

UNEP GEF International Waters

A portfolio overview: From tools and methodologies to innovative initiatives and experience with integration and ridge to reef

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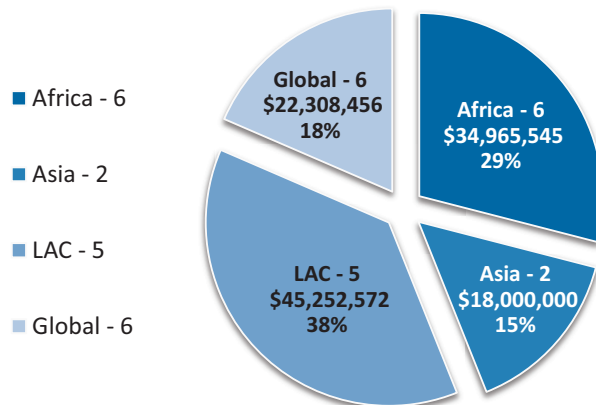
Addressing water issues effectively requires transboundary action because the connectedness of these systems goes beyond political boundaries. Globally, there are over 270 transboundary river basins and 200 transboundary aquifers. 39 countries have more than 90% of their territory within one or more transboundary river basins and 21 lie entirely within one or more of these watersheds. These watersheds cover about one-half of the earth's land surfaces and are home to about 40% of the world population. The majority of the world's Large Marine Ecosystems (LMEs), responsible for over 85% of the world's fish catch and provide a suite of ecosystem services such as essential spawning habitats, natural coastal protection, and carbon sequestration and storage, are shared by two or more countries.

GEF Role and our collaboration

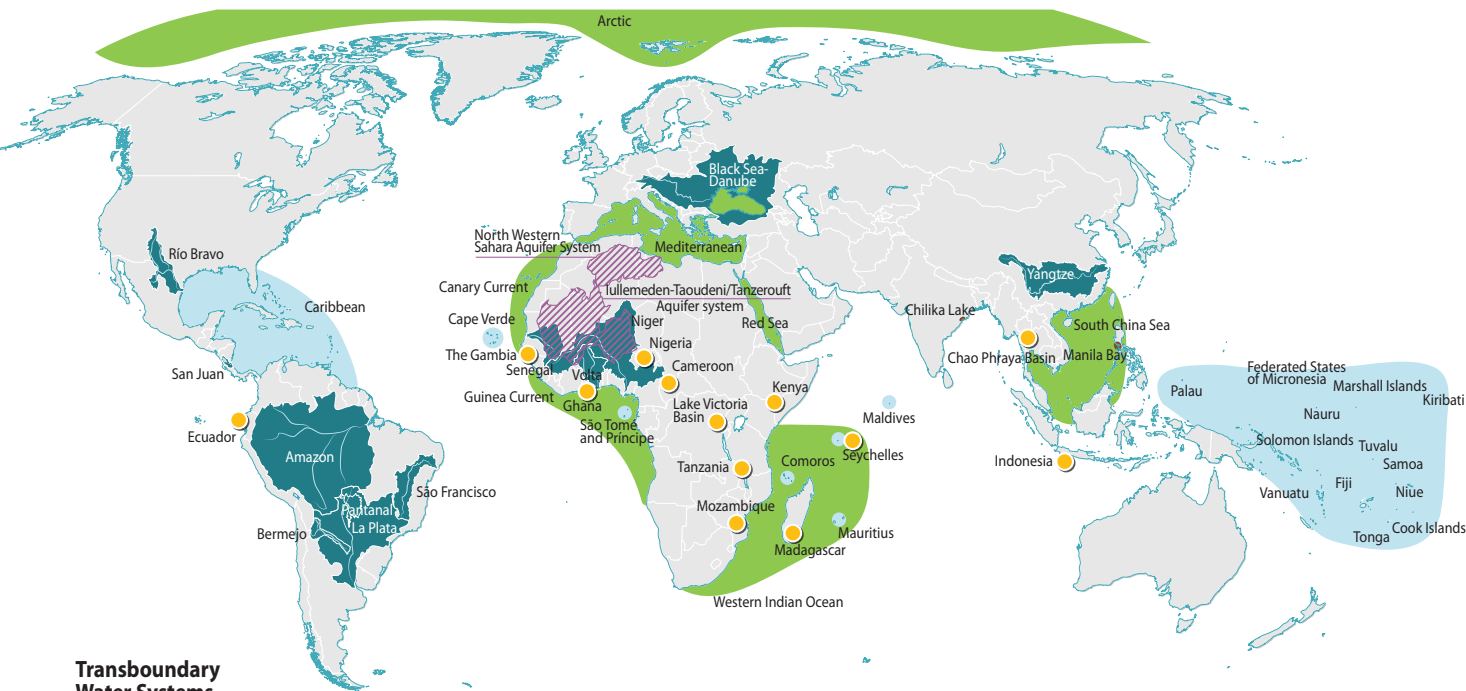
The GEF International Waters focal area was established to support countries to jointly manage their transboundary surface water basins, groundwater basins, and coastal and marine systems in order to effectively share ecosystem benefits. UNEP is one of the original three GEF implementing agencies and through its projects, programmes or other initiatives, underpinned by strong institutional and scientific networks and knowledge management platforms, has demonstrated best practice in managing most aspects of the water cycle in river basin, aquifer and coastal and marine ecosystems. UNEP's work in assessment, management and governance of such ecosystems forms a strong programmatic basis for collaborating with the GEF.

Over the last 20 years, UNEP has played a significant role in addressing global transboundary water issues. The International Waters (IW) team at UNEP DEPI, with GEF support, further strengthens this role by advancing an integrated approach to watershed and coastal area management, building on the principles of Integrated Water Resource Management (IWRM) and Integrated Coastal Zone Management (ICZM) in a Source 2 Sea/Ridge 2 Reef continuum. The team actively works with

key partners in many multi-country basins and Large Marine Ecosystems globally to catalyze regional and multi-country cooperation, building on the GPA and its regional presence through the Regional Seas Programme.



Total number of projects under implementation and development for the UNEP GEF Portfolio.



Transboundary Water Systems



Geographic coverage of UNEP GEF IW Projects.

Most IW projects adopt a two-step approach; (1) Trans-boundary Diagnostic Analysis (TDA), identifying priority transboundary environmental concerns, and their root causes, and a (2) Strategic Action Programme (SAP) to provide improved access to environmental data and information, and help increase governments' capacity to use such information in making decisions and planning action for sustainable human development through an array of actions. UNEP has also been instrumental in developing and testing policy tools and innovative approaches to sustainably manage environmental issues. IW has built a substantial portfolio of projects which is valued at more than \$120 million with active projects in Africa, Asia, Latin America and the Caribbean with a series of global methodology projects.

The following information is an overview of the project categories and doesn't holistically represent the entire cohort of the UNEP GEF projects.

Pillars

1. Tools and methodologies
2. Integrated Approaches
3. Innovative Initiatives
4. Ridge to Reef



Projects consisting of assessments, data collection and management, and targeted research fall under this category

Transboundary Water Assessment Programme (TWAP)



Now you only need a one stop shop!

The TWAP is the first global -scale indicator based assessment of five types of water systems (aquifers, lakes, rivers, large marine ecosystems and open ocean).

What does the TWAP offer?

- Five water-category specific comparative assessments covering:
 - 199 transboundary aquifers and groundwater systems in 43 small island developing states,
 - 206 transboundary lakes and reservoirs,
 - 286 transboundary river basins;
 - 66 large marine ecosystems, and
 - The open ocean, for a total of 758 international water systems.
- Quantitative indicator- based methodology for classifying water systems into five risk categories, from very high to very low risk
- A crosscutting analysis of the five water systems with a high level summary of patterns and trends.
- A Summary for Policy Makers per system.
- A central data portal with all supporting data and publications (www.geftwap.org)



Global Nutrient Challenge (GNC)



Sick of excess nutrient in your back yard?

The GNC project, addressing excess nutrients issues, provides a platform for governments and other stakeholders to utilize the following products to make comprehensive, effective and sustainable decisions addressing nutrient over-enrichment and oxygen depletion from land based pollution of coastal waters in Large Marine Ecosystems.

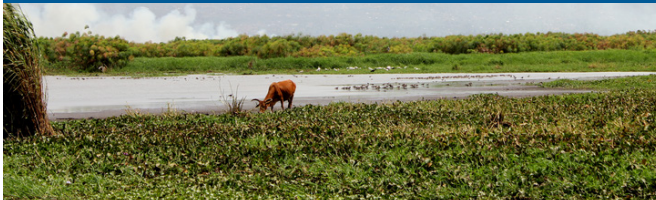
This project offers the following solutions

- Global database consisting of nutrient loading information from major global watersheds
- Policy and technical solutions Tool Box consisting of;
 - Inventory of nutrient reduction best practices
 - Synthesis of policy measures and regulations
 - Nutrient Budget calculation tool that will enable decision makers and field and advisory support professionals to evaluate the impacts of management practices on nutrient inflows to the environment.
- Publication with a series of key recommendations for action for Manila Bay
- Ecosystem Health Report Cards have been developed for Chilika Lake and Laguna de Bay

For more information, www.thenutrientchallenge.org



Flood and Droughts Decision Support System (DSS)



Do you have flood and drought issues and wonder how to manage them?

This project will guide you in the right direction with its development of a decision support system, consisting of;

1. Flood and drought management tools incorporating information from existing models, indicators and planning approaches.
2. Tools incorporate impacts of climate variability including climatic scenarios into planning across scales (IWRM, WSP, TDA/SAP).

This DSS will enable stakeholders to develop future planning scenarios that are robust, resilient and pragmatic.

For more information visit <http://fdmt.iwlearn.org/en>



Integrated Nitrogen Management System (INMS)



Want to know more about the nitrogen cycle?

Our "Towards INMS" project is the first ever attempt at managing reactive nitrogen holistically. It will include links between water quality, food security, biodiversity, greenhouse gases, air quality Integrated approach for nitrogen management. It will also evaluate the cost/benefit estimates of multiple externalities related to nitrogen, which will, for the first time, demonstrate the multi-focal benefits of a joined up approach.

For more information: www.inms.international



Methodology



Blue Forests



Did you know that your oceans produce accountable carbon?

This unique project aims to provide the first global-scale assessment of the values associated with blue forests (mangroves, seagrass meadows, saltwater marshes) in order to achieve improved ecosystem management. Some of the products to be developed in the Blue Forests project include:

1. Global Blue Forests Data Tool that provides spatial information on carbon storage and sequestration, and the valuation of ecosystem services
2. Six peer-reviewed scientific papers on carbon storage and sequestration and ecosystem services valuation
3. A Blue Forests Carbon Accounting and Ecosystem Services Methodologies Toolkit that synthesizes the current state of knowledge
4. Blue forests policy options report

For more information: www.gefblueforests.com



The Power of Integration

Integrating Water, Land and Ecosystems Management in the Caribbean SIDS (IWECO)



The array of environmental benefits that will be achieved from the multi focal area (International waters, biodiversity, land degradation and sustainable forest management) approach of IWECO will highlight the strength of managing water, land and ecosystem holistically. IWECO will provide national innovative solutions for water and wastewater management, land & watershed restoration & ecosystem resilience in a cohesive fashion. And develop solutions that give climate change resilience a key consideration. Therefore, this project aims at achieving its goal both in an integrated and innovative manner.

For more information visit www.cep.unep.org/gef-iweco



MedPartnership and Integration of climatic variability and change into national strategies to implement the ICZM Protocol in the Mediterranean project ("ClimVar & ICZM")



The integrated aspect of this project is highlighted through the Med Sea LME strategic partnership, which is a collective effort of leading environmental institutions and organizations together with countries sharing the Mediterranean Sea to address the main environmental challenges that Mediterranean marine and coastal ecosystems face.

This project was further strengthened by incorporating and promoting the use of Integrated Coastal Zone Management (ICZM) as an effective tool to deal with the impacts of climate variability and change in coastal zones, by mainstreaming them into the ICZM process.

For more information and an overview of key results please visit www.themedpartnership.org



Integrated and Sustainable Management of Transboundary Water Resources in the Amazon River Basin, considering Climate Variability and Climate Change



- This project diverted away from a traditional TDA/SAP and additionally, through an opinion polling framework, developed a shared Vision statement for the Amazon Basin to understand the common problems, priorities, needs and goals about the Integrated Management of Water Resources (IWRM)
- It fostered the joint management and conjunctive use of surface and groundwater in Amazonian urban centers
- And is working on integrating climate change problems into the natural resources management in a transboundary Basin

For more information on the other components and on the project, visit <http://otca.info/gef>



Reducing Risks to the Sustainable Management of the North Western Sahara Aquifer System (NWSAS)



The NWSAS project is unique because it's one of the few GEF projects that addresses groundwater management issues. It also gave farmers the opportunity to explore technological innovation options to enhance the optimization of water and the income of the water users. The project has successfully built up a large and unified database on the aquifer system, available to the three sovereign governments, which illustrated the need for intervention to maintain the vital water resource.

For more information visit <http://nwsas.iwlearn.org>



Innovative Initiatives



Sustainable Management of the Water Resources of the La Plata Basin with respect to the effects of climate variability and change



- Through a highly participatory process both at the national and regional levels, and building on a macro Transboundary Diagnostic Analysis (TDA) from the preparatory phase (PDF-B) which identified a total of eleven (11) critical transboundary issues (CTI), the Plata project built a robust TDA through a very unique and innovative process. It developed a causal chain analysis for each theme identified under the TDA in order to identify the technical, economic/managerial, political/legal/institutional and socio-cultural factors of each problem.
- Importantly the project ensured the incorporation of data and information on climate variability and change, and did an impact analysis for each CTI. The TDA formulation process was carried out with the active involvement of experts and officials from various government institutions. Nationally, the designated specialists formed National Project Units (UNP), led by a National Coordinator. At the regional level, the specialists were grouped according to the different themes analyzed in relation to the CTIs (water balance, land degradation, ecosystems, water quality, etc.), forming Thematic Groups (TGs).
- The results of this extensive process in all 11 CTIs were assembled and consolidated into 3 main reports (or thematic pillars): Water Resources, Environment, and Hydroclimate. The 3 main reports were further combined to form one consolidated Basin TDA. To help focus and prioritize the recommendations resulting from the TDA process, a vision/target exercise was carried out. As a result of this process, 47 recommendations and 113 actions lines were selected to form the SAP.

For more information on the other components and on the project, visit www.proyectoscic.org



Caribbean Regional Fund for Wastewater Management (CRew)



This project provides innovative sustainable financing solutions to the wastewater sector. The financing pilots established to date;

- National Wastewater Revolving Funds in Belize and Guyana, worth US\$5m and US\$3m respectively,
- Credit Enhancement Facility in Jamaica, worth US\$3m.

As a result of the innovation of this project, in 2015, a total of twelve wastewater treatment projects got underway in both the public and private sectors. The CRew also conducted resource valuation studies, where the costs and benefits of improved wastewater management were mapped. This type of study can assist countries by making stronger justification for wastewater investment and by helping to identify the most cost-effective management approaches. Economic Valuation enables the accounting for services which otherwise go unaccounted for in decision-making. It helps to highlight economic importance, as well as helps with the setting of fees, and in determining compensation for damages.

For more information on this and the project, visit www.gefcrew.org



Fish Refugia



In situations of high small-scale fishing pressure and declining fisheries resources, conventional fisheries management approaches in the South China Sea marine basin have not proved effective. The Fish Refugia approach mimicking the concept of natural refugia, and not simply a no-use area, is an innovative management approach whereby, spatially and geographically defined areas are established in which important species during critical stages of their life cycle (nursery areas, spawning areas, and migratory routes) are sustainably managed. It also promotes socio economic benefits and enhances the resilience of regional fish stocks to the effects of fishing. This approach enables as well cross-sectoral co-ordination between the fisheries and the environment sector and governments.



Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand



Amongst other achievements, the project compiled extensive data concerning national economic values of goods and services provided by coastal habitats with an intention of conducting a cost-benefit analysis of the costs of action versus no action in implementing the regional Strategic Action Programme. These efforts resulted in the development of a method that determines regional economic values that could be used in a cost benefit analysis of regional programmes or activities. The team also designed and tested a wholly unique mangrove eco-farming system, which has practically no negative impact on the mangrove habitat, whilst creating new jobs.

For more information visit www.unepscs.org



IWRM AIO Small Island Developing States (SIDS)



Designed to strengthen the commitment and capacity of the six participating countries to implement an integrated approach to the management of freshwater resources, with a long-term goal of enhancing their capacity to plan and manage their aquatic resources and ecosystems on a sustainable basis.

The project intends to accelerate progress on IWRM and Water Use Efficiency (WUE) plans and water supply and sanitation development goals for the protection and utilization of groundwater and surface water in the participating countries.

For more information visit www.aio-iwrm.org



IWRM, The Pacific Way



The Project was a remarkable initiative promoting the IWRM principles across the Pacific by improving water resource and wastewater management and increasing water use efficiency (WUE) in PICs in order to balance overuse and conflicting uses of scarce freshwater resources.

It also contributed to the development of a remarkable IWRM and WUE regional indicator frameworks and advanced national policy, legislative, and institutional water reform.

For more information visit www.pacific-iwrm.org



Ridge to Reef (SIDS)



Integrating Watershed and Coastal Area Management in Caribbean SIDS (IWCAM/IWECO)



The IWCAM project created an enabling environment for integrated watershed and coastal areas management in SIDS.

Amongst other things, it initiated reforestation, constructed wetland wastewater treatment system, and extensive public education programme, long-term reef monitoring program, introduced Rain Water Harvesting (RWH), promoted innovative technologies such as lombriculture and vermiculture, and a range of soil conservation measures to increase agricultural yield whilst reducing organic waste. It also worked with local communities to install moorings in a heavily used area to allow for sea grass recovery and worked with the governments in public/private sector partnership towards reducing pollution emitted by the industrial sector





More at <http://cep.unep.org/iwcam>



More information on the portfolio

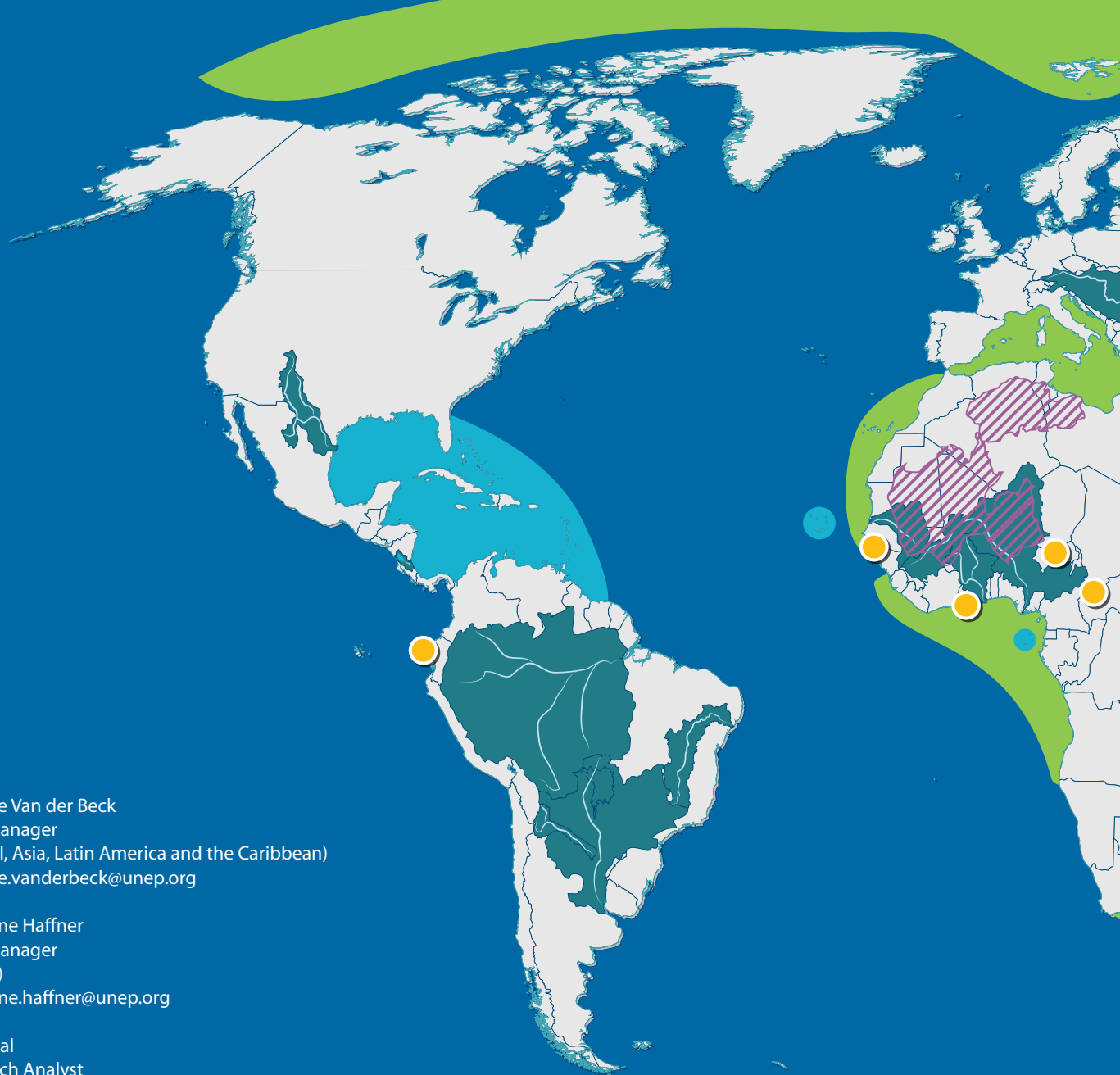
| | Project title | Website |
|---------------|--|--|
| <i>Africa</i> |  Atlantic and Indian Ocean SIDS | www.aio-iwrm.org |
| |  MED Partnership | www.themedpartnership.org |
| |  MED Climate Variability | http://nwsas.iwlearn.org |
| |  Reducing Risks to the Sustainable Management of the North Western Sahara Aquifer System (NWSAS) | www.unepscs.org |
| |  Canary Current Large Marine Ecosystem (CCLME) | www.canarycurrent.org/en |
| <i>Asia</i> |  Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand | www.unepscs.org |
| |  Fish Refugia | www.seafdec.org |
| |  Pacific SIDS | www.pacific-iwrm.org |
| <i>LAC</i> |  Integrated and Sustainable Management of Transboundary Water Resources in the Amazon River Basin, considering Climate Variability and Climate Change | http://otca.info/gef |
| |  Sustainable Management of the Water Resources of the La Plata Basin with respect to the effects of climate variability and change | www.proyectoscic.org |
| |  Integrating Water, Land and Ecosystems Management in the Caribbean SIDS (IWECO) | www.cep.unep.org/gef-iweco |
| |  Integrating Watershed and Coastal Area Management in Caribbean Small Island Developing States (IWCAM) | http://cep.unep.org/iwcam |
| |  Caribbean Regional Fund for Wastewater Management (CREW) | www.gefcrew.org |
| <i>Global</i> |  TWAP | www.geftwap.org |
| |  Blue Forest | www.gefblueforests.com |
| |  GNC (Nutrients) | www.thenutrientchallenge.org |
| |  INMS | www.inms.international |
| |  Flood and drought | http://fdmt.iwlearn.org/en |

Project Type

-  Methodology – Toolbox
-  Integrated Approaches
-  Innovative Initiatives
-  Ridge to Reef

Partners

- Abidjan Convention Secretariat
- Amazon Cooperation Treaty Organization (ACTO)
- Blue Ventures
- Caribbean Community (CARICOM)
- Centre for Ecology & Hydrology (CEH)
- Chilika Development Authority
- Conservation International (CI)
- Coordinating Body on the Seas of East Asia (COBSEA)
- Culture and Sustainable Development (ECSDE)
- Energy Research Centre of the Netherlands (ECN)
- European Commission (EC)
- Food and Agriculture Organization (FAO)
- Global Environment and Technology Foundation (GETF)
- Global Partnership on Nutrient Management (GPNM)
- Global Water Partnership-Mediterranean, Priority Actions Programme/Regional Activity Centre (PAP-RAC)
- GRID-Arendal
- Inter-American Development Bank (IDB)
- International Fund for Agricultural Development (IFAD)
- International Lake Environment Committee (ILEC)
- International Nitrogen Initiative (INI)
- International Union for Conservation of Nature (IUCN)
- Laguna De Bay Lake Development Authority
- Lake Victoria Basin Commission (LVBC)
- Mediterranean Action Plan (MEDPOL)
- Mediterranean Information Office for Environment, Culture and Sustainable Development
- Nairobi Convention Secretariat
- National Oceanic and Atmospheric Administration (NOAA)
- Observatoire du Sahel et Sahara (OSS)
- Organization of American States (OAS)
- Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)
- Plan Blue
- Regional Activity Centre for Sustainable Consumption and Production (SCP-RAC)
- South Pacific Applied Geoscience Commission (SOPAC)
- Southeast Asian Fisheries Development Center (SEAFDEC)
- Specially Protected Areas-Regional Activity Center
- The Abu Dhabi Global Environmental Data Initiative (AGEDI)
- The Caribbean Environment Programme (CEP)
- The Caribbean Public Health Agency (CARPHA)
- The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA)
- The Plata Commission (CIC)
- The Secretariat of the Cartagena Convention
- UNEP-DHI
- United Nations Educational, Scientific and Cultural Organization (UNESCO) - International Hydrological Programme (IHP)
- United Nations Educational, Scientific and Cultural Organization (UNESCO) - Intergovernmental Oceanographic Commission (IOC)
- United Nations Development Programme (UNDP)
- United Nations Industrial Development Organization (UNIDO)
- United Nations Office for Project Services (UNOPS)
- University of Maryland
- University of Philippines, Marine Science Institute
- University of Utrecht
- Volta Basin Authority (VBA)
- Washington State University
- World Resources Institute (WRI)
- World Wildlife Fund (WWF)



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