

International Waters Case Studies

BELIZE	Community Management of Sarstoon Temash Coastal Marine Resources
Location	Project activities target the coastal communities of Amatique Bay, a portion of the Gulf of Honduras, between Puerto Barrios in the Izabal Department, Guatemala, and Punta Gorda in the Toledo District, Belize.
Beneficiaries	Sarstoon Temash Institute for Indigenous Management (SATIIM)
Funding	SGP US\$ 40,000; Co-financing US\$ 113,418.
Date	Ongoing, started from June 2005.

Objectives To develop a bi-national community based mechanism to address the problem of over-fishing in the waters of Amatique Bay shared by Belize and Guatemala, off the Sarstoon Temash National Park.

Activities To achieve the bi-national approach to the project SATIIM is signing an agreement with a Guatemalan NGO, '*Fundación para el Ecodesarrollo y la Conservación*' (FUNDAECO). Communities participated in data collection including monitoring of fish stocks, sea grass beds, mangroves and basic water quality. The project organised community education and awareness workshops on sustainable fishing practises for resource users in both countries. Joint ranger trainings for SATIIM and FUNDAECO staff were provided. A one-day bi-national Sustainable Fishing Forum for resource users and fisheries authorities from both countries was organised.

Results The project will establish a bi-national community based advisory committee to oversee implementation of the sustainable use strategy. An environmental monitoring station will be constructed at the mouth of the Temash River.

Impacts The project will reduce over-fishing and unsustainable fishing practices in the waters of Amatique Bay. Community livelihood needs, will be addressed through the promotion of sustainable fishing and other grass-root efforts.

SGP Database link

<http://sgp.undp.org/index.cfm?Module=Projects&Page=ShowProject&ProjectID=8360>

BELIZE	Mopan River Protection Across Borders Through Outreach & Monitoring
Location	The border region of the Cayo District, Belize, and the Peten Department, Guatemala.
Beneficiaries	Friends for Conservation and Development (FCD)
Funding	SGP US\$ 48,217.50; Co-financing US\$ 49,200 (in cash US\$13,500; in kind US\$ 35,700).
Date	November 2001 to November 2003.

Objectives The project aimed to reduce pollution and promote the protection of the Mopan River by: initiating a water monitoring program; building a local constituency for river protection and enhancing stewardship through a community environmental awareness outreach campaign; and activating community conservation models. The Mopan River is a transboundary and major tributary of the Belize River watershed; it is shared by both Belize and Guatemala.

Activities FCD initiated a bi-national approach aimed at promoting protection of the Mopan River among Belizean and Guatemalan communities along the river. FCD signed an agreement with Naturaleza Para la Vida (NPV), a Guatemalan NGO, to identify needs, design strategies, develop possible interventions, and actively work with stakeholders for the protection and conservation of the Mopan River. Community residents made efforts to dispose solid waste such as plastics containers, to prevent these from entering the river. Some community participants have been introduced to basic water quality monitoring, basic GPS and GIS technology, and basic river mapping techniques. 100% of primary school children in Belize and Guatemala in the target area participated in the environmental education campaign promoting river protection and conservation.

Results Creation of 4 part-time jobs in Succotz Village, Belize: where a self-sustainable community solid waste disposal system has been established as a community conservation model. In Sidabenque, a Guatemalan Community, a retaining wall to control erosion was built and a small community riverside park was created. A weekly one-hour radio show has been initiated in Peten, Guatemala named ‘Voz Ecologica del Mopan’ or ‘Ecological Voice of the Mopan’ River.

Impacts The target communities in Guatemala now have a better understanding of environmental/health issues such as deforestation, over-fishing, unsustainable agricultural practices, and waterborne diseases. Community members in Belize and Guatemala are aware that the river is a shared resource, which should be protected and conserved. End of project evaluation has indicated that there has been a marked reduction in the amount of visible pollution in the river.

SGP Database link –
<http://sgp.undp.org/index.cfm?Module=Projects&Page=ShowProject&ProjectID=4931>

JORDAN	Upgrading Glass Boat Sector in Aqaba Gulf Project
Location	Aqaba Gulf- (Red Sea) - Jordan
Beneficiaries	The Royal Marine Conservation Society of Jordan (JREDS) in cooperation with Glass Boaters Association (local NGO)
Funding	SGP US\$ 40,254; Co-financing US\$ 119,940 (in cash US\$ 105,950; in kind US\$ 13,990).
Date	November 2002 to May 2004.

Objectives To safeguard the local marine environment of the Aqaba Gulf, an area which encompasses the world's northern most coral reefs in a semi-enclosed water body, is habitat to several endemic species of global importance.

Activities The glass-boaters' representative legal entity (Glass Boater Association) was re-established. Socio-economic situation of the glass boaters community was addressed in order to sustain livelihoods. Contacts between the Glass Boater Association and the Aqaba Special Economic Zone Authority / Aqaba Marine Park (ASEZA/AMP) were initiated. Loans were provided to glass boaters for the repair and maintenance of their boats.

Results Special glass boat '*documentation*' has been adopted and approved by the Council of Ministers and announcements have been issued in the official gazette stating that boats, which do not conform, to the specified criteria cannot gain the license required. Safety measures including life jackets and first aid kits were introduced and have become obligatory. Demand on glass boat cruises was seen to increase over the period of the project.

Impacts The project helped to achieve better awareness of the importance of the reef system in the Gulf, maintained to reduce pollution and oil spillage from glass boats. The deteriorating livelihood and economic status of the glass boaters community was reversed through the repair and maintenance of glass-boats and the organization and establishing of a legal structure for glass-boat regulation. The income of glass boat owners and operators has increased.

SGP Database link –

<http://sgp.undp.org/index.cfm?Module=Projects&Page=ShowProject&ProjectID=5889>

KENYA Rehabilitation of Lake Jipe Ecosystem: Protection and Conservation of Njoro Springs

Location Taita-Taveta District, Coast Province

Beneficiaries Communities adjacent to Lake Jipe / River Lumi ecosystem composed of: farmers associations; womens' self-help groups; youth groups; mens' self-help groups; and fishermen.

Funding SGP US\$ 33,610;
Co-financing US\$ 177,290 (in cash US\$ 166,000; in kind US\$ 11,290).

Date Ongoing, started from October 2004.

Objectives To increase and restore the natural water flow, and to conserve biodiversity of the lake Jipe ecosystem.

Activities Construction of office, store and toilet buildings and rehabilitation of the existing dyke in addition to the construction of a 300m long dyke to protect the spring; and the erection of a perimeter fence around the catchment. Old canals were desilted; current diversions that short-circuit lake Jipe were blocked; banks of river Lumi and building supportive dams were stabilized; dams and water pans were checked; trees were planted; agro-forestry was introduced; and proper irrigation, farming and fishing methods were promoted. Furthermore, development and construction of modern beehives began.

Results Mainly through digging out river Lumi manually, substantial water is flowing back into lake Jipe and water levels have increased drastically. Njoro springs were restored. Community governance and advocacy were promoted.

Impacts There is a significant rise in the fish population, and soon community members will be able to return to fishing as an activity to promote food security and provide an income. The project will comprehensively restore the ecosystem of Lake Jipe, which is home to an endemic fish species (*Oreochromis jipe*) and a resting ground for migratory waders. In addition, the community will benefit from fish recovery in the lake, managed tapping of water for farmlands; reduction of sedimentation, increased environmental awareness, and reduced poverty in the area through livelihood development.

SGP Database link –

<http://sgp.undp.org/index.cfm?Module=Projects&Page=ShowProject&ProjectID=7723>

MALI	Biological Protection of the Senegal River banks
Location	Samé-agricole, Somankidi-coura, and Tambonkané villages (Kayes Region).
Beneficiaries	Association Malienne pour la Promotion des Ressources Gommifères
Funding	SGP US\$ 29,320; Co-financing US\$ 3,829.
Date	January 1999 to June 2000.

Objectives	To train the community members in techniques to restore the vegetation cover and soils in order to contribute to saving the banks of the Senegal River.
Activities	An environmental awareness and education session led by an NGO to promote more sustainable use of the river's resources, in particular the vegetation along the banks. Protected and planted sites were defined in each village. The project trained villagers in plant cultivation techniques and provided seeds for individual and collective plant nurseries. Amongst other species, the multiple-use species <i>Eucalyptus camaldulensis</i> and <i>Acacia senegal</i> were chosen for planting. Finally, the project trained villagers in anti-erosion techniques to protect the soils and riverbanks.
Results	The information on the causes and consequences of erosion, allowed the villagers to re-organise themselves to facilitate protection of the riverbank. The expatriates of the Gakoura village recently financed the construction of a cement wall to protect the banks. In 2000 the French Development Agency financed the construction of a stonewall to protect 70 m of the banks in Somadiki-coura from erosion.
Impacts	Soil erosion into the river was reduced. The project allowed the community to understand the causes of the degradation of the banks and their responsibility in saving the river. Techniques and methods to restore the soils and produce plants were widely taught and applied, by training initial relay-trainers in each village.

SGP Database link –

<http://sgp.undp.org/index.cfm?Module=Projects&Page=ShowProject&ProjectID=3945>

MALI **The Transformation of an Invasive aquatic Species into Organic Fertilizer in the Niger River.**

Location 6 villages in Markala (Ségou Region)

Beneficiaries Coopérative Agricole Multifonctionnelle de Markala

Funding SGP US\$ 13,154;
Co-financing US\$ 15,227 (community US\$10,710; cooperative US\$ 4,517).

Date August 2001 to August 2003.

Objectives To eradicate water “jacinth”, an invasive plant suffocating aquatic fauna and flora, which obstructs navigation on the Niger River; whilst demonstrating a sustainable solution based on communal participation for the eradication of the invasive plant.

Activities Training was provided to the population of 6 villages in the transformation of the invasive plant. To convince the population of the effectiveness of the fertilizer, the Cooperative organised agricultural and garden demonstration-plots. In each village, a committee responsible for the management of the project equipment (a cart, donkey, wheel-borrow and pirogue per village) was chosen by the general assembly and the village chief. The project determined that the best approach to promote the adoption of the technique was to encourage family or individual collection and composting of the plant, rather than communal composting. Women owning vegetable gardens were involved in the process as well as the men. Radio broadcasts were used to explain the harvesting and composting methods to the surrounding villages, and an inter-village meeting gave villagers a chance to share lessons learned with each other.

Results The project trained most of the villagers of 6 villages in the harvest and transformation of the invasive species into organic fertilizer. A year after the close of the project, the composting of newly arrived invasive species continues by 5 to 15 families per village. The committees put in place still guarantee the upkeep of the project equipment. One of the village committees has a fund of more than 40,000 F.CFA for potential repairs, and has already replaced their donkey.

Impacts The invasive species was locally eradicated within 2 years in the project area. Villagers confirmed that with the use of the compost the garden vegetables grow larger and the quality of the cereals is improved. The income from the sale of vegetables is greater thanks to the compost. The state technical services (SLACER) use the method developed by the cooperative to train other communities. Furthermore, certain villagers took the initiative to teach the technique to surrounding villages.

SGP Database link –

<http://sgp.undp.org/index.cfm?Module=Projects&Page=ShowProject&ProjectID=4860>

MALI **The Conservation and Sustainable Use of the Threatened Endemic “Bourgou” Species in the Northern Sahel of Mali**

Location Kochareye village (Gao Region).

Beneficiaries NGO TAMALA

Funding SGP US\$ 17,142;
Co-financing US\$ 6,987 (community US\$ 3,815; cooperative US\$ 3,171).

Date June 2002 to June 2004.

Objectives To restore natural bourgou patches on the banks of the Niger River as a revenue source for the population of Kochakareye, and to stabilize 5 hectares of dunes that were advancing towards the village.

Activities The project assisted the village to organize a 15-member committee for the project implementation. The village participated in numerous information sessions on the GEF focal areas. In addition, the project supplied wheelbarrows, buckets, and a motor water pump. A management plan was conceived by the committee and approved by the village to protect the bourgou fields and the dunes. Fines for owners of trespassing animals were established, and the committee hired a guard to survey the plants. The state technical agents of the “Service de la Conservation de la Nature” were involved throughout the project.

Results The regeneration of the bourgou was not a new activity for the villagers, but the project allowed them to do this activity in an organised and collective way. The NGO foresees financing a project to develop the production of juice and syrup from the bourgou plant in order to increase the women’s revenues. The collaboration of villagers and the state agents of the “Service de la Conservation de la Nature” during project implementation, engendered a perennial working relationship between the two.

Impacts The biological and mechanical dune stabilization techniques have stopped the progression of the dunes towards the village. The committee gained 175.000 F.CFA (approx. 300 USD) from the sale of the bourgou crop in 2003, which was used to buy a new roof for the school and repair the motor-pump. The bourgou harvested in 2004 is in storage, waiting to be sold when the prices rise. The money gained will be used to cultivate bourgou in 2005.

SGP Database link –

<http://sgp.undp.org/index.cfm?Module=Projects&Page=ShowProject&ProjectID=5715>

PAKISTAN Hudalara Drain: Improving the Water Quality of a Transboundary Drain Between India and Pakistan Through Active Stakeholder Participation

Location Originating from Batala District, Amritsar in India and ultimately falling into River Ravi in Pakistan, Punjab

Beneficiaries World Wide Fund for Nature - Pakistan

Funding SGP US \$27,720
Co-financing US \$ 8,433 (in kind)

Date December 1999 to November 2001

Objectives To improve the water quality of Hudalara Drain through active stakeholder participation, to initiate cross border dialogue and allegiance between the two neighbouring countries: India and Pakistan, and explore the possibility of signing a concrete agreement under the Indus Water Treaty.

Activities WWF Pakistan involved the Indian side right from the project-planning phase and incorporated a transboundary component as a project output. Along with providing cleaner production options to industry and gauging the health, hygiene and awareness levels in the community the project initiated a cross border dialogue between WWF India and a local academic institution, Nanak Dev University; to explore opportunities for carrying out activities at their end. The Pakistan side has linked up information with one of the existing transboundary initiatives called the South Asia Water Analysis Network (SAWAN) whereby water quality of transboundary rivers is being carried out.

Results As a result of the dialogue between Pakistan and India, WWF India developed a proposal aiming to facilitate stakeholders for taking steps to reduce the pollution load of Hudalara, which has been approved by UNDP India. Activities on the Indian side are in development, but on the Pakistan side of the border, organisation of stakeholder meetings, industrial surveys to assess the pollution status from 112 industrial units along the 60 km stretch were conducted, and community surveys to assess their health/hygiene and awareness levels regarding Hudalara Water were held. WWF India developed a very similar project following the same lines and plans to involve WWF Pakistan in effective execution of their future project activities. The cross border dialogue initiated between WWF India and Pakistan was a step towards identifying and acknowledging the Hudalara Drain as a transboundary issue.

Impacts Capacity of Government and WWF to collect, analyse, and disseminate information relating to transboundary issues is increased. The WWF - India project has just been approved and their activities started on October 1, 2005. Pakistan is planning to work in proximity with India and the possibility of a written agreement between the two countries is being investigated.

SGP Database link –

<http://sgp.undp.org/index.cfm?Module=Projects&Page=ShowProject&ProjectID=4290>

THAILAND CBO Support for Environmental Conservation

Location	Muang, Tha Wang Pha District, Nan Province
Beneficiaries	Hug Muang Nan Foundation (formerly Hug Muang Nan Group)
Funding	SGP US\$ 11,263.00; Co-financing US\$48,175 (In-cash US\$ 3,163; In-kind US\$ 45,012)
Date	January 1998 to December 1998

Objectives To build capacity of CBOs so that they are able to efficiently manage, rehabilitate and conserve the natural resources and watershed areas.

Activities Twice a year seminars and workshops have been organised for members of local community groups, subjects have included: waterbody conservation, sustainable agriculture, community forest, wildfire fighting for Youth Groups, and rotating fund system management. Study tours have been organised on integrating farming, community forest and community business. Religious rites and youth camping have been organised to uplift community morale. Trees have been planted in degraded land areas. Disseminating materials have been produced to facilitate the learning process for environmental and natural resource protection.

Results Six months after project launching, water quality was improved. A series of active groups and networks in the province had emerged. Community groups from adjacent provinces and countries, paid visits to facilitate the learning and sharing of each others experiences.

Impacts Return of several species was observed. Following on from the improvements to water quality, communities were able to develop eco-tourism and generate supplementary income. After completion of projects, the foundation got further financial support of US\$ 116,788 from NEF, to up-scale the activities and operate in a larger area of the province.

SGP Database link –
<http://sgp.undp.org/index.cfm?Module=Projects&Page=ShowProject&ProjectID=486>

TURKEY **Ecological and Socio-Economical Importance of a Small Marine Protected Area**

Location Kizilliman Mersin / Mediterranean

Beneficiaries Underwater Research Society

Funding SGP US\$31,500;
Co-financing US\$100,000.

Date December 2000 to November 2003

Objectives To create a community-based marine ecosystem conservation model; to demonstrate the benefits of the Marine Protected Areas (MPA) to local authorities, communities, fishermen, and students; and to promote MPA to a larger group of decision makers in order to replicate MPAs.

Activities Various education and awareness activities were organised to local artisanal fishermen. The university, the NGO and local artisanal fishermen consequently unified their effort and lobbied the fisheries authorities in the country. A detailed research program is planned to monitor recovery of the ecosystem. Various aspects of the recovering ecosystem, especially economical perspective were discussed and explained to local authorities, community, fishermen, and students.

Results The project leded the establishment of the Commission for Mediterranean Monk Seals *Monachus monachus* under the coordination of the Ministry of Environment, collaborating various Governmental and Non-governmental organisations, including the project's beneficiary, Underwater Research Society. The Commission is now working on legalisation for the Marine Protection Areas to be recognised as official conservation sites, with their own appropriate status. Raised awareness in the local community has also been achieved.

Impacts In 1999, the conservation plan designed by the university had been carried into effect. The local fishermen, who once saw the seals as the enemy to exterminate, are now well-aware that, existence of the seals in the region is a tool to keep large scale fishing boats away and also an assurance for their livelihood. The percentage of commercial species has increased. More importantly, the average length of the target commercial species, the red mullet *Mullus barbatus*, has noticeably increased. The ecosystem has been restored and sustained.

Two new Non-fishing Zones (one in Karaburun, Izmir (Egeen See), the other in Anamur, Mersin (Mediterranean)) targeting the conservation of the Mediterranean Monk Seals *Monachus monachus*, are under consideration. Another plan for a Non-fishing Zone in Aydincik, Mersin (Mediterranean) with the support of the Mersin Fishery Cooperative targeting sustainable fishing is under investigation.

SGP Database link –

<http://sgp.undp.org/index.cfm?Module=Projects&Page=ShowProject&ProjectID=4228>

ECUADOR **Diminution of Negative Impacts from Artisanal Mining in the Chinapintza Sector, South Region of the Condor Mountain Range**

Location Province: Zamora Chinchipe, Canton: Paquisha, Parrish: Nuevo Quito

Beneficiaries Asociación de Pequeños Mineros Autónomos Fronterizos de la Pingui Conguime (ARCOIRIS)

Funding SGP US\$ 25,000;
Co-financing US\$ 44,308.

Date Ongoing, started from February 2005

Objectives To mitigate the negative impacts on biodiversity and water resources caused by mining activities in the south region of the Condor Mountain range, and reduce extra-territorial contamination flows at the local level.

Activities An Environmental Management Plan of artisanal mining was consolidated; environmental monitoring and control will be conducted; clean technology will be adopted in the mining activities.

Results “La Pangui Conguime” association’s socio-organisative process was improved; the use of natural recourses will be optimised; communication and environmental education will be improved.

Impacts The project is only in its first phase of execution, the expected impacts are: poverty will be diminished by improving life conditions of the miners where labour environment will be improved with techniques and procedures that will manage gases and toxic wastes; the negative environmental impacts on natural resources, rivers, forests and human health will be diminished.

SGP Database link –

<http://sgp.undp.org/index.cfm?Module=Projects&Page=ShowProject&ProjectID=8619>

ECUADOR **Integrated Management and Reforestation in Costa Rica Mangrove Forest Island**

Location Province: El Oro, Canton: Santa Rosa, Parrish: Jambelí

Beneficiaries Asociación de Pescadores Artesanales Mariscadores y Afines de Costa Rica

Funding SGP US\$ 28,124;
Co-financing US\$ 30,494.

Date December 2001 to December 2003

Objectives To manage integrally 570 hectares of mangrove and promote forestation and reforestation actions within the Rizhopora mangle on Costa Rica Island (Ecuador).

Activities Training in natural resource management in relation to the mangrove, including contemplation of gender issues. Infrastructure is developed in order to facilitate technical work documentation and future investigations. Twenty women directly participated in black shell extraction activity. The association is equipped with a boat and an engine for the surveillance and protection of the 520 hectares given in custody by the Environmental Minister.

Results Rhizophora mangle (red mangrove) and 80 hectares of mangrove and zonification for extraction activities are reforested through community participation. Eight families and communitarian corrals for black shell and crab breeding were constructed. 520 hectares of mangrove are protected. 39 hectares of mangrove with black shell, *Andanara tuberculosa*, are repopulated. Construction of two corrals used for fattening the red crab, *Urcides occidentalis*. Construction of a cabin for tourists visiting the region. Computer equipment and computer management training provision strengthened. Reform of the statutes to integrate associates wives.

Impacts Native species were recovered from their mangrove habitat. Mangrove areas were protected (520 hectares) and reforested (39 hectares). The associates are qualified in the environmental caring of the island. Women are integrated into productive activities and are participating in the process of community decision-making; men and women are sensitive to gender issues. Alternative and sustainable productive activities were developed (raising and commercialization of crab, black shell; and ecotourism activities).

SGP Database link –

<http://sgp.undp.org/index.cfm?Module=Projects&Page=ShowProject&ProjectID=5057>

ECUADOR Custody and Management of Mangrove Areas

Location Province: El Oro, Cantón: Santa Rosa (Aso. Venecia del Mar) and Cantón Machala, Parrish Puerto Bolívar (Aso. PROMAR y Venecia del Mar)

Beneficiaries Comité Zonal/ Asociaciones de Mariscadores Autónomos y Anexos: Venecia del Mar y Productos del Mar/ Equipo Técnico Programa de Manejo de Recursos Costeros.

Funding SGP US\$ 39,328;
Co-financing US\$ 4,000.

Date September 2000 to September 2002.

Objectives To protect and safeguard mangrove areas.

Activities A series of capacity-building workshops were held, 3 modules and 4 training workshops related to socio-organizational, technical-environmental and administrative financial areas were offered. The Ecuadorian Ministry of Ambience provided both associations the concession documents of the 165 mangrove hectares. Capacity building for the local associations (Promar y Venecia del Mar). 8 corrals were constructed. The guardians cleaned the corrals of shells and the experimental ditch. The reproduction and natural regeneration of crabs, shells, mussels and oysters was investigated. Students of the School of Aquaculture at University Machala collected water samples to make the relevant laboratory analyses. A small library was equipped with mariculture, bioaquatic species, computer, leadership and tourism texts.

Results Mollusks are nurtured and commercialized. New infrastructure has been built. Log cabins for sentinels are constructed for the mangrove zones rotating system of custody. Alliances were formed (with the Technical University of Machala and the Coastal Resources Management Program, which monitors and evaluates the management plans of each association). Promotional reports regarding *Anadara tuberculosa* (dark shell) were produced.

Impacts Native species were recovered. Mangrove areas were reforested.

SGP Database link –

<http://sgp.undp.org/index.cfm?Module=Projects&Page=ShowProject&ProjectID=4481>

NB. These pages have been prepared with the assistance of Ling Yang and Lily Bygraves.