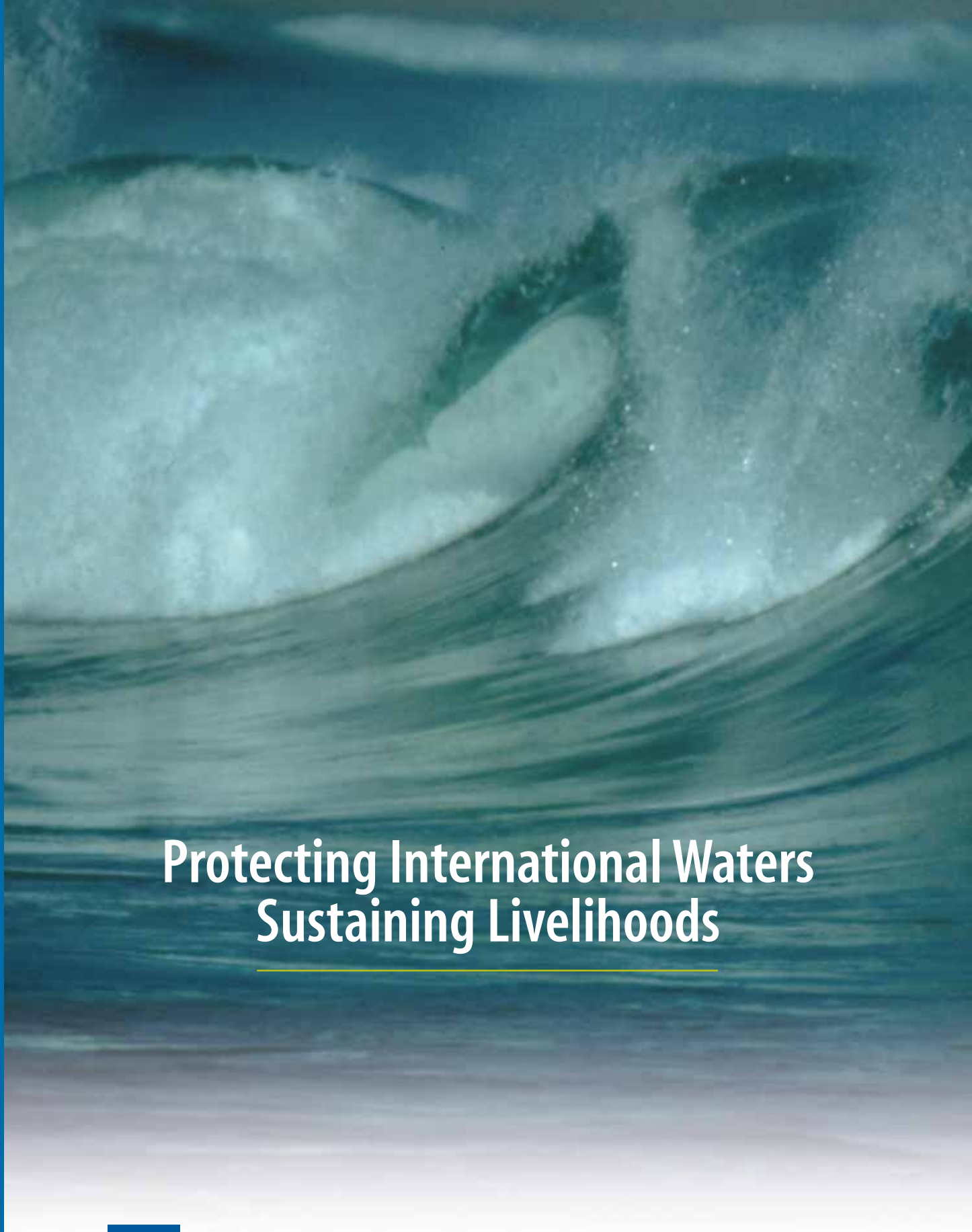
LESSONS FOR THE FUTURE

NOVEMBER 2004



Protecting International Waters Sustaining Livelihoods

United Nations Development Programme

Global Environment Facility

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United Nations Development Programme (UNDP)

UNDP is the UN's global development network, advocating for change and connecting countries to knowledge, experience and resources to help people build a better life. We are on the ground in 166 countries, working with them on their own solutions to global and national development challenges. As they develop local capacity, they draw on the people of UNDP and our wide range of partners.

World leaders have pledged to achieve the Millennium Development Goals, including the overarching goal of cutting poverty in half by 2015. UNDP's network links and coordinates global and national efforts to reach these Goals. Our focus is helping countries build and share solutions to the challenges of:

- Democratic Governance
- Poverty Reduction
- Crisis Prevention and Recovery
- Energy and Environment
- Information and Communications Technology
- HIV/AIDS

UNDP helps developing countries attract and use aid effectively. In all our activities, we encourage the protection of human rights and the empowerment of women.

Global Environment Facility (GEF)

The Global Environment Facility (GEF) was established to forge international cooperation and finance actions to address four critical threats to the global environment: biodiversity loss, climate change, degradation of international waters and ozone depletion. Launched in 1991 as an experimental facility, the GEF was restructured after the 1992 Earth Summit in Rio de Janeiro. The facility that emerged after restructuring was more strategic, effective, transparent and participatory. During its first decade, GEF allocated US$4.5 billion in grants, supplemented by more than $14.5 billion in additional financing, for more than 1,300 projects in 140 developing countries and transitional economies, as well as more than 5,000 projects in 73 countries that participate in the GEF Small Grants Programme, managed by UNDP. In 2002, donors pledged $3 billion to finance projects from 2002 to 2006.

In addition to its original mandate, the May 2003 GEF Council approved two new focal areas. The GEF now provides financial assistance for the mitigation and prevention of land degradation and persistent organic pollutants. GEF-funded projects are implemented through the following development agencies: UNDP, UNEP and the World Bank. The GEF also benefits from having the following executing agencies: African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, Food and Agricultural Organization, Inter-American Development Bank, International Fund for Agricultural Development and the United Nations Industrial Development Organization.

The UNDP-GEF Team

The Global Environment Facility team of the United Nations Development Programme (UNDP-GEF) is headquartered in New York. UNDP-GEF has six regional coordination units located in Malaysia, Slovakia, Lebanon, Mexico, Senegal and South Africa. Working with other international organizations, bilateral development agencies, national institutions, non-governmental organizations, private sector entities and academic institutions, the UNDP-GEF team supports the development of projects and oversees a mature portfolio of projects in all six GEF focal areas of biodiversity, climate change, international waters, land degradation, persistent organic pollutants and ozone depleting substance phase-out (the latter minimally). The cumulative UNDP-GEF portfolio is valued at $1.8 billion in core grants, with approximately $3 billion raised in additional co-financing. On behalf of the GEF partnership, UNDP-GEF also manages its two corporate programmes, the GEF Small Grants Programme and the GEF National Dialogue Initiative.

Protecting International Waters Sustaining Livelihoods

Highlights from the UNDP-GEF International Waters Portfolio

In the vastness of the planet's oceans and the pureness of its rivers lies the very basis of life itself. The oceans cover three-quarters of the earth's surface, contain ninety-seven per cent of its surface water, and on an annual basis absorb eight billion tonnes of carbon dioxide and produce fifty billion tonnes of living biomass.

On land, our freshwater systems are no less important. Transboundary river basins, lakes, wetlands, estuaries and desert oases blanket 45 per cent of the world's land surface and are home to nearly 60 per cent of the world's population. Ignoring political boundaries, river basins link communities and nations across every continent. The **Nile** alone passes through nine countries, from **Burundi** and the **United Republic of Tanzania** in the south to **Egypt** and **Sudan** in the north. In Europe, thirteen countries are touched by the **Danube's** flow as it winds its way to the Black Sea.

For decades, the international nature of these water systems promoted their decline. Untreated sewage or industrial discharges from one country polluted the drinking water of another and led to the demise of fisheries and coral reefs further downstream. The draining of wetlands and the overuse of water for agriculture left neighbouring nations with brackish, undrinkable waters – or none at all. And in nearly every country, the dependence on the oceans for international trade – 95 per cent of the global trade in goods is transported on container ships – has introduced economically debilitating species into ecosystems unprepared for such a disruption.

April 2004 Map Graphic by Kettler Ecological Design

Land image, Political Boundaries and Coastline Data derived from: Enviromental Systems Research Institute (ESRI), Redlands California

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the GEF or UNDP.

Watersheds derived from: Hydro 1k Database, USGS EROS Data Center

Global map of UNDP-GEF international waters project sites

Measuring the impact: UNDP-GEF's international waters portfolio

- 15 lake and river basins
- 11 large marine ecosystems
- 5 global projects
- $300 million portfolio
- $1 billion in co-financing mobilized
- Over 100 countries supported
- 12 Strategic Action Programmes adopted
- 5 regional or international legal agreements adopted

Working with the GEF on international waters

GEF international waters projects generally progress through a three-stage process:

First, a joint fact-finding process known as a Transboundary Diagnostic Analysis (TDA) is undertaken. The TDA uses the best available scientific information to examine the status of the water system, key threats, the root causes of its degradation and the types of remedial and preventive activities needed.

The second stage is the development of a Strategic Action Programme (SAP), a negotiated policy document that sets out the policy and regulatory actions, institutional reforms and investments needed to protect and rehabilitate the ecosystem.

The final stage involves the creation and support of various interventions, including projects, at the national and regional level to carry out the goals of the SAP.

Today, however, the international character of transboundary water systems is the key to their rehabilitation and sustainable use. Building upon three decades of work to protect regional seas, recent years have seen a surge in international agreements aimed at protecting the world's shared water resources, including:

- *The Global Programme of Action to Protect the Marine Environment from Land-Based Activities*;
- *The Code of Conduct for Responsible Fisheries*;
- *The Stockholm Convention on Persistent Organic Pollutants (POPs)*;
- *The International Convention for the Control and Management of Ships Ballast Water and Sediments*; and
- A number of transboundary river and lake basin conventions, such as the *Framework Convention for the Protection of the Marine Environment of the Caspian Sea* and the *Convention on the Sustainable Management of Lake Tanganyika.*

UNDP-GEF's efforts in protecting and restoring international waters closely reflect or directly support the objectives highlighted in these and other treaties, agreements and programmes.

Since 1992, UNDP-GEF has partnered with governments, inter-governmental organizations, other UN agencies, research centres, non-governmental organizations and local communities to support the creation and strengthening of multinational institutions to protect many of the world's shared large marine ecosystems and transboundary rivers and lakes. It has also worked to reduce global threats to aquatic ecosystems like invasive species, persistent organic pollutants and heavy metals.

Among the highlights discussed in this report are a new regional treaty protecting tuna stocks in the South Pacific, improved technologies for small-scale miners that eliminates the health and environmental dangers of mercury contamination, and increasing capacity in developing countries for effective ballast water management. The problems facing international waters remain daunting, but these achievements and others supported by UNDP-GEF are bringing the potential for truly sustainable use of our global water systems well into reach.

Large Marine Ecosystems

Scientists divide the planet's oceans into 64 large marine ecosystems, vast areas with linked food chains and distinct submarine topography, hydrography and productivity. Much of the ocean's biological production – including 95 per cent of the global fishery harvest – occurs in these huge swathes of water, while a majority of the world's population lives within close proximity of the coastal areas these systems border.

Oceans and coastal areas serve as both the source and conduit for trillions of dollars in economic activity and ecosystem services, from fishing to tourism. Each year, the oceans alone provide about 90 million metric tonnes of fish for human consumption. They are also a major sink for the carbon dioxide generated by the burning of fossil fuels and are, therefore, a critical factor in strategies to mitigate climate change due to greenhouse gas emissions.

Despite their remarkable size and resilience, the earth's oceans and coastal areas face a number of unprecedented threats to their integrity and sustainability. Chief among these are land and sea-based pollution, over-utilization of marine resources, loss of marine and coastal habitat, and the introduction of invasive aquatic species.

Nearly eighty per cent of the pollution that reaches the oceans is from land-based sources. Each year our cities, farms and industries discharge trillions of gallons of poorly treated or untreated sewage and other wastes into coastal waters. In recent years, dozens of oxygen-depleted 'dead zones' have emerged in the oceans, ranging from the Black Sea to the Gulf of Mexico. The ultimate fate of many persistent toxins such as the pesticide DDT and synthetic chemicals like PCBs is the oceans, where they bioaccumulate in the food chain, posing threats to the health and reproductive functions of humans, marine mammals and birds.

In addition, our growing demand for seafood, combined with a spectacular growth in fishing technology, has led to a tripling of fish harvests over the last fifty years. As a result, the majority of the world's major fisheries are now overfished, and some have collapsed entirely.

While the challenges to protecting and restoring the earth's marine and coastal areas may seem insurmountable, there is much that can and is being done. UNDP-GEF is currently supporting the sustainable management of twelve large marine ecosystems covering nearly 90 countries around the world. For example:

- In the Pacific Ocean, UNDP-GEF is building the capacity of 14 **Pacific Island** states to sustainably manage the region's highly migratory fish stocks, which represent nearly half the world's tuna supply.
- In Asia, UNDP-GEF has successfully demonstrated effective integrated coastal zone management approaches in the People's Republic of **China** and the **Philippines** and is promoting the replication of this effort throughout much of East Asia.
- In Africa, UNDP-GEF is supporting joint management of the Benguela and Guinea Current Large Marine Ecosystems, stretching from **Guinea-Bissau** to **South Africa**.
- Among the steppes of **Central** and **Eastern Europe**, UNDP-GEF is working with the World Bank, the United Nations Environment Programme (UNEP), the European Union and the 17 countries in the **Black Sea** basin in a partnership aimed at reversing the long-term degradation of the Black Sea ecosystem caused by excess nutrients and other contaminants.
- In the **Red Sea** region, UNDP-GEF is assisting seven countries that share this vital resource in establishing and managing a system of marine protected areas, while in **West Africa**, UNDP-GEF is supporting efforts to restore and protect the critical mangrove systems of the Niger delta.

85 per cent of the world's large marine ecosystems are shared by two or more countries.

Project profile

Countries: Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu

Co-implementing agency: none

Executing agency: South Pacific Regional Environment Programme (SPREP)

Co-financing partners: Governments, SPREP, Forum Fisheries Agency, Secretariat for the Pacific Community, UNDP

GEF financing: $12 million

Co-financing: $20.12 million

Total financing: $32.12 million

More information can be found at www.sprep.org/ws/iwp.

Promoting sustainability in the Pacific Small Island Developing States

The Western Pacific large marine ecosystem covers 38.5 million square kilometres and is home to 14 **Small Island Developing States** (SIDS). The region hosts the most extensive and biologically diverse reefs in the world, the deepest ocean trenches, deep-sea minerals, the world's largest tuna fishery, and an array of globally threatened species such as sea turtles, whales and dugongs.

Most of the region's islands are entirely coastal, with limited freshwater supplies but a rich variety of ecosystems including mangroves, seagrass beds, estuarine lagoons and coral reefs.

Recognizing their dependence on these fragile resources, in 1997 the Pacific SIDS, through the UNDP-GEF *Pacific SIDS International Waters Programme*, participated in a regional initiative to produce a Strategic Action Programme. This Action Programme was based on an analysis of the root causes for the increasing environmental threats they shared. Building on the success of that effort, in 2000 the Pacific SIDS, GEF and UNDP, working through regional agencies, began a 7-year project to address these root causes.

The project has two main components – oceanic fisheries management and integrated coastal and watershed management.

The oceanic fisheries management component focused on the region's tuna resources, generating considerable amounts of scientific and fishery information requested by the SIDS to use in negotiations with other regional leaders. The project had a major success in June 2004 with the ratification of the *Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific*, the first regional treaty based on the 1994 UN Fish Stocks Agreement.

The second component of the project, set to conclude in December 2006, is addressing the root causes underlying the unsustainable use of coastal resources, the ongoing degradation of freshwater resources and poor waste management. The project supports changes in institutions, policies and legislation at the municipal, state and national government levels and is investing considerable effort in communications efforts, particularly community education and awareness raising.

Small island nations of the Pacific: Threats and root causes

A 1997 Transboundary Diagnostic Analysis highlighted a range of threats to the region's ecosystems. Among these were:

- Unsustainable use of marine and coastal resources, including over-fishing of the region's tuna.
- Degradation of coastal and marine habitats, including coral reef destruction.
- Declining water quality.

Protecting southern Africa's vital marine resources

Sweeping along the coast of south-western Africa, the Benguela Current large marine ecosystem stretches from the Cape of Good Hope northwards into Angolan waters, encompassing the full extent of Namibia's marine environment. Like the Humboldt, California and Canary Current systems, water rising from the depths of the ocean – or upwelling – along the Benguela provides a renewed source of nutrients which has made it an important centre of marine biodiversity and global marine food production.

A study of the Benguela Current ecosystem, however, highlighted several looming transboundary problems (right). The main causes of these problems were related to poor legal frameworks, inadequate enforcement of existing regulations, a lack of reliable financing and support mechanisms and insufficient public involvement.

Working with ministers from **Angola**, **Namibia** and **South Africa**, in 2002 UNDP-GEF began a five-year, $15 million *Integrated Management of the Benguela Current Large Marine Ecosystem* project to resolve these management issues and address the unsustainable use of this large marine ecosystem. The three countries prepared and endorsed a Strategic Action Programme outlining their commitments to implementing a range of management and sustainable use guidelines. This included joint surveys and assessments of shared fish stocks, standardized management approaches, adherence to established codes of conduct for fishing, monitoring of ecosystem health and algal blooms, and capacity development for key staff and institutions.

The cooperative relationship established by the project was critical to convincing the three countries to contribute more than $18 million towards implementation of the Strategic Action Programme, including staff, laboratories, equipment and the use of research vessels.

One of the main outputs of the Programme will be the formation of a new Benguela Current Commission, an institution that will deal with conflict resolution, transboundary marine resource management, and regulatory and environmental protection issues in the Benguela Current large marine ecosystem. The Commission will draw on inputs from several ministries in each partner country including foreign affairs, finance, fisheries, minerals and energy, environment and tourism.

Project profile

Countries:
Angola, Namibia, South Africa

Co-implementing agency:
None

Executing agency:
UN Office of Project Services

Co-financing partners: Governments, DANCED, BENEFIT, SADC, Private Sector

GEF financing: $15.46 million

Co-financing: $23.45 million

Total financing: $38.91 million

Threats to the Benguela Current Large Marine Ecosystem

- Decline in commercial fish stocks;
- Inadequate capacity within countries to assess ecosystem health, status, and yield;
- Deteriorating water quality;
- Habitat destruction and alteration, leading to declining biodiversity and ecosystem integrity; and
- Harmful algal blooms.

For more information on this project, visit www.bclme.org.

Project profile

Countries: Djibouti, Egypt, Jordan, Saudi Arabia, Northern Somali Coast, Sudan, Yemen

Co-implementing agencies: World Bank, UNEP

Executing agencies: Programme for the Environment of the Red Sea and Gulf of Aden (PERSGA), UN Office of Project Services

Co-financing partners: Governments, PERSGA, UNDP, Islamic Development Bank

GEF financing: $19 million

Co-financing: $17.61 million

Total financing: $36.61 million

For more information, visit: http://www.persga.org/

Preserving the integrity of the Red Sea and Gulf of Aden

The clear, tropical waters of the Red Sea and Gulf of Aden support an impressive array of marine and coastal habitats and species. Set within the convergence of three major biogeographic zones, the region includes vibrant coral reefs, extensive mangroves, and rich seagrass beds. The Socotra Island Group, with the global significance of its species endemism – species found only there – and island biodiversity, is part of this area.

In comparison with other semi-enclosed seas, the Red Sea and Gulf of Aden region is relatively pristine from an ecological perspective. However, critical issues pose threats to the region's ecology. These include: maritime pollution caused by international shipping; unregulated exploitation of shared fish stocks; wide-spread habitat destruction caused by uncontrolled coastal zone development for cities and tourism; and the emerging challenges of climate change.

From 1995-1998, UNDP-GEF, in cooperation with the World Bank and UNEP, assisted the countries of the Red Sea and Gulf of Aden in developing a Strategic Action Programme to address these environmental threats to the shared resources of the Red Sea and Gulf of Aden. Since then, through the *Red Sea and Gulf of Aden Strategic Action Programme*, the institutions and networks created by the project have achieved considerable success. Based in Jeddah, the Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA) has brought together ministries, scientists and civil society leaders from **Djibouti**, **Egypt**, **Jordan**, **Saudi Arabia**, **Sudan**, and **Yemen**. Among the project's many accomplishments are:

- A network of marine protected areas has been established through the enhancement of existing protected areas and the creation of new ones, including Dongonab Bay and Mukawwar Island in **Sudan**, Belhaf-Bir Ali in **Yemen** and Îles des Sept Frères in **Djibouti**.
- A new regional protocol on biodiversity and protected areas has been drafted and is awaiting final approval.
- New hydrographic surveys to reduce the environmental risks from shipping in the southern Red Sea have been undertaken.
- A strong partnership with the International Maritime Organization that has resulted in a series of training workshops on oil spill contingency planning and accidents and emergency procedures.
- The establishment of new data collection centres to lead efforts at reducing the pressure on over-exploited shark stocks. A preliminary analysis of the ornamental fish trade has also been conducted and management guidelines prepared.

Throughout the region a core of newly trained scientists have carried out baseline environmental surveys on the main habitats and species – mangroves, coral reefs, turtles and seabirds – and species-specific action plans have been developed.

Finally, the project helped develop a series of 'model' integrated coastal zone management experiences for use at different scales, including a city-level version for Aden and a national coastal-scale version for Djibouti and Sudan.

Transboundary Lakes and River Basins

Globally, over a billion people do not have access to safe water supplies. Nearly three billion lack access to adequate sanitation and as many as 10 million people, many of them children, die each year due to water-borne diseases and inadequate sanitation. Rehabilitating our freshwater ecosystems is critical to reversing these disturbing trends.

Freshwater ecosystems include lakes, river basins, estuaries, wetlands, flood plains and oases. Their health and protection are vital. Wetlands and floodplains, for example, play a crucial role in removing nutrients and toxic chemicals from water and in regulating water flows. Further upstream, forested watersheds help reduce floods and soil erosion by preventing rapid and excessive run-off. Vast numbers of animal and plant species are found in freshwater ecosystems, many of them unique to their particular ecosystem.

Globally, there are 261 watersheds that cross the political boundaries of two or more countries. An estimated 145 countries have territory within one or more of these international basins while 19 basins – including the **Danube, Nile** and **Niger** – are shared by five or more countries. The patchwork of institutions and governmental structures that typically lie within these watersheds is insufficient to address the range of threats facing transboundary lakes and river basins.

Through a $130 million portfolio that includes 17 projects, UNDP-GEF is assisting over 70 countries which share 15 lake and river basins on four continents to better understand and effectively address the threats to these systems. This approach includes legal, policy and institutional reforms to address priority threats, support for capacity development, technical assistance and investments, and providing a forum for nations to discuss and resolve conflicting views in a publicly transparent manner.

UNDP-GEF is presently supporting integrated lake and river basin management in the Danube, Dnipro, Kura, Niger, Nile, Okavango, La Plata, Senegal and Tumen rivers. Lakes Chad, Manzala, Peipsi, Tanganyika, Titicaca, and the Caspian Sea also have active programmes. To date UNDP-GEF has supported the preparation and adoption of Strategic Action Programmes in four of these waterbodies and is presently providing assistance in this process to the other countries and waterbodies.

Globally, there are 261 watersheds that cross the political boundaries of two or more countries.

The GEF Small Grants Programme and international waters

Community and non-governmental organizations can also play a key role in protecting international river systems. In Central America, the Mopán River flows for more than 150 kilometres through **Guatemala** and **Belize** before emptying into the Belize River. Along the way it passes thousands of homes that rely on the river for their drinking water as well as the wetlands of Crooked Tree Wildlife Sanctuary, home to an array of rare animals such as tapirs and jabiru storks.

In 2001, the Small Grants Programme provided a Belizean non-governmental organization, Friends for Conservation and Development, with a $50,000 grant for the *Mopán River Protection Across Borders Through Outreach and Monitoring* project to: (a) monitor the Mopán's ecological status; and (b) educate riparian communities on the ecological importance of the river. At the time, looming threats to the river system included severely denuded stretches of riverbank, indiscriminate dumping of refuse, and untreated sewage.

The project helped persuade people in the Guatemalan town of Sidabenque to reduce soil erosion by planting trees and converting their riverfront into a park. Community clean-ups in the form of joint canoe trips with people from both countries were started to remove garbage from remote stretches of the river. In San José Succotz, Belize, the project organized a biweekly trash collection system where residents agreed to pay for garbage disposal. As a result, the town became the first in Belize to charge a fee for this service, and now serves as a model for other municipalities who do not yet have adequate systems for the responsible disposal of their solid waste.

The education component of the project eventually involved 15 communities along the river, representing 50,000 people. Exhibits, posters, and nearly 100 animated presentations in all the area's schools were undertaken featuring specially recorded songs and the project's mascot, 'Bambú the Iguana'.

Understanding the threats to transboundary lakes and river basins

Water quality

Like marine ecosystems, freshwater lakes and river basins are threatened by pollution from both point and non-point, or diffuse, sources. Point sources include selected industries, municipal wastewater plants, and agriculture; diffuse sources also include agriculture (pesticides, fertiliser, sediment), paved surfaces (oil and other contaminants) and atmospheric sources (power plants, vehicle emissions, etc.).

Water quantity

Globally, the number of acute disputes over water quantity issues in shared river basins has been growing as water supplies become increasingly strained. More efficient use of existing resources – particularly when it comes to irrigation – can pay valuable dividends in improving water security and preventing further conflict.

Species/habitat loss

River basins and wetlands are important centres of both terrestrial and aquatic biodiversity, from birds to fishes to invertebrates. Yet these biodiversity-rich systems are threatened by increasing urbanization, agricultural expansion, deforestation, over-harvesting, dredging and channelization, pollution, invasive species and ship traffic.

Erosion/siltation

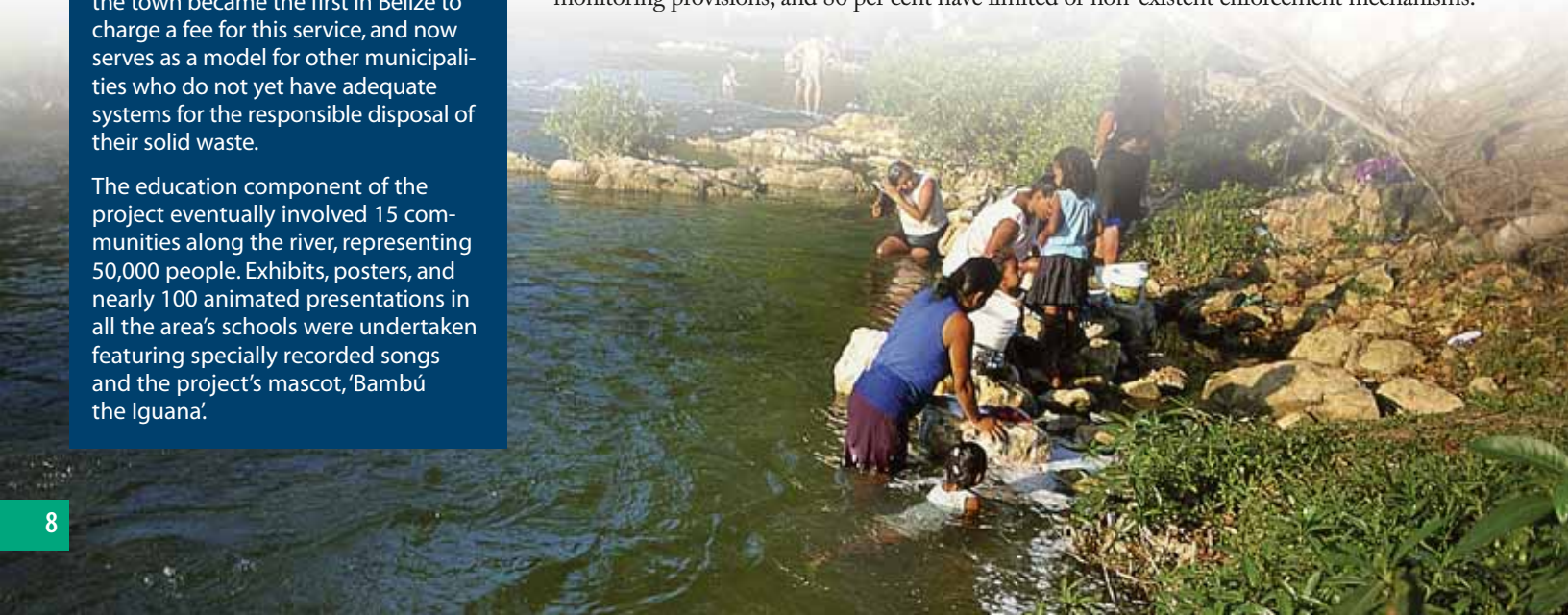
Excessive erosion and siltation of transboundary rivers is driven by deforestation, agricultural expansion, grazing of livestock and other factors. These processes can severely hamper the reproductive success of fish, invertebrates and other species and, by limiting light penetration, can reduce photosynthesis and primary production, the base of the aquatic food chain.

Invasive species

Globally, the economic costs of aquatic invasive species are estimated to run into the tens of billions of dollars per year. From the Great Lakes to the Rift Lakes, once an organism is introduced and proliferates, it is virtually impossible to eliminate, underscoring the need to take effective preventative measures.

Regional and international commitments

Since 1950, over 150 treaties have been negotiated and signed between countries that share transboundary river and lake basins. Unfortunately, over half of these treaties do not contain monitoring provisions, and 80 per cent have limited or non-existent enforcement mechanisms.



Restoring the Dnipro River basin

Watersheds seldom respect political boundaries. Without co-operation and co-ordination, conservation and pollution prevention undertaken by one country can be quickly undermined by actions on the other side of the border. That was the reality faced by the Dnipro River basin, located in a diverse economic region that sustains a heavily urbanized population of more than 32 million people in three countries.

Over the past eighty years the Dnipro River system has been progressively regulated and degraded with a large number of reservoirs, channels, conduits, ponds, dams and drainage projects. Every year about 1.5 million tonnes of mineral substances and up to 700,000 tonnes of soluble organic compounds enter the Dnipro River with surface runoff from drained land. Much of this pollution load is eventually carried to the Black Sea.

To address the short-term challenges facing the Dnipro basin, the **Russian Federation**, **Republic of Belarus**, and **Ukraine** joined with UNDP-GEF to scientifically assess the various threats to the Dnipro, identify their root causes, agree on priority actions, and begin building a multi-national management structure. The long-term goal of the Dnipro River basin project is the creation of an International Dnipro Commission that can allow the countries to jointly manage the river, co-ordinate pollution prevention activities, and serve as a forum for mediating conflicts over use of the basin.

The first tangible results of the Dnipro programme were the completion of a Transboundary Diagnostic Analysis and a Strategic Action Programme, currently undergoing a process of government review. These two results were achieved largely through the efforts of the three national project management committees and their respective working groups created specifically for this purpose.

On a basin-wide scale, a Dnipro regional council was created to include representatives of all Dnipro *oblasts*, relevant government ministries, the project implementation unit and representatives from civil society organizations. Each of these national and regional institutions carries specific responsibilities for research, monitoring and management activities in the Dnipro basin.

While these institutions were primarily developed for the purpose of implementing the UNDP-GEF *Dnipro Basin Programme*, their overall contribution was judged to be so effective that the three countries have committed themselves to financing their sustained existence after UNDP-GEF financing ends.

Project profile

Countries: Belarus, Russian Federation, Ukraine

Co-implementing agency: None

Executing agency: UN Office of Project Services

Co-financing partners: Governments, International Development Research Centre (IDRC)

GEF financing: $7.26 million

Co-financing: $7.60 million

Total financing: $14.86 million

More information is available at: http://www.dnipro-gef.net

Project profile

Country: Egypt

Co-implementing agencies: None

Executing agency: Government of Egypt

Co-financing partners: Government of Egypt, CIDA

GEF financing: $4.5 million

Co-financing: $0.39 million

Total financing: $4.89 million

Lake Manzala engineered wetlands

One of **Egypt's** most pressing environmental problems is the lack of reliable, clean freshwater. Much of the heavily polluted water flowing through the Nile Delta from farms, cities and industrial centres enters large coastal lakes such as Lake Manzala before pouring into the Mediterranean Sea. There, the wastewater has traditionally been left untreated, degrading the Lake and its once prolific fisheries, and sending pollution downstream into the Mediterranean.

These days, however, a $4.5 million UNDP-GEF project has helped Egypt with an ambitious and pioneering effort to clean and re-use those waters for productive purposes. Using a series of engineered wetlands, each day 25,000 cubic metres of water are pumped from the Bahr El Baqr canal – which leads into Lake Manzala – into a series of large ponds, where most of the toxic sediments in the water settle.

After the sediments settle, the water then flows into the specially designed wetlands, where plants and bacteria filter it gradually, removing additional pollutants. The entire process is chemical-free and can be undertaken for just one-tenth the cost of competing technologies.

Treatment of wastewater via engineered wetlands is a new low cost technology to the Middle East and the Lake Manzala Engineered Wetlands are the first of its type in Egypt. The success of the project has led national authorities to explore the re-use of treated water via engineered wetlands in irrigation, fish farming and decentralized wastewater treatment technology in remote areas.

The project is also negotiating with a fish research institute to explore the suitability of using treated water in breeding some fish species that have already vanished from the lake under pollution stress. Meanwhile, the project is keen on involving the local community in the operation and maintenance of the facility to increase awareness on the technology and reduce the risks of pollution. Eventually the Egyptian government plans to convert the facility into a centre of excellence for low-cost techniques for wastewater treatment after UNDP-GEF funding concludes.

Saving the Caspian Sea

For centuries, the deep waters of the Caspian Sea have been renowned for their fisheries and, not least, for the delicacy of Caspian caviar. But caviar is not the Sea's only bounty. As the world's largest inland water body, the Caspian is home to a large number of species that are found nowhere else on earth; in addition, up to 200 billion barrels of hydrocarbons lie underneath it's brackish waters.

Utilized sustainably, the Caspian's riches could benefit the entire region. Yet, with some 14 million people living in communities around the Caspian, and another 250 million in the five countries surrounding it, the Sea is under increasing stress. An invasive comb jelly has decimated the region's fisheries, key species such as the sturgeon and Caspian seal are in decline, and pollutants entering the Sea have no way to exit.

So far, no significant accumulations of petroleum hydrocarbons have been observed in the coastal waters, nor have PCBs been found at a concentration to pose risks to human or ecological health. Nevertheless, pollution hot spots, some acute, dot the sea. Moreover, the prospect of increasing hydrocarbon development means pollution concerns are likely to grow.

To help promote the sustainable development and management of the Caspian environment, the five Caspian Sea countries – **Azerbaijan,** the **Islamic Republic of Iran, Russian Federation, Kazakhstan,** and **Turkmenistan** – joined with UNDP-GEF, UNEP, the World Bank and the European Union to establish the Caspian Environment Programme. A major component of the Programme is the GEF *Addressing Transboundary Environmental Issues in the Caspian Environment Programme* initiative.

From 1998-2002, the Programme:

- Fostered a constructive environmental dialogue among all the regional partners and helped create an effective regional management structure, including approval of the *Caspian Framework Convention.* This was particularly important because management of the Caspian's resources was divided among five nations following the dissolution of the Soviet Union.
- Helped countries identify major transboundary and regional environmental threats, diagnose their root causes and recommend feasible measures to address them. This included the formulation and endorsement of National Caspian Action Plans for each country, and regional approval of a Strategic Action Programme;
- Assisted the region to mobilize financial resources by identifying a series of priority investment projects that could benefit from matching grants. Over $2 million in matching grants have since been awarded.

The success of the initial phase has led to a commitment to fully implement the Strategic Action Programme in the priority areas of *biodiversity decline, invasive species, fisheries, coastal development* and *pollution monitoring and abatement*. This second phase will continue supporting institutional capacity development efforts, strengthen regional management efforts and help achieve tangible environmental impacts through matching grants. Leading off this effort, a new Programme Coordination Unit has been established in Tehran and a Caspian Investment Forum, to be held in November 2004, will help raise additional resources for projects agreed upon in the Strategic Action Programme.

Project profile

Countries: Azerbaijan, Islamic Republic of Iran, Kazakhstan, Russian Federation, Turkmenistan

Co-implementing agencies: World Bank, UNEP

Executing agency: UN Office of Project Services

Co-financing partners: Governments, European Union – TACIS, UNEP, UNDP, World Bank, FAO, EBRD, Private Sector

GEF financing: $14.37 million

Co-financing: $42.47 million

Total financing: $56.84 million

For more information, visit: http://www.caspianenvironment.org.

The Caspian contains 44 per cent of all inland waters on earth and descends to a depth of more than 1,000 metres.

Project profile

Countries: Bulgaria, Croatia, Hungary, Romania, Slovakia

Co-implementing agency: None

Executing agency: United Nations Industrial Development Organization (UNIDO)

Co-financing partners: UNIDO, governments

GEF financing: $0.99 million

Co-financing: $2.20 million

Total financing: $3.19 million

Promoting cleaner industry in the Danube River basin

The Danube River basin stretches across the heartland of central Europe, passing 13 countries before it finally discharges into the Black Sea through a delta that includes the second largest natural wetland in Europe.

With support from UNDP-GEF, a 1999 Transboundary Diagnostic Analysis (TDA) identified several threats to water quality in the Danube basin, including high levels of nutrients, contamination by industrial pollutants, and high user demand for limited supplies. Pressures on the basin from urban centres, agriculture and industry are the immediate causes of much of this degradation.

Following the Diagnostic, teams of experts identified 130 major manufacturing "hot spots" of pollution. This led, in April 2001, to the *Transfer of Environmentally Sound Technology (TEST) in the Danube River Basin* initiative with UNDP-GEF and the United Nations Industrial Development Organization (UNIDO) in five countries: **Bulgaria**, **Croatia**, **Hungary**, **Romania** and **Slovakia**.

The main objective of the Danube – TEST effort is to work with industrial interests to promote cleaner production processes. This includes facilitating access to clean technology, better environmental management, and the adoption of sustainable business strategies.

Through the TEST initiative, 17 hot spots of industrial pollution from the chemical, food, machinery, textile, and pulp and paper industries were targeted with the goal of bringing them into compliance with the environmental norms of the *Danube River Protection Convention* and the European Union. At the same time, the project had to take into account the needs of the businesses to remain competitive and the importance of addressing the social consequences of major technology upgrades.

To date, the benefits of this approach have been significant in reducing consumption of natural resources (including fresh water and energy), wastewater and pollution discharges, and waste generation and air emissions. At the end of 2003, there was a total reduction in wastewater discharges of 4.6 million cubic metres per year. It is expected that additional investments will lead to a total reduction of some 7.9 million cubic metres of wastewater per year.

Besides these tangible economic and environmental benefits, other important results involved capacity building and awareness raising:

- More than 700 government and private sector representatives were trained in the TEST approach and its tools, and a TEST manual with sample case studies has been prepared for distribution.
- The 17 private enterprises involved in TEST implemented more than 230 cleaner production measures, an investment of nearly $2 million which will result in savings of roughly $1.3 million per year.
- An additional $47 million of investments in cleaner technologies and processes have been reviewed by the TEST project and approved for implementation.
- Several project partners created environment departments for the first time and, by December 2003, 4 of the 17 enterprises obtained ISO 14001 certification, an internationally recognized standard of environmental excellence.

Global Waters Issues

Not all transboundary waters problems can be solved on a regional basis – some threats are truly global in scope. The three main ones involve aquatic invasive species, persistent organic pollutants and certain heavy metals.

Invasive species

Each year, nearly ten billion tonnes of ballast water is carried around the world by ships; over 7,000 species of microbes, plants and animals are carried in ship ballast water every *day*. This is by far the most important vector for the transfer of both marine and freshwater invasive species which, lacking natural predators, can quickly overwhelm local ecosystems. Some of the most notorious examples include the zebra mussel in North America and the comb jelly in the Black Sea, which contributed to the collapse of the Black Sea's fisheries and now threatens the Caspian Sea. Global economic impacts from invasive aquatic species, through disruption to fisheries, fouling of coastal industry and infrastructure and interference with human health, are estimated to exceed tens of billions of dollars per year.

Persistent organic pollutants

Over the past century, our ability to produce chemicals has outstripped our understanding of their impacts on our bodies and the environment we depend on. Nothing illustrates this better than the realization of the threat posed by persistent organic pollutants (POPs). POPs are man-made chemical compounds – often created to eliminate pests, improve crop yields, and produce plastics – which share three characteristics: persistence, bioaccumulation and the potential for long-range transport.

Taken together, these traits represent a serious threat to the marine and freshwater environment particularly. Very high levels of POPs in certain fish (e.g., swordfish, striped bass, tuna) and marine mammal species directly impact not only on ecosystems and animal species, but also the humans which depend on them. POPs have the capacity to disrupt endocrine systems, suppress immune system functions, and induce reproductive and developmental changes.

To address the global nature of this threat, more than 150 nations came together in 2001 to sign the ***Stockholm Convention on Persistent Organic Pollutants***. The initial focus of the convention is on the twelve most commonly recognized POPs. The GEF was selected as the interim financial mechanism to help developing and transition economies meet their obligations under the convention.

Following agreement on the Stockholm Convention, UNDP-GEF began developing a broad portfolio of projects aimed at assisting countries in meeting their obligations under the convention to phase-out and eliminate POPs use, reduce POPs emissions and exposure, and manage POPs wastes and stockpiles in an environmentally sound manner.

Heavy metals

A number of heavy metals, such as mercury, lead, arsenic and cadmium, are utilized and released by a wide variety of industries and other sources and can negatively affect human health and the environment. Like POPs, heavy metals often travel great distances and tend to bioaccumulate in higher level organisms. Extended exposure to elevated levels of these toxic metals can cause birth defects, neurological disorders and other health and environmental problems.

Dangerous build-up: Bioaccumulation

The threat posed by many toxic substances – particularly POPs – increases as they move up the food chain.

In the oceans, for instance, toxic chemicals released into rivers and oceans are absorbed by plankton and other microscopic organisms. The fish that then eat those smaller species over time accumulate much larger concentrations of those same toxics.

This process of bioaccumulation repeats itself at each level in the food chain. Marine mammals and large predatory fish, which have diets heavy in fish or plankton, often have the highest concentration of toxics, which can lead to very debilitating health effects – including birth defects – on the species themselves and on any humans that then eat them.

The three common characteristics of persistent organic pollutants

- **Persistence:** POPs have the ability to resist degradation for years or even centuries;
- **Bioaccumulatation:** POPs can accumulate in living tissues at levels much higher than those in the surrounding environment;
- **Potential for long-range transport:** POPs can travel on or through air and water or through the food chain. Highly elevated levels of POPs have been found in marine organisms in the Arctic region, thousands of kilometres from where they were originally used.

More information on the Stockholm Convention can be found at http://www.pops.int/.

Project profile

Countries: Brazil, China, India, Islamic Republic of Iran, South Africa, Ukraine

Co-implementing agency: None

Executing agency: International Maritime Organization (IMO)

Co-financing partners: Governments, IMO, other donors

GEF financing: $7.39 million

Co-financing: $3.59 million

Total financing: $10.98 million

GloBallast Project Sites:

- Dalian, China
- Khark Island, IR Iran
- Odessa, Ukraine
- Mumbai, India
- Saldanha, South Africa
- Sepetiba, Brazil

More information on this effort and the International Maritime Organization can be found at http://globallast.imo.org.

Stopping the ballast water stowaways

Aquatic invasive species are one of the single greatest threats to global marine biodiversity and ecosystems. They are also a significant threat to coastal economies and even public health. Invasives can be transferred to new environments in several ways, including through canal development, aquaculture, and on the hulls and in the ballast water of ships.

The economic and environmental impacts of invasive species are expected to grow with a three-fold increase in shipping activity predicted in the next decade. Developing countries in Africa, Asia and South America are at particular risk, as globalisation continues and new markets, ports and shipping routes are opened up in these areas.

In response to this aquatic threat, UNDP-GEF joined forces with the International Maritime Organization (IMO) in 2000 to implement the *Global Ballast Water Management Programme* (GloBallast), which provides institutional strengthening, capacity development and technical co-operation to developing countries to address the threat posed by aquatic invasives.

Major accomplishments of the GloBallast project to date include:

- **Establishment of national lead agencies and contacts for ballast water issues in all six countries.** Countries that had little or no infrastructure for addressing ballast water issues have now implemented regulatory reviews and policy reforms to put that infrastructure in place. Four out of the six countries in this pilot project are applying the GloBallast approach to other national ports using their own resources.
- **Development of the *International Convention for the Control and Management of Ships' Ballast Water and Sediments*, signed in February 2004**. GloBallast was directly responsible for raising awareness of and interest and participation in the convention negotiation process by developing countries.
- **Increasing awareness and expertise.** In addition to mounting a well-received global communication and awareness campaign, participants in the GloBallast project are now recognized as key international experts in this rapidly unfolding area. The project also established the first global information clearing house on ballast water and invasive aquatic species issues.
- **Establishment of best practices and standard methods for technical activities.** GloBallast developed versatile state-of-the-art methodologies and tools to counter the threat of invasives, including techniques for surveys and monitoring in port areas, ballast water risk assessments, and ballast water sampling. These have proven to be of value to both developed and developing countries.
- **Stimulating innovative, more effective ballast water solutions and technology transfer.** Prior to GloBallast, the global research and development effort was minimal and highly fragmented. GloBallast's research and development directory has proven successful in catalysing a more globally coordinated and focused research and development agenda as well as supporting knowledge, skills and technology transfer between developed and developing countries.
- **Increased stakeholder involvement and support.** The project has received broad support from a wide range of players such as the international shipping industry, environmental non-governmental organizations, the marine science academic community, and governments from both developing and developing countries.

Improving livelihoods through environmentally sound mining

Artisanal gold mining generates close to a third of the world's gold supplies. Globally, an estimated ten million people depend on artisanal mining for their livelihoods. However, the use of mercury by artisanal and small-scale mining operations to facilitate the extraction of gold carries a devastating impact on human health and the environment. In addition to causing severe neurological damage, high levels of mercury can also lead to major birth defects in humans and animals and have widespread impacts on ecosystems.

An estimated 1,000 tonnes of mercury are annually released into the environment from informal or small-scale gold mining activities. In response, UNDP-GEF and UNIDO began a global effort in 2002 to assess and monitor the extent of mercury pollution, develop and introduce cleaner gold extraction technologies and develop needed capacity and regulatory mechanisms. Six nations – **Brazil**, **Indonesia, Lao People's Democratic Republic, Sudan**, the **United Republic of Tanzania**, and **Zimbabwe** – agreed to participate.

In its first two years, the project has made significant progress in increasing knowledge and awareness about the perils of mercury use among miners, government institutions and the public at large.

- Participating countries have now formed Project Coordination Units staffed with technical advisors and experts with longstanding experience in geology, small-scale mining and mineral processing.
- Inception workshops have been held in all six countries with participants including representatives from government ministries, industry, small-scale mining associations, non-governmental organizations, and bilateral organizations.
- Standardized environmental and health surveys are either completed or underway and in each country a cadre of national public health experts has been trained in the assessment of clinical and neurological symptoms of mercury poisoning in mining communities.
- Reviews have been undertaken in all participating countries to assess the technological needs of miners as well as to discuss the threats posed by mercury pollution. Based on those results, designs for mineral processing equipment *not* requiring mercury and equipment for recovering mercury from tailings and amalgam have been developed and discussed with manufacturers of small-scale mining and processing equipment.

Initial results of the health surveys have been disturbingly similar across project sites. Symptoms of mercury intoxication, including severe neurological damage, are widespread. In the United Republic of Tanzania, up to 25 per cent of miners fell clearly into the category of mercury intoxication. At one project site in Brazil almost 50 per cent of miners showed an intentional tremor, which is a typical symptom for a mercury-induced damage of the central nervous system. Extremely high mercury concentrations were also detected in breast-milk samples from nursing mothers, a disturbing trend with long-term implications.

Looking ahead, the project will work on a country-by-country basis to provide legal advice to all participating governments requesting assistance in developing policies and legislation needed to address the hazards of mercury use in mining. Emphasis will be given to the development of policies that stress the social dimensions of small-scale gold mining, including the improvement of safety in respect to using and handling mercury.

Project profile

Countries: Brazil, Indonesia, Lao People's Democratic Republic, Sudan, Tanzania, Zimbabwe

Co-implementing agency: None

Executing agency: United Nations Industrial Development Organization (UNIDO)

Co-financing partners: Governments, UNIDO, UNDP

GEF financing: $7.12 million

Co-financing: $12.88 million

Total financing: $20 million

Global Mercury Project locations

Brazil: Creporizinho and São Chico, Para State, on the Tapajos River

Indonesia: Galangangan Mine, Central Kalimantan; and Talawan/Manado in Sulawesi.

Lao PDR: Luang Prabang, Mekong River.

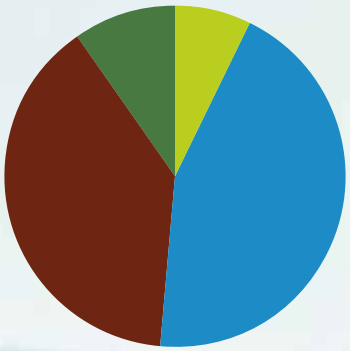
Sudan: Gugob, near Al Damazin, which drains to the Blue Nile

United Republic of Tanzania: Rwamagaza, drains to Lake Tanganyika

Zimbabwe: Chakari, which drains to the Zambezi River

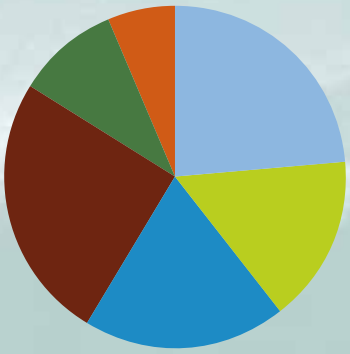
More information can be found at http://www.globalmercury.org.

UNDP-GEF allocation by aquatic ecosystem type (US$)



System Type	$millions
Small Island Developing States	21.811
Large Marine Ecosystems	132.946
Lake & River Basins	116.702
Global	29.362
	300.821

UNDP-GEF international waters portfolio by region (US$)



Region	$millions
Africa	71.361
Arab States	47.437
Asia & Pacific	58.212
Europe & CIS	75.733
Global	29.562
Latin America & Caribbean	18.514
Grand Total	300.821

Figures are historical – cumulative from July 1991 through June 2004

Other Current UNDP-GEF International Waters Projects and Partners

Large marine ecosystems

Yellow Sea Large Marine Ecosystem (UNOPS)
Black Sea Ecosystem Recovery Project (UNOPS, World Bank, UNEP) www.blacksea-environment.org
Partnerships for Environmental Management of the Seas of East Asia – PEMSEA (IMO, SIDA) www.pemsea.org
Guinea Current Large Marine Ecosystem (UNEP, UNIDO, NOAA, Norway, private sector) http://www.africaonline.co.ci/AfricaOnline/societes/goglme/goglme.html
Agulhas Current Large Marine Ecosystem – in preparation (UNOPS, UNEP, World Bank)
Caribbean Large Marine Ecosystem – in preparation (IOCARIBE)
Gulf of Mexico Large Marine Ecosystem – in preparation (UNIDO)
Humboldt Current Large Marine Ecosystem – in preparation (UNIDO)

Lakes and river basins

Danube Regional Project (UNOPS, International Commission for the Protection of the Danube River) www.icpdr.org/undp-drp/
Building Environmental Citizenship to Support Transboundary Pollution Reduction in the Danube: Pilot Project in Hungary and Slovenia (Regional Environment Centre, NYU, RFF) www.rec.org/REC/Programs/PublicParticipation/DanubeInformation/
Lake Chad Basin (World Bank, Lake Chad Basin Commission)
Lake Peipsi/Chudskoe Basin (Center for Transboundary Cooperation) www.peipsi.org/gef/
Lake Tanganyika (African Development Bank, EU, Finland, Norway, IUCN, UNOPS) www.ltbp.org/
Niger River Basin (World Bank, Niger Basin Authority)
Nile Basin Initiative (World Bank, UNOPS, Nile Secretariat) www.nileteap.org/
Okavango River Basin (FAO, Okavango Basin Commission)
Lake Titicaca (Binational Authority of Lake Titicaca) www.pnud.bo/biodiversidadtdps/
Rio de la Plata and Maritime Front (CARP, CTMFM) www.freplata.org
Senegal River Basin (Organisation pour la Mise en Valeur du Fleuve Sénégal (OMVS))
Tumen River Area (TRADP, UNOPS) www.tumennet.org/
Kura River Basin – in preparation (UNOPS, EU-TACIS, US-AID)
Nubian Aquifer – in preparation (International Atomic Energy Agency)

Global projects

SIDSNet (UN-DESA) www.sidsnet.org
Strengthening Global Capacity to Sustain Transboundary Waters: The International Waters Learning Exchange and Resource Network – IW:LEARN (World Bank, UNEP, UNOPS) www.iwlearn.net
Train-Sea-Coast (UN-DOALOS, UNOPS) www.un.org/Depts/los/tsc_new/TSCindex.htm
Global Support to Integrated Wetland, Biodiversity and River Basin Management (Convention on Wetlands, Global Environment Centre, Wetlands International, WRI)

Demonstration projects/other

Integrating Watershed and Coastal Area Management in the Caribbean Small Island Developing States (UNEP, Secretariat of Cartagena Convention, IADB) http://www.cep.unep.org/programmes/amep/GEF-IWCAM/GEF-IWCAM.htm
Demonstrations of Innovative Approaches to the Rehabilitation of Heavily Contaminated Bays in the Wider Caribbean (UNOPS)
Developing Renewable Groundwater Resources in The Eastern Desert of Egypt (Cairo University, Argonne National Laboratory)
Development and Implementation of Public-Private Partnerships in Environmental Investments (IMO)

GEF National Dialogue Initiative

The GEF National Dialogue Initiative, launched in 2004, is a joint undertaking of the GEF Secretariat, UNDP, UNEP and the World Bank. It is implemented by UNDP and carried out in close collaboration with UN Member States. Through a targeted, multi-stakeholder dialogue, the initiative aims to strengthen GEF assistance to participating countries by:

- Promoting in-depth understanding of the GEF's strategic directions, policies and procedures;
- Strengthening country coordination and ownership of GEF operations and information-sharing about GEF-funded projects;
- Mainstreaming GEF activities into national planning frameworks and encouraging better coordination at the national level of the GEF focus areas and international agreements, in response to country priorities.

National dialogues sponsored under the programme bring together representatives from governmental and non-governmental institutions, the scientific and academic communities, donor organizations, the private sector, the media, and the GEF Secretariat and its associated agencies. The initiative builds upon lessons from the GEF Country Dialogue Workshops Programme, during which 76 countries and over 5,000 stakeholders participated in 50 national and subregional consultations. For more information, please visit http://www.undp.org/gef/dialogue/index.htm.

GEF Small Grants Programme

Launched in 1992, the GEF Small Grants Programme supports activities of non-governmental and community-based organizations in 73 developing countries working in areas of GEF concern. The objective of the programme is to foster environment stewardship while helping people generate sustainable livelihoods. Grants provided by the programme average $20,000 per project (though they can reach a maximum limit of $50,000) and are channelled directly through community-based or non-governmental organizations. Decisions concerning the awarding of grants are decentralized, based on the directives of a voluntary National Steering Committee in each participating country. To date, more than 5,000 grants have been awarded worldwide, with many benefiting more than one community. Over 600 partner organizations now provide co-financing and other support to Small Grants Programme activities, including the United Nations Foundation, the European Commission, the governments of Denmark, the Netherlands, Switzerland and the United Kingdom. The programme is implemented by UNDP on behalf of the World Bank and UNEP, and executed by the United Nations Office for Project Services.

UNDP's Energy and Environment Group

The Energy and Environment Group is part of UNDP's Bureau of Development Policy. It focuses on the central aspects of sustainable development, especially the links between poverty and the environment. The Group offers six services lines, in areas relating to:

- Frameworks and strategies for sustainable development;
- Effective water governance;
- Access to sustainable energy services;
- Sustainable land management;
- Conservation and sustainable use of biodiversity;
- National and sectoral policy and planning to control emissions of ozone depleting substances and persistent organic pollutants.

The Energy and Environment Group also includes UNDP-GEF, the Montreal Protocol Unit and the Nairobi-based Drylands Development Centre. Energy and environment policy advisers are based at UNDP Headquarters in New York and eight regional locations to ensure the highest quality policy advice and services to client countries. In addition, every UNDP country office has at least one environmental focal point and a network of local practitioners that provide a forum for sharing knowledge.

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Inside photos from the following UNDP-GEF projects: Benguela Current, PEMSEA, Lake Manzala, Caspian, Danube TEST, GEF SGP Mopán, Dnipro River, GloBallast, Global Mercury, Red Sea/Gulf of Aden, Pacific SIDS; J. Uitto: 12

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