the mapping of water movement through the aquifer with the use of particle tracking. This can be used to estimate the age of water in the aquifer at any time and location and can help anticipate the transboundary effects of abstraction under a variety of future development scenarios.

A new and innovative numerical 3-D model of the Nubian Aquifer was constructed over a five-month period in Vienna in 2009. Led by the IAEA, it became a collaborative and interactive exercise, with the participation of national programme coordinators and technical staff from all four NSAS countries in three regional workshops at various stages in the model development. Isotope techniques were used to determine the size of the aquifer, the drawdown of water, the lifespan, potential impact of human activity and the possible transboundary effects. The model created a platform agreed upon by all countries through which data can be shared and interpreted in an open, transparent manner. This was seen as constituting a logical extension and strengthening of the success of the JA in shaping cooperative agreements for data sharing and formation of a shared aquifer database.

The SADA and modeling processes revealed two critically important aspects relevant to the management of the aquifer: (1) it is still early enough in the development of the NSAS that priority threats have not yet, according to national reports, resulted in ecosystem impairment; and (2) the risk of transboundary causes for these threats is low. These findings provide the Nubian countries the unique opportunity to direct management strategies to prevent rather than mitigate resource impairment.

COMMITMENT, PLANNING AND COORDINATION

THE REGIONAL STRATEGIC ACTION PROGRAMME

Following adoption of the SADA, a team of experts from the four countries, as well as the GEF, UNDP, UNESCO, and the IAEA, developed a SAP, with an "Aquifer Vision": "To assure rational and equitable management of the NSAS for sustainable socio-economic development and the protection of biodiversity and land resources whilst ensuring no detrimental effects on the shared aquifer countries." The SAP identifies more than 100 management actions and targets to strengthen the regional and national capacities "to achieve the objectives and the vision for the NSAS. General targets include: strengthening existing cooperation (i.e., the JA); enhancing the cooperation framework on data exchange; implementing legal and institutional requirements to enforce regional protection and control of the NSAS; and control of waste disposal practices. Climate change specific targets include establishing and strengthening legal and institutional mechanisms to enable adaptation to climate change and cooperation on collecting data related to climate change. Legal and institutional targets include establishing legal and institutional procedures to develop transboundary cooperation and integration of the NSAS dependent socio-economic activities. Agriculture targets include preserving and protecting the water resources of the NSAS from the negative effects of agriculture; and preserving agroecosystems and associated biodiversity. It is anticipated that the majority of these management actions will take place under the coordination of the JA, with expected full cooperation among national institutes and the responsible government authorities.

In September 2013 in Vienna, the Nubian SAP was agreed and signed by senior representatives from all four countries, as well as the Chair of the JA. The signing of the SAP document at the ministerial level represents an important step forward in building the cooperation process among the NSAS countries. It is the common and joint commitment to the identified shared vision for the cooperative management of the NSAS by the States and the JA, as well as the commitment to implement the actions.

IMPLEMENTATION: MAKING REALITY OF REFORM

STRATEGIC ACTION PROGRAMME IMPLEMENTATION

The SAP was constructed at a time during which there was political turmoil in the region, particularly the civil war in Libya, leading to lengthy pauses in the implementation of activities. This has also slowed the SAP implementation process. At the 7th World Water Forum in South Korea in 2015, Chad, Egypt and Sudan reiterated their intent to cooperate toward the sustainable management of the NSAS and with the national reconciliation government formed in December 2015 under the aegis of the United Nations, Libya has been able to resume cooperation with the other NSAS countries to advance SAP implementation. Preparation of a GEF-UNDP-UNESCO-SAP implementation project began in 2015 and it was approved for implementation in April 2018. The new project will initiate the implementation of the agreed SAP through addressing gaps in knowledge on the NSAS resources and dependent ecosystems; supporting capacity development at the local, national and regional levels to ensure the JA and the national authorities are best able to manage the water resources and dependent ecosystems; to facilitate national reforms on policies necessary to successfully implement the SAP and support the formulation of National Action Plans (NAPs) linked to the SAP; utilize the participation and results from four pilot actions to demonstrate improved management approaches at the national and local level using practices encouraged through the project and experiences from other regional initiatives; and to identify future financing options to assist the countries and the JA in the longer term to implement the agreed SAP.

> "The Project reflects the determination of our states to move forward in the implementation of an integrated management plan for the water resources and the ecosystems of the NSAS in light of the potential threats imposed by population growth and consequent agricultural, industrial and urban development activities."
>
> **H.E. Al Hadi Suleiman Henshir**,
> *Ministry of Water Resources, Libya*
> *(at the 2013 SAP signing event)*
> *(IAEA, 2013, a)*

NATIONAL ACTION PLANS

The effective implementation of the agreed SAP requires the countries of the NSAS to develop corresponding NAPs, specific to each country, aligned with national development plans and policies and where necessary to transform policies and institutions to deliver the expectations of the SAP. The NAPs will present a road map for the implementation of key legal and institutional reforms, at the national level, identified within the SAP, and ensure the regional compatibility of the approaches between each country. The NAPs will also include the means and mechanisms for outreach/awareness-raising targeted at various stakeholder groups to reinforce the importance of the protection and equitable use of the aquifer and the need for effective management of groundwater and surface waters. National teams will engage stakeholders to develop NAPs that address each country's specific needs and common elements to all countries. A series of national and regional workshops will be required to review national policies and institutions and develop appropriate changes where needed. The reviews will cover national monitoring and sharing of data; legal and institutional mechanisms to protect groundwater from over exploitation and consideration of ecosystem dependency on groundwater (taking into consideration potential impacts from climate change, economic development, population increases and migration, etc.); development of common policies and procedures for managing the NSAS, including approaches for ensuring common adopted management actions are 'climate proofed'.

DEMONSTRATIONS/ PILOT ACTIVITIES

The SAP identifies a range of pilot/demonstration activities to be undertaken in one or more countries with the expectation that the results will be shared and used to prepare a more detailed SAP program going forward. Pilot demonstration projects are integral to validating the approaches for resources and ecosystem management within the NSAS. These pilot activities will be important for both national and regional authorities to gain experiences from and for local communities who are dependent on the ecosystem services provided by oases, to better appreciate the value and the vulnerability of these important groundwater dependent resources. The focus of these pilot demonstrations will be addressing elements that are either of common problem or can be used in specific transboundary locations that will further encourage international cooperation. The pilots will assist with the development of the NAPs and encourage additional national resources to be provided, that will aid sustainability of the SAP actions and facilitate replication up scaling of the pilots both nationally and regionally.

The SAP identified two themes that should be explored by the pilot actions: water conservation and ecosystem conservation. Tentative pilot projects were identified during the development formulation of the SADA and SAP and prioritized during the SAP implementation project preparation based on about 20 criteria, including: Relevance to the SAP Environmental Quality Objectives; Relevance and interest to the JA and to local and national authorities with sustainability likelihood; Interest to multiple countries, to ensure lessons had greatest opportunities for replication; Offer significant training opportunities and have the highest possible engagement of local/national stakeholders; and practical/logistical aspects: pilots that would be readily accessible (i.e. would not involve excessive travel), security issues, completed within agreed timescale and budget. Following the prioritization of potential pilots, national experts developed detailed proposals on the preferred national pilot projects. Four pilot demonstrations were chosen; with each expected to be carried out within the duration of the project (around 30 months). The lessons from the four demonstration actions will be widely disseminated to stakeholders across the region (in particular to decision makers, farmers, nomadic herdsmen) to further encourage uptake of the concepts tested.

IMPROVED STATE

Efforts to develop mechanisms to cooperatively manage groundwater are relatively new. The 2006 GEF-funded project constitutes a significant milestone in the slow but steady path to cooperation in the management of the shared NSAS. The Nubian countries have made significant advances in understanding the condition of the aquifer and the linkages between potential changes in the aquifer and responses of environmental and human systems. The SADA, and associated regional groundwater hydrological model, established a solid baseline of environmental and socioeconomic data on the Nubian, including estimates of storage, abstraction rates and locations, precipitation rates, population distribution, and primary and secondary stakeholders. The objective was to produce a regional model of the aquifer to predict the decrease in aquifer level due to abstraction. The groundwater resource data and information baseline, in combination with the model, can be used to inform and monitor SAP implementation

MORE ONLINE

GEF Project Page
https://www.thegef.org/project/formulation-action-programme-integrated-management-shared-nubian-aquifer

GEF Project Page
https://www.thegef.org/project/enabling-implementation-regional-sap-rational-and-equitable-management-nubian-sandstone

EMPOWERING CITIZENS AND COMMUNITIES THROUGH ACCESS TO SUSTAINABLE AND SAFE WATER AND SANITATION SERVICES

IMPLEMENTING THE INTEGRATED WASH GOVERNANCE APPROACH IN THE PHILIPPINES

This story is about how an integrated approach to water, sanitation and hygiene (iWaSH) has been recognized by national and local planners as a key to address WaSH issues and concerns in the Philippines. Piloted in 16 municipalities, the iWaSH approach was translated into concrete actions that secured investments and local policy support to improve access to WaSH services. Most importantly, communities were organized and engaged to be part of the iWaSH process, with the end goal of sustainably provide safe drinking water and to put an end to open defecation.

Credit: Erwin Lim_Til

INITIAL STATE

INSUFFICIENT ACCESS TO SAFE OR IMPROVED WATER AND SANITATION SERVICES

While there has been promising progress under the UN Millennium Development Goals in terms of water, sanitation and hygiene in the Philippines, with improved sanitations facilities recorded at 74 percent in 2015, up from 57 percent in 1990, about one quarter of the population is still not served with private improved sanitation facilities. This means that about 10 million Filipinos defecate in the open, which has serious consequences to health (exposure to water borne diseases), human development and dignity for the affected population—as well as for the entire country. The National Anti-Poverty Commission (NAPC), a government agency of the Philippines, pinpoints these deprived populations across 455 municipalities, located mostly in the ten poorest provinces in the country. These municipalities are referred to as *Waterless Municipalities*—declared so when 50 percent of a municipality's total households do not have access to safe water, sanitation and hygiene.

The economic loss in these communities, due to water scarcity and poor sanitation, can be felt both in terms of health and livelihoods, through, for example, declining fish yields and declining tourist occupancy in areas with high levels of coliform. Women and girls are affected the most, as water, sanitation and hygiene are inextricably linked with their reproductive and economic roles, safety and dignity.

INSTITUTIONAL FRAGMENTATION

Exacerbating the problem is the fragmentation of structures, policies and programs on safe water, sanitation and hygiene at the national and local levels, resulting in uncoordinated and ambiguous policies for the sector. A 2013 Philippines water supply and sanitation sector assessment conducted by the Asian Development Bank indicated that more than 30 different agencies in the country had some role in water resources and water supply and sanitation. At the national level, the absence of a single national government agency has meant that there has been no mechanism for translating the government's policies, strategies and goals into a comprehensive water supply, sanitation and hygiene program.

This fragmentation also translates to numerous structures, policies and plans at the local level. Programming and budgeting for water and sanitation has been done through various planning modalities and processes. The mandate to operationalize water and sanitation programmes and projects at the local level is also done by several offices. This has resulted in uncoordinated and contradicting policies and practices for the sector, as well as lack of capacities at the local level, especially in the 455 municipalities that have been declared waterless, to implement an integrated approach to water sanitation and hygiene. This fragmentation also means water, sanitation and hygiene projects are often implemented in silos, resulting in situations where sanitation facilities are being built without sustainable water supply, and become non-functional, and where water supply systems are being built in communities without proper sanitation programs, leading to contaminating sources and high cases of water and sanitation-related diseases.

TRANSFORMATION
GOVERNANCE REFORM PROCESS

ASSESSMENT, ANALYSIS AND CONSENSUS BUILDING

THE JOINT PROGRAMME

In 2009, UNDP and UNICEF joined forces, in partnership with the Philippines' National Economic Development Authority (NEDA) and the Department of Interior and Local Government (DILG) to support community-based initiatives in the Philippines to enhance and establish the sustainable delivery of water in depressed communities in five regions and 36 Waterless Municipalities in the country. The *Joint Programme*, financed by the Spanish Millennium Development Goals Achievement Fund, aimed to contribute to the improvement of efficiency, access, affordability and quality of potable water services provided by utilities, and to increase the capacity of local duty bearers and stakeholders, particularly women, to demand and sustain the delivery of services.

The *Joint Programme* was able to significantly raise awareness that water was not just an engineering concern for installation of pipes and faucets, but a basic human right and governance issue; and that access to safe water has a wider impact on human development and should be considered as a crosscutting issue to be mainstreamed in other government and development partner programmes through the emphasis of IWRM approaches.

The *Joint Programme* also developed policy studies to support scaling-up pro-poor water service delivery. These included recommendations for improving the financing and programming policies in the sector, national and local government cost sharing arrangements for water supply programs for waterless municipalities, and the adjustment of tariff-setting guidelines for small water providers. The *Joint Programme* provided demonstrable evidence that the poor were willing and able to pay for water supply services, as long as there was sufficient transparency and accountability in the governance system, as well as effective communication mobilization. When the community actively participated in running their own water systems, there was increased accessibility and fee collection. In addition, communities also demonstrated that they were capable of transferring knowledge to other waterless communities through mentoring and 'god-parenting'.

LOCALIZED CUSTOMER SERVICE CODE

One of the most successful initiatives piloted by the *Joint Programme* was the Localized Customer Service Code (LCSC) for small water systems. An LCSC is a binding social contract between a service provider and its customers that is developed through a consultative and participatory process involving both parties. It reflects the mutually-agreed roles, accountabilities and responsibilities of both the service provider and the consumer in operating and maintaining the water system. The adoption of LCSCs resulted in improvements in the delivery of water services, including increased connection to water services, reasonable tariffs, more effective collection, higher efficiency in water use, improved quality and availability of service, and more active involvement of consumers in the operation and maintenance of the system. This approach has provided an atmosphere of transparency and accountability to water services delivery and proper management of water supply facilities, which has encouraged LGUs to replicate this practice in other barangays (village; neighbourhood). The 36 Joint Programme municipalities were prioritized under the government's Sagana at Ligtas na Tubig sa Lahat (SALINTUBIG) program.

SAGANA AT LIGTAS NA TUBIG SA LAHAT (SALINTUBIG) PROGRAM

The Government of Philippines' Salintubig Program, which started in 2011, is designed to provide grant financing and capacity development programs to enhance and improve capacities of Local Government Units (LGUs) and water service providers in planning, implementation and operation and management of water supply facilities in a sustainable manner, and for the implementation of water supply projects in:
(1) waterless municipalities;
(2) poorest barangays with high level of waterborne diseases;
(3) resettlement areas; and
(4) Rural Health Units/birthing clinics without access to safe water.

"Before, we had a problem with tourism because most of our constituents practice open defecation, especially on the beaches. We have beautiful beaches, however they are very dirty. When the iWaSH programme was brought in to our municipality, cleanliness and hygiene were introduced. We encouraged everyone to build their toilets. Since water is also a problem, we implemented water and sanitation projects simultaneously. The iWaSH programme has had a big impact in our municipality because we have reduced the rate of water-borne diseases, at the same time, our people have also been educated on the importance of safe drinking water and cleanliness."

Mayor Arturo Virtucio of Aroroy,
Masbate

COMMITMENT, PLANNING AND COORDINATION

Building on the experience of the *Joint Programme*, UNDP and the Spanish Government, under the SDG-F funding modality, joined UNICEF, UN Women and WHO to implement "Pro-WATER: Promoting Water and Sanitation Access, Integrity, Empowerment, Rights and Resiliency". It sought to empower citizens and communities with access to sustainable safe water and sanitation services, aiming to increase the participation of women and girls in planning, decision-making, monitoring and implementation of safe water, sanitation and hygiene projects and programs; and to reduce the incidence of water-borne diseases and practice of open defecation in target municipalities.

IMPROVED GOVERNANCE OF SAFE WATER, SANITATION, AND HYGIENE, ESPECIALLY AT THE LOCAL LEVELS

The development of an integrated approach started to materialized through the *Joint Programme*. The operational iWaSH framework has laid the foundation for pursuing a coordinated and harmonized approach on integrated safe water, sanitation and hygiene at the local level. The framework synthesizes available knowledge and existing efforts on WaSH by programme development partners and translates these to concrete actions. Communities and groups are organized and engaged to be part of the development, operation and management of infrastructures for iWaSH. The framework encourages complementation among programmes and projects and identifies where each agency's strength and weaknesses lie in addressing WaSH issues/concerns.

With the adoption of the integrated approach by ten beneficiary LGUs, local governance structures and mechanisms for its implementation have been established/ revived and strengthened using the integrated approach. These include the creation of LGU iWaSH Councils, an oversight decision and policymaking body for safe water, sanitation and hygiene; LGU iWaSH teams that serve as the local implementers and facilitators of the iWaSH approach; the Integrated Barangay Safe Water, Sanitation and Hygiene Associations (i-BWASAs); LGU WaSH Task Force, Committees and community teams created for Water Quality Monitoring in Masbate areas, and on Water Safety Planning in all target municipalities; and the Citizens/Integrity Groups which will serve as the voice of the community to ensure transparency, accountability, and participation on WaSH.

iWaSH became a priority in the 10 LGUs evidenced in their medium and long term (5-10 years) targets and investment requirements to increase access to safe water, sanitation, and hygiene in the form of infrastructure development and rehabilitation of iWaSH facilities, capacity development programs to organize barangay iWaSH associations and community groups, sanitation and hygiene promotion/ advocacy, provision of materials and equipment for water quality monitoring, among others. Within the 10-year implementation period of the iWaSH Sector Plans, the LGUs proposed to increase their access to safe water from 69 percent to 97 percent and to increase their access to sanitation and hygiene from 68 percent to 100 percent, based on proposed investment requirements.

Under the *Joint Programme* an increase in the participation of women and girls have been documented from various interventions delivered by programme development partners in the areas of planning, decision-making, monitoring, and overall implementation. More than 3,000 women were meaningfully engaged in the conducting of assessments and data validation, planning, resource allocation, monitoring and evaluation, sanitation programming, community/social preparation activities, and in communication and advocacy on iWaSH. More than 4,000 girls actively participated in group hygiene activities in schools and daycare centres.

> "Through the iWaSH programme, we will able to build toilets for everyone in Barangay Tanawan, even for the indigenous peoples. We achieved the Zero Open Defecation level. Although we have a problem with water supply, we are already working on it so that we could have safe water."
>
> **Barangay Captain Ramil,**
> *Raviz of Barangay Tanawan, Capalonga, Camarines Norte*

Fifteen LCSCs on iWaSH were developed as a result of the community organizing facilitated by the Regional WATSAN Hubs in six targeted LGUs. As part of the modeling solutions demonstrated in the pilot sites, Sanitation Marketing (SANMARK) low-cost sanitation technologies have been introduced in all LGUs, while actual demonstration was conducted in the project sites/barangays. As a commitment by the programme to include other spatial areas, iWaSH facilities in all public spaces were identified as part of the LGU's priority targets and investment requirements in the municipal sector plans, which started in 2018 and are targeted to be completed within a 5-10 year timeframe through government allocations and other potential resources.

The *Joint Programme* generated knowledge to aid policy advocacy, planning, and capacity building based on the experiences and lessons learned from the implementation of safe water, sanitation and hygiene that benefit women and girls in households, schools, health centers and public spaces. Three Regional Hubs were capacitated in iWaSH and led the implementation of programme activities and achievement of the target outputs at the local level by providing technical/advisory and related capacity development assistance to beneficiary LGUs. Seven training modules on iWaSH were developed on Community-led Total Sanitation; Water Safety Planning; Water Quality Monitoring & Risk Assessment; iWaSH Assessment; Sanitation Concepts & Approaches; Results-based Sector Planning. Guidelines on iWaSH Community Organizing and Infra Development, and an iWaSH Assessment Tool were also developed.

IMPLEMENTATION: MAKING REALITY OF REFORM

Currently, under the GoAL WaSH-iWaSH Governance project being supported by UNDP and the Stockholm International Water Institute (SIWI), the local implementation of the iWaSH approach is being replicated in six (6) additional municipalities in Regions 10, 11, and 12. The same technologies, process and approach are being employed following the gains of the Pro WATER programme. In addition, fifteen (15) Regional Hubs have been capacitated on the integrated approach to assist the municipalities in the GoAL WaSH project implementation as well as other waterless LGUs under the SALINTUBIG and Assistance to Municipalities (AM) programs of the Department of the Interior and Local Government (DILG). Between April 2017 to September 2018, a total of 326 LGUs under the DILG's SALINTUBIG and AM programs have been assisted in developing their Municipal WASH sector plans using the iWaSH approach.

The DILG carried out iWASH assessments in September 2018 covering a total of 79 LGUs. The results of the assessments will guide the formulation of the iWaSH sector plans of the recipient municipalities. The sector plans are now a major requirement for accessing government funds on WaSH under the Department. In addition, other regions outside of the project areas with SALINTUBIG projects are now provided with water safety plan training in partnership with DOH.

The iWaSH approach being adopted and mainstreamed in the DILG is the key strategy to sustaining the gains and successes of the Joint Programme. Initially, the DILG has adopted the integrated approach in its capacity development program, specifically in the development of the iWaSH sector plans as a major requirement to accessing the SALINTUBIG and Assistance to Municipalities (AM) funds. The DILG has also taken various efforts to raise the integrated approach at the policy level through its regular participation to on-going discussions and advocacy for the WaSH sector integration process. The DILG has also initiated the formulation of an iWaSH Policy that will guide the implementation of the integrated approach on WaSH in the regional, provincial, municipal and community levels, in close coordination with the Department of Health.

The iWaSH framework (and agreed indicators and targets) is considered the greatest contribution of the *Joint Programme* in the sector. One may argue that the approach may not be something new as each agency carries with it a semblance of each of the WaSH sector dimensions. What is innovative is how these three were articulated and translated to concrete actions by the partner agencies under one program that was offered to local governments, based on the willingness to work in a coordinated manner, filling in the gaps to strengthen either the water supply and sanitation components, pooling necessary resources (and augmenting even), and working on an agreed set of targets. It has also put together each of the agency's own innovative approaches to support local governments' goals of increasing access to safe water, sanitation and hygiene.

Credit: Eric Merced

"The integrated approach helped bring about the involvement of the different national and international agencies in implementing WaSH projects. Health, primarily, was only the problem of the Municipal Health Office. With the integrated approach, health becomes the concern of the whole municipality. It also increased the awareness in the LGU (and communities) on health issues related to WaSH though advocacy and campaign on safe water, sanitation, and hygiene."

Dr. Henry Novales,
Municipal Health Officer, Municipality of Bobon, Northern Samar.

Members of the RHubs are invited by other local government units to conduct trainings, i.e. Community-Led Total Sanitation to assist the communities eliminate open defecation. The RHub VIII has conducted an orientation on the iWaSH Framework and Philippine Approach to Total Sanitation – Zero Open Defecation Program in the Municipality of Javier, Leyte last August 2017. The members of the RHub V have also initiated to distribute hygiene kits to members of the Kabihug Tribe in Capalonga, Camarines Norte to promote behaviour change. Moreover, the RHubs also facilitate the series of trainings conducted by the Department of Interior and Local Government to all members of the Philippine Regional Hubs, covering all 17 regions in the country. The members of the Hubs have gained expertise to share and mentor what they have learned from the ground, especially on the SDGs, iWaSH framework, community organizing, gender equality and women empowerment, communication, disaster risk reduction management and climate change adaptation, among others.

The adoption and local implementation of the integrated approach in the target LGUs as manifested in their support to establish iWaSH governance structures like the iWaSH councils and iWaSH teams, was instrumental to setting the target and investment requirements to increase access to safe water, sanitation and hygiene in the municipalities. Although these investments have yet to materialize, this will improve funding agencies' system of allocation and prioritization based on data-informed targets and priorities. The creation of community teams and local associations on iWaSH, especially the i-BWASAs, Water Quality Monitoring and Water Safety Plan Teams will continue to assess water quality and contribute to sustainably managing water sources and systems.

The modeling solutions for the implementation of the iWaSH approach in demonstration sites such as the construction of iWaSH facilities, the implementation of the water safety plans, and the conduct of Community-led Total Sanitation (CLTS), increase the opportunities for communities to improve their access to safe water. They are also guided on how water sources can be protected and sustainably managed to avoid risks of contamination, and finally put an end to open defecation through proper sanitation and hygiene practices.

IMPROVED STATE

Although it might be early to conclude that the reduction in the morbidity rates of water-borne diseases is attributable to the interventions of the iWaSH programme, still, some key actions have contributed in the results and are worth noting. In total, 7,169 households in six regions received improved access to water supply following the construction of water supply systems. Moreover, the provision of the Water Quality Monitoring Kits in the latter part of 2015 to 1st quarter 2016 has been valuable in the identification of the contaminated drinking water sources in the target municipalities. In one municipality, drinking water sources tested revealed that majority, 87 out of the 110 water sources, tested positive for E.Coli and Total Coliform. LGUs had the opportunity to immediately take action and communicate this to the community. Some key responses from the local government include community information-drive, i.e., advice to source alternative drinking sources or to disinfect water sources through boiling; distribution of aqua tabs; and disinfection of water sources through chlorine, among others.

In the review of the health data among the beneficiary LGUs, a reduction on the number of water-borne diseases have been observed in the municipalities of Bobon, Mapanas, Capalonga, and Siayan from 2014 to 2017. The Municipality of Siayan reported a steady decrease of waterborne diseases from 121 to 43 in 2015 to 2017. In the municipality of Mapanas, there was a significant drop in water-borne diseases in 2017. From 484 cases reported in 2016, it has decreased to 211 in the 1st to 3rd quarter of 2017. A rise in water-borne disease cases have been observed especially in the Northern Samar areas due to the onslaught of typhoon Nona in December 2015, devastating the majority of the areas and leaving communities without food, minimal access to safe drinking water sources, other basic commodities and clothing. In the case of Bobon, the destruction of the communities' homes, continued flooding, and lack of potable water resulted in an increase of 183 cases in 2016, up from the 38 reported cases in 2015. In 2017, the municipality reported a 45 percent reduction in cases of water-borne diseases. In spite of the challenges brought about by the devastation, the two municipalities were able to recover, and are among the project sites that continued to be active, and fully supported project implementation

MORE ONLINE

GoAL WaSH Philippines
http://www.watergovernance.org/programmes/goal-wash/philippines/
iWaSH programme Page
http://iwash.gov.ph/

APPLYING THE HUMAN RIGHTS-BASED APPROACH TO WATER SUPPLY SUSTAINABILITY

ADDRESSING THE VICIOUS CYCLE IN VIABILITY OF WATER SUPPLY SERVICE PROVISION IN TAJIKISTAN

This story is an example of a balanced approach taken to unbundle the vicious cycle in water and sanitation services. Technical assistance was provided to each rural water and sanitation services systems stakeholder group through simultaneous implementation of policy actions to improve tariff policies and fee collection rates, and to protect consumers through implementing confidence building measures between suppliers and consumers.

Credit: Tajikistan GoAL WaSH Project, 2017

INITIAL STATE

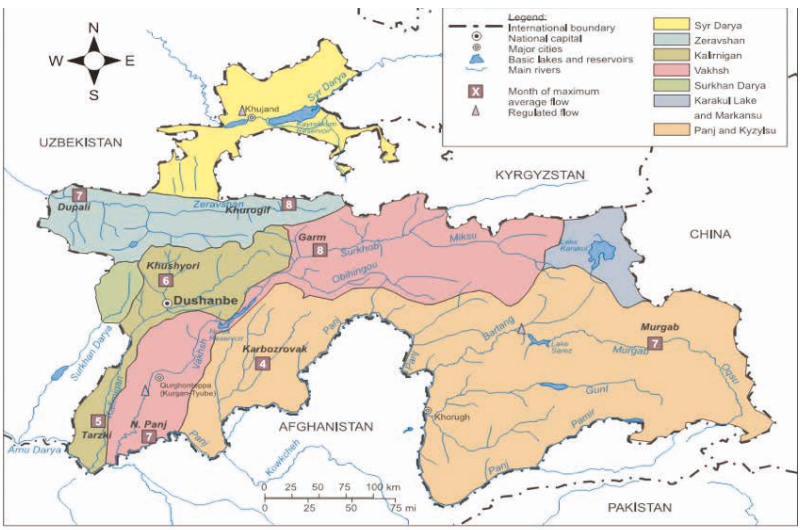
Tajikistan is a landlocked country located on the western tip of the Himalayas and is home to some 8.7 million people. It is the fifth most water-rich country in the world, with about 13,000 cubic meters of water available per capita (Water Governance Facility, 2017). Access to safe drinking water, however, is one of the key development challenges facing Tajikistan. According to official government figures (2011), less than 50 percent of the population has access to potable water supply. Disaggregated by urban, semi-urban and rural settlements, the estimates are about 85 percent, 60 percent and 45 percent respectively. The corresponding sewerage services (drainage systems) are at about 80 percent, 20 percent and less than one (State Unitary Enterprise "Khojagii Manziliyu Kommunali", 2011). Consequently, water borne diseases, such as diarrhea and dysentery, are rife, and negatively affect the economic productivity of households. Women and girls, as providers and managers of domestic water, guardians of hygiene and family health caretakers, are heavily affected by poor access to water service. This negatively impacts on their health and work burden, time and mobility constraints.

Most of the drinking water and sanitation systems in the country were built during the 1960s and 1980s. After independence and the end of subsidies from the Soviet economy, the Soviet infrastructure legacy rapidly deteriorated across Tajikistan. In recent years, only 68 percent of urban and semi-urban water sanitation systems have been in working condition (with seven percent partially functioning), and less than 40 percent of rural settlement systems have been functioning (with 44 percent partially functioning). Moreover, 50 percent of sewerage systems in urban and semi-urban areas and 85 percent in rural areas have been dysfunctional (Water Governance Facility, 2017).

The government has constitutionally endorsed ownership of the country's water resources by the state along with the sole responsibility over provision of drinking water to the population. However, among other important social and economic issues in the country, it remains a challenge for the government to finance the drinking water sector. The little funding provided through the state budget is not enough to maintain functioning systems, let alone rehabilitation and recovery efforts that are needed. At the same time, as the result of heavy water supply services subsidization during the Soviet Era, water conservation and willingness to pay full-cost recovery tariffs have not been institutionalized.

WATER AND SANITATION SECTOR IN TAJIKISTAN

MAP 10



The boundaries and names shown on this map do not imply official endorsement or acceptance by the United Nations.

Credit: WGF, 2017

THE VICIOUS CYCLE IN VIABILITY OF WATER SUPPLY SERVICE PROVISION

The chronic underinvestment in rural water infrastructure has resulted in a "vicious cycle", characterized by low water fee collection rates; poor and postponed maintenance; higher share of non-revenue water (water losses); deteriorating service provision; lower willingness to pay; efficiency deterioration; supply organizations demotivated and unable to bear costs; and service failure.

ACCESS TO SAFE DRINKING WATER AND SANITATION IS ONE OF THE KEY DEVELOPMENT CHALLENGES FACING TAJIKISTAN.

TRANSFORMATION
GOVERNANCE REFORM PROCESS

ASSESSMENT, ANALYSIS AND CONSENSUS BUILDING

THE HUMAN RIGHTS-BASED APPROACH TO WATER

UNDP promotes a human rights-based approach (HRBA) in its work to improve water resources management and access to water and sanitation. The HRBA emphasizes both development outcomes and the process by which rights are realized. It focuses on the relationship between obligations and rights, and on improving the capacity of those with responsibilities to respect, protect and fulfill rights (duty bearers) to meet their obligations, and on improving the capacity of citizens (rights holders) to claim their rights.

In September 2010, the UN Human Rights Council, affirmed the right to water and sanitation as derived from the right to an adequate standard of living, which is contained in several international human rights treaties. The human right to water and sanitation provides the procedural principles of equality and non-discrimination, participation and accountability, and substantive standards (availability, safety, acceptability, accessibility, and affordability) to guide the realization of access to water and sanitation for all. Applying an HRBA in supporting the implementation of the right to water and sanitation advances the process ("how") and the substantive standards ("what") of the right.

A number of development agencies have useful tools and manuals on how to implement the HRBA to water and sanitation, and have reported a set of practical challenges from the international experience, including: resource constraints; the inability of low-income users to pay for water supply and sanitation services; weak institutional capacity; and the need to strengthen the political will to implement the right to water and sanitation. Each of these challenges are relevant to Tajikistan, despite the fact the government has signed or ratified most international human rights conventions and treaties relevant to water, sanitation and health, and is thereby committed to take concrete and deliberate measures toward progressive realization of the human right to water and sanitation.

HUMAN RIGHTS-BASED APPROACH PILOT CAMPAIGN

Given the lack of an explicit HRBA to water governance in Tajikistan, an early GoAL WaSH pilot project introduced the HRBA concept in the country through public awareness campaigns on water rights and responsibilities at the municipal level, reaching more than 43,700 residents in targeted small rural communities. The project supported, among other activities:
(1) a nationally recognized studio delivered 36 plays on water rights and responsibilities, which reached a large portion of the population of four jamoats (rural municipalities);
(2) a workshop to help duty bearers, including regulators, operators and service providers, improve their awareness on their specific roles and responsibilities to rights holders; and
(3) implementation of community demo projects on construction of water supply and sanitation and sanitary wells for collection of domestic wastewater, which resulted in more than 1,500 residents receiving improved access to safe drinking water and more than 4,500 residents benefitting from improved sanitation services.

An end-line project survey of stakeholders indicated that, among the 400 households surveyed, 70 percent improved their knowledge of water rights and responsibilities among duty bearers and rights holders. These results provided strong impetus for an immediate intervention at the national level to create an enabling policy environment for effective implementation of HRBA to water and sanitation in the country.

COMMITMENT, PLANNING AND COORDINATION

AN OPPORTUNITY TO UNBUNDLE

A strategic approach was developed, in partnership with the UNDP-supported Tajikistan Water Supply and Sanitation Project (TajWSS), with tariff policy improvement and implementation as cornerstones to improving sustainability of rural water supply and sanitation in the country. The justification for this approach was largely based on a situation analysis conducted in 2012 by UNDP about the state of tariff policy implementation in Tajikistan (Water Governance Facility, 2017). That analysis determined that:
(1) national laws and regulations do not pose any evident limitations on the choice of tariff schemes and tariff levels; meaning service providers have the freedom to charge tariff schemes and raise tariffs;
(2) although the law on drinking water directly recognizes water fees from consumers as one source of financing, the legislation on the whole lacks reference to principles of tariff setting in general; and
(3) tariffs for drinking water supply and sanitation services remain critically low and for most systems by at least four-to-five times less than the full-cost recovery level.

To facilitate vicious cycle unbundling, the new phase of the GoAL WaSH project aimed to provide technical assistance to each rural water and sanitation services systems stakeholder group—national authorities, regulating bodies, service providers and consumer groups—through simultaneous implementation of two inter-linked policy actions:
(1) improving tariff policies and
(2) improving fee collection rates and
(3) protecting consumers through implementing confidence building measures between suppliers and consumers.

IMPLEMENTATION: MAKING REALITY OF REFORM

IMPROVING MANAGEMENT MODELS AND TARIFF POLICIES FOR RURAL AREAS

The project first developed a methodology to introduce a unified tariff setting mechanism; to prevent monopolistically high tariffs; to reflect a balanced combination of the economic interests of supply organizations and consumers; and to provide economic incentives for commercial entities that provide water and sanitations services in improving efficiency of resource use and reduction in costs of rendered services. The methodology provided relevant concepts, principles, approaches and a step-by-step guidance on each of the cost items that comprise a full-cost recovery tariff scheme, primarily for rural water supply but also with application for urban systems. The methodology also provides a comprehensive list of documents required for submission by service providers for any request to justify tariff increase. It offers clarity on the process of tariff endorsement and agreement between the suppliers and regulators and also guides supply organizations in improving information and data management with regard to their operations. Preparation was carried out under the joint leadership of the Antimonopoly Agency (the focal regulator on tariff policies) and the Ministry of Land Reclamation and Water Resources.

Once the methodology was ready, target water suppliers and regulating agency specialists along with local authorities were trained in the development of full-cost recovery tariff schemes. Responsible heads, accountants and economists from each took part. Participants received copies of the methodology in advance, so the actual trainings could focus on a tariff setting exercise guided by the methodology. The exercise involved constructing tariff proposals and submitting them to the Antimonopoly Agency for review and comment. After completing the training, each supply organization reported that they had learned how to apply the methodology on tariff setting for their respective systems; improved their knowledge and skills to develop full-cost recovery tariff schemes; determined their actual

level of full-cost recovery rates and developed stages of moderate increase toward those rates; and gained experience on how to present their tariff proposals for agreement to the regulatory body, and of the complete process of tariff endorsement and agreement. In the last instance, as part of the exercise, the project team rendered mediation support to the suppliers and consumers in discussing suggested tariff schemes through a "public hearing" process and provided consultation services between suppliers and the regulating agency in undergoing administrative procedures to justifying and endorsing suggested tariff schemes.

ESTABLISHING MECHANISMS TO PROTECT CONSUMER RIGHTS

Achievement of full-cost recovery tariffs alone is not considered a goal in itself. Rather the task is to demonstrate that full-cost recovery ultimately and necessarily results in adequate service provision and improved access to safe drinking water. For tariffs to be raised and collection rates duly maintained, consumers need assurances that the service provider's anticipated improvement plans would actually materialize.

The important issue therefore is confidence building in the immediate term, foremost through means and measures of accountability and operational effectiveness among service providers. When service providers perform duly, fee collection rates should consequently improve. Through project support, a pool of local consultants from the Consumers Union of Tajikistan prepared good governance guidelines that could steer the process of confidence building. These guidelines aimed at achieving several inter-linked immediate outputs, including consumer agreement to raise tariffs; improvements in collection rates; public access to information on expenditures; and consumer participation on service decisions.

The guidelines called for development of Public Advisory Councils (PACs). The aim of a PAC is to protect the rights and interests of consumers and encourage their participation in decision making processes. The PACs provide opportunities for water supply companies to develop effective feedback mechanisms with their clients, facilitating timely consideration of complaints and proposals, as well as more transparency and operational efficiency. They also improve water use practices among consumers. The PAC is formed on the basis of voluntary participation and consists of citizens and representatives of the water supply organization of a particular district (city). The PACs' activities are carried out on the basis of organizing and holding meetings on planned decisions, as well as free discussion of all issues related to drinking water supply, management and collective decision-making. Decisions of the PAC are advisory in nature. Currently in Tajikistan seven PACs are active, established with project support in conjunction with the Consumers Union of Tajikistan. This was done through guideline demonstration; through advocating for PACs as an instrument to improve consumer-supplier relations that would eventually result in higher fee collection rates (as seen by some target water supply operators in rural Tajikistan); drafting PAC terms of reference; and facilitating city support through official administrative agreements.

Application of good governance and consumer rights protection mechanisms requires adequate knowledge of related legislation, norms, rules and regulations, and established legal processes through which consumers may effectively engage with service providers in protecting their rights and demanding accountability from them. Often, in practice, consumers lack professional knowledge to implement these rights. Trainings on water integrity, consumer rights protection and dispute resolution mechanisms were carried out for both rights holders and duty bearers. Roundtables, press conferences and published articles in local media, on social networks and on an official website developed with project support, advocated for good governance consumer rights protection. The website (maintained by the Consumers Union of Tajikistan) also serves as a resource site on accumulated experience under the project, and includes a library of knowledge products, a newsfeed on key policy changes, and a discussion forum to raise awareness about the rights and responsibilities of both consumers and suppliers.

> "The council is established just in time, as now consumers have direct contact with supplier in seeking solutions to problems on quality of water supply in concrete city settlements."
>
> **Mr. Ahmedov T**,
> *Chairman of Home-Owners Association "Umed" and PAC Member*
> *(Tajikistan GoAL WaSH Project Press Release, 2016)*

IMPROVED STATE

Through the PACs, consumers have learned to practice their rights through filing formal inquiries and complaints, which have held their suppliers legally accountable to respond. Service providers have become more accountable and responsive to their clients—through handling inquiries, complaints and disputes regarding service provision—and are more transparent and open to their clients with more frequent information exchange with their clients. Water fee collection rates have improved for all seven PAC-linked water supply and sanitation systems, from moderately to significantly, and on average by about nine percent. The project has demonstrated that more communities are now able to pay near or full-cost recovery tariffs, and are actually willing to do so, provided if certain good governance standards are put in place by respective service providers.

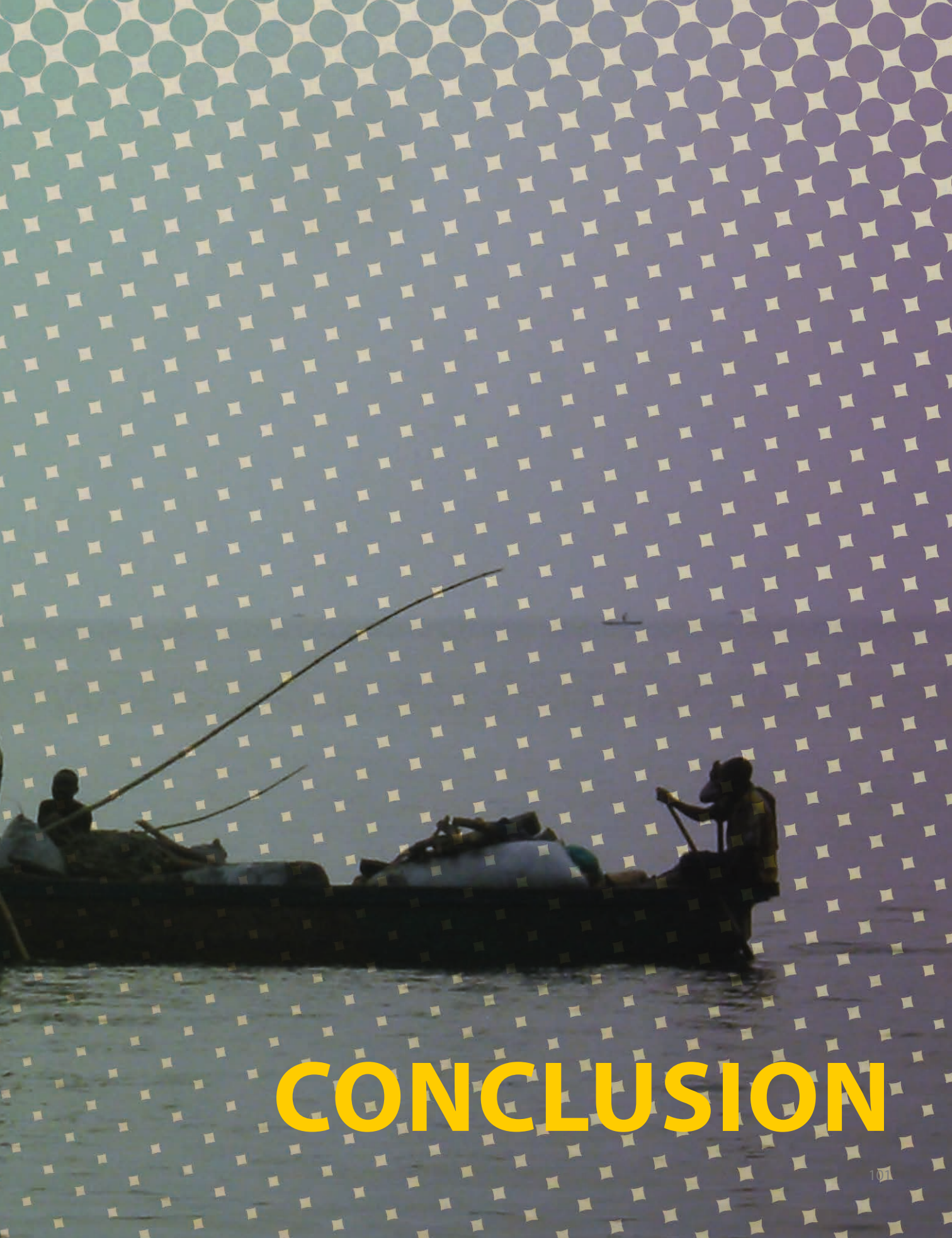
Through a network of volunteers (with basic knowledge of laws and the state of affairs in water supply and sanitation in Tajikistan), organized in targeted districts, the project supported a process of rendering legal consultative services to water consumers in the country. The volunteers keep regular contact with professional lawyers of the Consumers Union of Tajikistan, whom provide consultation to the volunteers as necessary. Through this network, more than 150 consultancy services have been provided (2018) (including pre-trial and court protection in the instance where supplier organizations enforce unfair arrangements, be it on metering or by refusal to provide access or service). Trust and confidence built through the project has led to more frequent exchange of data so both sides understand the limits placed on the other, and actions are taken within the appropriate parameters.

The approach taken by the project is applicable for replication and scaling up in other developing countries where vicious cycle in viability of water supply service provision is evident

MORE ONLINE

GoAL WaSH Tajikistan
http://www.watergovernance.org/programmes/goal-wash/tajikistan/

Credit: Antoine Delepiere



CONCLUSION

WHAT WORKS IN WATER AND OCEAN GOVERNANCE

The present review of a diverse suite of successful water and ocean governance projects reveals a common thread among them—assisting countries and stakeholders to jointly achieve what would have been beyond any of them individually. Indeed, the constraints needing to be addressed for improved freshwater and marine resources and related services governance are generally in the realm of devising rules for interaction and behaviours well beyond individual stakeholders and specific localities.

While actions need to be taken by specific actors in specific places, governance frameworks need to bring concerns of a broader set of interests, horizontally, and also ensure coherence between different organizational levels, vertically. The assessments and agreements developed and supported by the selected projects have indeed helped the actors overcome the silos or limitations otherwise constraining the vision of environmental action or services delivery.

Yet, pilot projects or demonstration initiatives are commonly supported in order to test methodologies or the viability of approaches. Such interventions need specific locational basis and also serve to test that the regulatory or governance arrangements are coherent with local, national and regional priorities and laws. The testing, adapting or replicating of project interventions at a broader scale, or even influencing the way that other interventions are carried out, is an important vehicle for catalyzing finance and ensuring that action does take place in an overall direction toward *integrated, climate-resilient, sustainable and equitable management of water and ocean resources, and universal access to safe water supply and sanitation*.

More specifically, what 'worked' in the cases reviewed, are that the projects:

CATALYZED THE NEGOTIATION, adoption and ratification of an extremely complicated international convention to address the ballast water issue, which can be considered one of the most significant environmental achievements in the early part of this century. The ballast water governance reform is a model for innovative global, regional and national partnerships to support the conservation of oceans and seas. (*Transforming a Global Industry: Stopping the Ballast Water Stowaways*)

HELPED IMPLEMENT PROCESSES and strategies that set global precedents for how distant water fishing nations and coastal states can collaborate on resource management; which serves as a showcase for empowering SIDS to engage on an even footing with larger and more politically influential countries. (*Safeguarding Highly Migratory Tuna Fisheries in the Pacific Islands Region: Applying Blue Economy Principles to Protect the Rights of the Pacific Small Island Developing States*)

ESTABLISHED AND MOBILIZED A PARTNERSHIP to ensure interactive governance of the marine environment, to upscale efforts and enhance coordination and collaboration among key programs, projects and initiatives, and among different organizations and sectors of society working or with a stake in the marine environment—deemed essential to combat the size and variety of marine environment issues at hand, and something no individual project or initiative could tackle alone. (*Coordinating Marine Environment Development Efforts in the CLME+ Region: Mobilizing Partners for the Sustainable Management, Use and Protection of the Caribbean and North Brazil Shelf Large Marine Ecosystems*)

ENTRENCHED THE PRINCIPLES OF IWRM in selected SIDS communities through site demonstrations and building a critical mass, which have resulted in successful local action replication and scaling up to the national level through policy reform. (*Implementing Integrated Water Resources Management in the Atlantic and Indian Ocean SIDS: Demonstrating Ridge to Reef Approaches Through a Participatory Process*)

FACILITATED A SCIENCE TO POLICY APPROACH to move coastal countries with historical tensions to break through the single sector management paradigm to a multi-sector ecosystem-based management approach, which led to the establishment of the world's first LME convention and commission. (*Building the First Large Marine Ecosystem Convention and Commission: Transitioning to Ecosystem-Based Governance of the Benguela Current Large Marine Ecosystem*).

DEMONSTRATED HOW ECOSYSTEM-BASED MANAGEMENT, through incorporating the expansion and strengthening of MPAs and improving access to fishery resources and markets, can contribute to maintaining the ecological integrity of an LME in the context of changing climatic, economic and social pressures. (*Advancing Ecosystem-Based Management in the Humboldt Current Large Marine Ecosystem Combatting Habitat Destruction and Overfishing to Preserve Marine Ecological Integrity*).

FOSTERED STRATEGIC PARTNERSHIPS AND TARGETED FINANCING TO CATALYZE REGIONAL COOPERATION in effective integrated coastal management and demonstrated that countries can come together and commit to long-term sustainable development without a legally binding regional protocol or convention. (*Redefining Coastal Governance of the Seas of East Asia: Piloting and Scaling Up Integrated Coastal Management*).

DELIVERED POLICY, LEGAL AND INSTITUTIONAL REFORMS and identified more than 500 priority pollution reduction investments, which created an enabling environment that catalyzed more than US$3 billion in nutrient pollution reduction investments to successfully reverse a large dead zone downstream, resulting in significant recovery in revenues from tourism and fisheries and local livelihoods. (*Restoring the Danube and Bringing the Black Sea Back to Life: Managing Transboundary Nutrient Pollution from Source to Sea Through a Programmatic Approach*).

UTILIZED INNOVATIVE MODELING applications and techniques to kick start the science to policy process, which built the necessary confidence among countries to enter into an action program to set up the policy and institutional reforms required to establish a framework for collective aquifer management. (*Managing the World's Largest Known Fossil Aquifer: Laying the Foundation for Joint Governance of the Nubian Sandstone Aquifer System Hidden Resource*)

IMPROVED THE EFFICIENCY, ACCESS, AND QUALITY of potable water services through an integrated approach to water, sanitation and hygiene. This approach was recognized by national and local planners and was translated into concrete actions that secured investments to improve access to WASH services in several municipalities. Communities were organized and engaged to be part of the process through local iWaSH associations and citizen integrity groups (*Empowering Citizens and Communities Through Access to Sustainable and Safe Water and Sanitation Services: Implementing the Integrated WaSH Governance Approach in the Philippines*).

PROMOTED A BALANCED APPROACH to spark the unbundling of the vicious cycle in water and sanitation services, through provision of technical assistance to improve tariff policies and fee collection rates, and to protect consumers through implementing confidence building measures between suppliers and consumers; which has resulted in suppliers becoming more transparent and accountable, and consumers increasingly willing to pay near or full-cost recovery tariffs. (*Applying the Human Rights-Based Approach to Water Supply Sustainability: Addressing the Vicious Cycle in Viability of Water Supply Service Provision in Tajikistan*).

The present review followed the sequencing of the WOGP Theory of Change, and helped clarify what each of the specific steps can mean in practice. While clearly demonstrating the diversity of projects in the WOGP portfolio, the review also showed that the generic steps implied by the WOGP Theory of Change are logical, and can sequentially build up toward longer-term impacts in widely variable contexts. For example, the TDA-SAP approach emphasizes the gathering of scientific and other data about the resources and the use of them, and then bringing a broad range of stakeholders to the table to create a shared vision and course of intended action to sustain shared water and ocean systems.

A critical factor for sustainability, displayed in all the stories, is the institutionalization of arrangements. In many of the cases this meant legislation or binding conventions, but in others, actors settled for guiding arrangements. Another factor for success relates to building on existing commitment and institutional structures. Countries or stakeholders that already have an interest in achieving the goals of the project are those that are most likely to engage. It is important that projects harness such interests and existing frameworks and refrain from creating parallel structures.

The present review has also brought the implicit action of 'catalyzing finance' into a more explicit part of the Theory of Change. The success of a governance intervention largely depends on its intentions, by way of projects or procedures, being financed. The success of several projects relates in part to having generated new sources of financing for relevant interventions, but more importantly to affect the way that broader sets of investments are made, following the principles of ecosystem management or the human rights- based approach.

Finally, this review reaffirms our actor-/stakeholder-oriented approach to services and environmental governance. Bringing actors together to find ways to pursue broader societal and environmental interests is an important set of steps toward integrated, climate-resilient, sustainable and equitable management of water and ocean resources, and universal access to safe water and sanitation. This transformative governance reform process moves countries, places and communities from the initial to the improved state of enhanced wellbeing; reduced poverty and exclusion; and more sustainable resources use.

What works in water and ocean governance seems to be long-term commitment and perseverance; and the use of inclusive approaches that bring about sound information on water and ocean resources and the people depending on these resources, and that create the enabling environments for all stakeholders to have real influence on the sustainable development and use of water and ocean resources.

Credit: Gaelle Drivon

SOURCES AND REFERENCES

AIO IWRM SIDS Project (2018). Final Project Report: Implementing Integrated Water Resources and Wastewater Management in Atlantic and Indian Ocean Small Island Developing States. Unpublished.

AIO IWRM SIDS Project website http://aio-iwrm.org/ (Accessed July 2018).

BCLME Interim Agreement 2007. Available at http://www.benguelacc.org/index.php/en/publications

BCLME Strategic Action Programme (2015-2019). Available at http://www.benguelacc.org/index.php/en/publications

BCLME Transboundary Diagnostic Analysis (1999). Available at: http://www.benguelacc.org/index.php/en/publications

Benguela Current Commission Annual Reports (2012-2015). Available at http://www.benguelacc.org/index.php/en/publications

Benguela Current Commission "Benguela News" briefs. Available at http://www.benguelacc.org/index.php/en/publications

Chua, T., Bonga, D., Bermas-Atrigenio, N (2007). Dynamics of Integrated Coastal Management: PEMSEA's Experience. Coastal Management, 34, 303-322.

CLME+ Project websites (accessed July 2018): https://www.clmeproject.org/ and https://clmeplus.org

CLME Regional Transboundary Diagnostic Analysis (2011). Available at https://www.clmeproject.org/download/regional_tda/

CLME+ Strategic Action Programme (2013). Available at https://www.clmeproject.org/sap-overview/

de Barros, Neto, V., de Fatima Jardim, M., Botelho de Vasconcelos, JM., da Silva Tomas, A., Naruseb, A., Esau, B., Kandjoze, O., Shifeta, P., Peters, D., Molewa, E., Ramatlhodi, N., Zokwana, S., Hamukuaya, H. (2015). Two Decades of Inter-Governmental Collaboration: Three Developing Countries on the Move Towards Ecosystem-Based Governance in the Benguela Current Large Marine Ecosystem. Environåmental Development, 18, 54-58.

FAO (2016). Regional Fishery Bodies Sign Agreement to Improve Coordination for Sustainable Fisheries in the Western Central Atlantic Region. Retrieved from http: //www.fao.org/in-action/commonoceans/news/detail-events/en/c/382021/

GEF (2010). From Ridge to Reef. Water, Environment and Community Security: GEF Action on Transboundary Water Resources. GEF, Washington, DC.

GEF (2017). Joint Ocean Management Transforms Coasts in South East Asia. Retrieved from https: //www.thegef.org/news/joint-ocean-management-transforms-coasts-south-east-asia

GEF: Learn: Black Sea Danube film, featuring Al Duda, posted to YouTube 2013. Accessed July 2018. Available at: https://www.youtube.com/watch?v=I2GcNJt8wzw

GEF Project Documents and Terminal Evaluations (Various)

GEF Scientific and Technical Advisory panel (GEF STAP) (2011). Hypoxia and Nutrient Reduction in the Coastal Zone. Advice for Prevention, Remediation and Research. A STAP Advisory Document. Global Environment Facility, Washington, DC.

GEF-UNDP (2016). Voices of Impact: Speaking for the Global Commons. Stories from 25 Years of Environmental Innovation for Sustainable Development. UNDP, New York.

GEF-UNDP (2017). Sea, My Life. Protecting Oceans, Sustaining Our Future. UNDP-Global Environment Finance Unit, New York.

GEF-UNDP-IMO GloBallast Partnerships Programme. (2017). The GloBallast Story: Reflections from a Global Family. GloBallast Monograph No. 25. London, UK.

GEF-UNDP-UNU-INWEH (2015). From Coast to Coast: Celebrating 20 Years of Transboundary Management of Our Shared Oceans. GEF, Washington, DC.

Granit, J., Liss Lymer, B., Olsen, S., Tengberg, A., Nommann, S., Clausen, T (2017). A Conceptual Framework for Governing and Managing Key Flows in a Source-to-Sea Continuum: A STAP Advisory Document. GEF, Washington, DC.

Gutierrez, D., Akester, M., Naranjo, L (2015). Productivity and Sustainable Management of the Humboldt Current Large Marine Ecosystem Under Climate Change. Environmental Development, 17, 126-144.

Gutierrez, M., Castillo, J., Naranjo, L., Akester, M (2017). Current State of Goods, Services and Governance of the Humboldt Current Large Marine Ecosystem in the Context of Climate Change. Environmental Development, 22, 175-190.

Hamukuaya, H., Atwood, C., Willemse, N (2015). Transition to Ecosystem Based Governance of the Benguela Current Large Marine Ecosystem. Environmental Development, 17, 310-321.

HCLME Strategic Action Programme (2016). Available at: https://iwlearn.net/documents/2327

HCLME Transzonal Ecosystem-Based Diagnostic Analysis (2015). Available at: https://iwlearn.net/documents/26707

IAEA (2013) (a). Chad, Egypt, Libya and Sudan Agree on Framework for Joint Management of the Nubain Sandstone Aquifer System.
Available at:
https://www.iaea.org/technicalcooperation/Regions/Africa/News/Archive/09202013_Nubian_Aquifer_GC57.html

IAEA (2011). Nubian Sandstone Aquifer System. IAEA Water Resources Programme, Vienna.
Available at
http://www-naweb.iaea.org/napc/ih/documents/factsheetsPosters/Nubian%20-%20Transboundary%20Aquifers%20and%20Rivers%20Basins.pdf

IAEA (2010). Regional Shared Aquifer Diagnostic for the Nubian Sandstone Aquifer System, Vienna.

IAEA (2013) (b). The Nubian Sandstone Aquifer System Project: Mapping the World's Largest Known Fossil Aquifer. IAEA Division for Africa, Vienna.

IMO Globallast Monograph Series (accessed July 2018).
Available at
http://www.imo.org/en/OurWork/Environment/MajorProjects/Pages/GloBallast-Publications.aspx

NOAA website (accessed July 2018). Ecosystem-Based Management. Available at: https://ecosystems.noaa.gov/EBM101/WhatisEcosystem-BasedManagement.aspx

NSAS Regional Strategic Action Programme for the Nubian Aquifer System (2013).
Available at
https://www.iaea.org/sites/default/files/sap180913.pdf

Pacific Islands Forum Fisheries Agency (FFA) website (accessed July 2018):
https://www.ffa.int/

PEMSEA (2016). How Does PEMSEA Support the UN Sustainable Development Goals. Poster presented at Global Environment Facility Biennial International Waters Conference, Sri Lanka, May 2016.

PEMSEA (2007). PEMSEA: Partnerships in Environmental Management for the Seas of East Asia (1994-2010): A Regional Mechanism Facilitating Sustainable Environmental Benefits in River Basins, Coasts, Islands and Seas.

PEMSEA (2013). Perspectives on Building a Regional Mechanism for Coastal and Ocean Governance in the Seas of East Asia. PEMSEA, Quezon City, Philippines.

PEMSEA (2017). Solutions for Sustainable Seas Brochure. PEMSEA, Quezon City, Philippines.

PEMSEA, (2011). Sustainable Development Strategy for the Seas of East Asia: Regional Implementation of the World Summit on Sustainable Development Requirements for the Coasts and Oceans. PEMSEA, Quezon City, Philippines.

State Unitary Enterprise "Khojagali Manziliyu Kommunali (2011). The Status of Potable Water Supply and

Sanitation Sector in the Republic of Tajikistan.
Available at
http://www.tajwss.tj/new/images/state_of_affairs_eng.pdf

Stephan, R., (2013). Adoption of Regional Strategic Action Plan on the Nubian Sandstone Aquifer. International Water Law Project Blog. (Accessed July 2018).
Available at
https://www.internationalwaterlaw.org/blog/2013/10/20/adoption-of-regional-strategic-action-plan-on-the-nubian-sandstone-aquifer/

Sustainable Development Strategy for the Seas of East Asia (2011).
Available at
http://pemsea.org/publications/reports/sustainable-development-strategy-seas-east-asia-sds-sea-2015

Tajikistan GoAL WaSH Project (2016). Press Release. On file with author.

UNDP (2013). Angola, Namibia, and South Africa Sign World's First Large Marine Ecosystem Legal Framework.
Available at
http://www.undp.org/content/undp/en/home/presscenter/articles/2013/04/30/world-s-first-large-marine-ecosystem-legal-framework-signed-by-angola-namibia-and-south-africa.html

UNDP (2014). A Pacific Model of Cooperation for Sustaining Species, Livelihoods and a Global Industry Can be Replicated in Other Parts of the World, says UNDP. June 2014.
Available at
http://www.undp.org/content/undp/en/home/presscenter/pressreleases/2014/06/24/a-pacific-model-of-cooperation-for-sustaining-species-livelihoods-and-a-global-industry-can-be-replicated-in-other-parts-of-the-world-says-undp.html

UNDP (2012) (a). Catalyzing Ocean Finance (Volume I) Transforming Markets to Restore and Protect the Global Ocean. United Nations Development Programme and the Global Environment Facility. September 2012.
Available at
http://www.undp.org/content/undp/en/home/librarypage/environment-energy/water_governance/ocean_and_coastalareagovernance/catalysing-ocean-finance.html.

UNDP (2012) (b). Catalyzing Ocean Finance (Volume II) Methodologies and Case Studies. United Nations Development Programme and the Global Environment Facility. September 2012.
Available at
http://www.undp.org/content/undp/en/home/librarypage/environment-energy/water_governance/ocean_and_coastalareagovernance/catalysing-ocean-finance.html.

UNDP (2018). Exposure Story: The Life Aquatic: Small Islands in the Atlantic & Indian Oceans Together to Fight Tough Water Challenges. UNDP Ecosystem and Biodiversity.
Available at
https://www.thegef.org/news/life-aquatic-small-islands-atlantic-indian-oceans-working-together-fight-tough-water-challenges

UNDP (2006) (a). Human Development Report 2006. Beyond Scarcity: Power, Poverty and the Global Water Crisis. New York: United Nations Development Programme (UNDP). http://hdr.undp.org/en/content/human-development-report-2006.

UNDP (2010). Fast Facts: Human Rights-Based Approach and Water Governance. UNDP, New York.
Available at
http://www.undp.org/content/undp/en/home/librarypage/environment-energy/water_governance/sub-topic_human_rightsbasedapproaches/fast-facts-human-rights-based-approach-and-water-governance.html

UNDP (2012) (c). International Waters—Delivering Results. UNDP, New York. Available at: http://www.undp.org/content/undp/en/home/librarypage/environment-energy/water_governance/international-waters--delivering-results.html

UNDP (2016). International Waters—Delivering Results. UNDP, New York. Available at: http://www.undp.org/content/undp/en/home/librarypage/environment-energy/water_governance/International-Waters-Delivering-Results-2016.html

UNDP, Restoring the Danube River and Black Sea film, featuring Andrew Hudson, posted to YouTube 2012. Accessed July 2018. Available at: https://www.youtube.com/watch?v=GsUnlXBeHKU

UNDP (2017). Water & Ocean Governance: Delivering on the Sustainable Development Goals. UNDP. Available at: http://www.undp.org/content/undp/en/home/librarypage/environment-energy/water_governance/water-and-ocean-governance-brochure.html.

UN-Water (2006) (b). Water: a shared responsibility. The United Nations World Water Development Report 2. United Nations Educational, Scientific and Cultural Organization (UNESCO) and Berghahn Books. Available at: http://www.unesco.org/water/wwap/wwdr2/.

UNDP (DRAFT June-2018). The Water & Ocean Governance Programme Contribution to Sustainable Development and the UNDP Strategic Plan 2018-2021. UNDP.

Water Governance Facility (2018). Balanced Rights-Based Approach to Water Supply Sustainability: Addressing the Vicious Cycle in Viability of Water Supply Service Provision in Tajikistan. SIWI, Stockholm.

World Bank (2017). The Potential of a Blue Economy: Increasing Long-Term Benefits of the Sustainable Use of Marine Resources for Small Island Developing States and Coastal Least Developed Countries. World Bank, Washington D.C.

ACRONYMS AND ABBREVIATIONS

ADS	Águas de Santiago (municipality)
AIO	Atlantic and Indian Oceans
BCC	Benguela Current Commission
BCLME	Benguela Current Large Marine Ecosystem
BSERP	Black Sea Ecosystem Recovery Project
C-SAP	Civil Society Strategic Action Programme
CCA	Causal Chain Analysis
CLME+	Caribbean and North Brazil Shelf Large Marine Ecosystems
CRFM	Caribbean Regional Fisheries Commission
CSO	Civil Society Organization
DRP	Danube Regional Project
DWFN	Distant Water Fishing Nation
EAS	East Asian Seas
EBM	Ecosystem-Based Management
EEZ	Exclusive Economic Zone
EU	European Union
FFA	Forum Fisheries Agency
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIA	Global Industry Alliance
GIS	Geographic Information System
GoAL WaSH	Governance, Advocacy and Leadership in Water, Sanitation and Hygiene
HCLME	Humboldt Current Large Marine Ecosystem
HRBA	Human Rights-Based Approach
IAEA	International Atomic Energy Agency
IBCC	Interim Benguela Current Commission
ICM	Integrated Coastal Management
ICPBS	International Commission for the Protection of the Black Sea
ICPDR	International Commission for the Protection of the Danube River
IFNR	Investment Fund for Nutrient Reduction
IFOP	Instituto de Fomento Pesquero
IMARPE	Instituto del Mar del Perú
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission (UNESCO)
IUU	Illegal, Unreported and Unregistered (fishing)
IW:LEARN	International Waters Learning Exchange and Resources Network
IWRM	Integrated Water Resources Management
JA	Joint Authority
JFA	Juan Fernandez Archipelago
KM	Kilometre
LME	Large Marine Ecosystem
LPC	Lead Partnering Country
MOU	Memorandum of Understanding
MPA	Marine Protected Area
MPP-EAS	Marine Pollution Prevention in the East Asian Seas (project)
MSC	Marine Stewardship Council
MSY	Maximum Sustainable Yield
NAP	National Action Plan
NARIS	Nubian Aquifer Regional Information System
NGO	Non-Governmental Organization
NSAS	Nubian Sandstone Aquifer System
OFMP	Ocean Fisheries Management Project
OHI	Ocean Health Index
OSPESCA	Central American Fisheries and Aquaculture Organization
PAC	Public Advisory Council
PBBS	Port Biological Baseline Survey
PEMSEA	Partnerships in Environmental Management for the Seas of East Asia
PNLC	PEMSEA Network of Learning Centers
PNLG	PEMSEA Network of Local Governments for Sustainable Development
RFB	Regional Fisheries Bodies
SADA	Shared Aquifer Diagnostic Analysis
SAP	Strategic Action Programme
SDG	Sustainable Development Goal
SDS-SEA	Sustainable Development Strategy for Seas of East Asia
SGP	Small Grants Programme
SIDS	Small Island Developing States
SIWI	Stockholm International Water Institute
TCC	Technical and Compliance Committee
TDA	Transboundary Diagnostic Analysis
TEST	Transfer of Environmentally Sound Technology
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
VDS	Vessel Day Scheme
VMS	Vessel Monitoring System
WCPFC	Western and Central Pacific Fisheries Commission
WCPO	Western and Central Pacific Ocean
WECAFC	(Food and Agricultural Organization)
WFD	Water Framework Directive
WGF	Water Governance Facility
WOGP	Water and Ocean Governance Programme
WWTP	Wastewater Treatment Plant

UNDP water and ocean vision: integrated, climate-resilient, sustainable and equitable management of water and ocean resources, and universal access to safe water supply and sanitation, through improved water and ocean governance.

Credit: Antoine Delepiere

KEY DONOR PARTNERS

gef

ADAPTATION FUND

Sweden
Sverige

NOAA

UNDP

Empowered lives.
Resilient nations.

United Nations
Development Programme (UNDP)
Bureau for Policy & Programme Support
304 East 45th Street
New York, NY 10017 USA

www.undp.org/water