

GOVERNMENT OF CHINA
UNITED NATIONS DEVELOPMENT PROGRAMME

TERMINAL EVALUATION
**Biodiversity Management in the Coastal Area
of China's South Sea Project**

Final Version

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LIST OF ACRONYMS

ABS	Access and Benefit Sharing
CBA	Cost Benefit Analysis
CBD	Convention for Biological Diversity
CBNRM	Community Based Natural Resource Management
COD	Chemical Oxygen Demand
COP	Conference of the Parties
ESRI	Environmental Service and Resource Information
GEF	Global Environment Facility
GIS	Geographical Information System
ICM	Integrated Coastal Management
ICZM	Integrated Coastal Zone Management
IOC	Intergovernmental Oceanographic Commission
LF	Logical Framework
LFA	Logical Framework Analysis
LPSC	Local Project Steering Committee
MAB	Man and Biosphere
M&E	Monitoring and Evaluation
MOF	Ministry of Finance
MoU	Memorandum of Understanding
MPA	Marine Protected Area
MTE	Mid-Term Evaluation
NBSAP	National Biodiversity Strategy and Action Plan
NEX	National Execution
NGO	Non-Governmental Organization
NOAA	National Oceanic and Atmospheric Administration of the United States
NPD	National Project Director
NPM	National Project Manager
PCU	Project Coordination Unit
PDF	Project Document Facility
PIR	Project Implementation Report
PSC	Project Steering Committee
RBM	Result-Based Management
RCO	Reporting and Contracting Officer
SCCBD	South China Coastal Biodiversity Project
SCS	South China Sea
SIU	Site Implementation Unit
SMART	Specific, Measurable, Applicable and Accountable, Relevant and Realistic, Time-bound, Tractable and Targeted
SNCNR	Sanya National Coral Reef Nature Reserve
SNMR	Shankou Nature Mangrove Reserve
SOA	State Oceanographic Administration
SP	Strategic Priority
TE	Terminal Evaluation
TOR	Terms of Reference
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNESCO	United Nations Education, Science, and Culture Organization
VCG	Village Conservation Group
YSLME	Yellow Sea Large Marine Ecosystem

EXECUTIVE SUMMARY

The SCCBD Project, started in 2005 and planned over 8 years, was supported by the Government of China, GEF, NOAA and the private sector. The project is implemented by the State Oceanic Administration (SOA) of China in partnership with 5 Provincial Governments and Marine and Fishery Departments, national research institutions, NOAA, and local stakeholders and authorities. This summary provides the main findings of the terminal evaluation which took place in September 2011 as the project had successfully achieved its objectives and closure was moved to end of 2011.

Issues addressed by the project. The project intervention area includes ecosystems that are representative of those found along the coastal area of China's south sea, thus ensuring the replicability of the solutions developed in the demonstration sites to the whole area: mangroves, coral reefs, seagrass meadows, sandy beaches, islets and bays. These ecosystems provide critical habitats for the coastal and marine biodiversity and services that are essential for the development, food security, and livelihoods of many coastal communities. The selected project sites are highly significant for the conservation of species of global importance, including threatened and rare endemic species. This biodiversity and related marine habitats are under multiple threats which, if not properly and timely addressed, may jeopardize many of the services they provide. SCS coastal areas recently experienced major demographic growth and economic development where unsustainable resource uses exert pressure on the sustainability of ecosystems and biodiversity.

Development objective and intended outcomes. The project development objective is to promote the long-term conservation and sustainable use of South China's coastal biodiversity through multi-stakeholder management of marine biodiversity at four demonstration sites, together with mechanisms for replicating these approaches across five coastal provinces and autonomous region along China's south sea.

To meet this objective, the project was designed according to three intended outcomes:

1. Capacities for conservation and sustainable use management are strengthened at four existing MPAs
2. Tools, instruments and approaches for addressing the root causes of critical threats to marine biodiversity in China's South Sea coastal area are developed, tested and demonstrated
3. Appropriate tools for conservation and sustainable use at the four sites and promote their broader adaptation across China's South Sea coastal area are implemented

Results

The progress achieved towards the development objective and intended outcomes includes the following achievements:

Development Objective: Conservation and sustainable use of coastal and marine biological diversity in four sites along China's coastline.

Multi-stakeholder consultation mechanisms. For the revision of the Nanji Island township master plan, the opinions of the Nanji Reserve Administration, island residents, socioeconomic and ecological experts, and provincial and municipal stakeholders involved with tourism, finances, development and reform, planning and construction, and water, were taken into consideration to ensure the conservation of globally significant marine biodiversity around the Nanji Islands, while achieving the sustainable development of local communities.

Participatory management of biodiversity. The project interventions led to a major increase in public and authorities' awareness and understanding of the importance of biodiversity, thus establishing in every site a network of actors who contribute one way or another to the participatory management and conservation of biodiversity. As local resource users better understand the importance of marine biodiversity and benefit from it, they get involved in its sustainable management and comply with conservation regulations. Participatory biodiversity management processes were developed in Nanji through contracts established between the MPA and villages; in Shankou through contracts between the MPA and resource users and the establishment of a network composed of local village leaders and conservation groups, volunteers associations and schools; in Dongshan-Nan'ao, an inter-regional

cooperation mechanism was established to harmonize the management of highly migratory species between two provinces which involved joint MPA zoning, planning and law enforcement, harmonised fishing closure period, regular meetings and information sharing; and in Sanya, a partnership was established between the MPA and tourism operators that benefit from the marine biodiversity to contribute to the funding of management operations.

Land-based pollution is reduced through the identification and reduction of pollution sources, integrated coastal zone management and the construction of wastewater treatment plants in every project site.

Impact on biodiversity: Negative trends in focal species abundance and distribution area are stabilized or reversed in every demonstration site. In Shankou, 59.9 ha of mangrove were planted with a 60% survival rate, providing habitats namely for migrating birds. Through improved management and habitat conservation, the coverage of the seagrass *Halophila ovalis* increased from 1% to 2% in a 32-ha habitat. With the seedlings supplied with the support of Stora Enso, the total area of mangroves has increased from 730 ha at project inception to 818.8 ha. Destructive resource uses such as mangrove removal, bird hunting, non sustainable collection of worms and crabs have practically stopped in the core area of the Shankou Nature Reserve and the number of recorded bird species increased from 139 in 2000 to 187 in 2008. The presence of the Black-face Spoonbill was witnessed by a specialist. In Nanji Islands, the declining trend of shellfish biomass and population density is stabilized as a result of the improved management of the MPA. The technique for restoration of *Sargassum horneri* was demonstrated and 2 beds of about 100 m² were restored, providing a habitat for fish larvae and shrimp species. In Sanya, over 4000 coral fragments of *Goniastrea* were transplanted over 1 hectare with a survival rate of 95% after one month and a growth rate of 1.4 cm/6 months. At the Dongshan-Nan-ao site, the removal of mariculture facilities freed the passage of migratory species, and sightings of over 200 Bottlenose and Chinese White Dolphins were reported, which had not occurred in many years. The reduction of point source pollution affecting the coastal area and the removal of marine debris and litter on beaches improved the water quality as well as the quality of nesting beaches for turtles and horseshoe crabs.

Outcome 1. Enhancement of the capacity for the conservation and sustainable use of biodiversity of the four demonstration sites.

All sites.

- Providing GIS equipment, software and trainings improved the capacities of all MPAs in the demonstration sites to monitor biodiversity status and threats, plan for biodiversity conservation and sustainable use, increase patrolling and enforcement efficiency, and identify optimal locations for the construction of wastewater treatment plants.
- The baseline survey reports provide the essential reference for long-term monitoring in every site.
- MPA personnel's capacity and qualification was improved through specific trainings on MPA management and their participation to the project.
- Local governments have increased their capacity to hold consultation processes to integrate biodiversity concerns into local development plans.

Nanji. Enhanced conservation capacities resulted in improved patrolling and more effective enforcement which significantly reduced infringing on the MPA core zone. GIS-based planning, biodiversity monitoring, and the baseline survey report have improved MPA management capacity and efficiency. MPA personnel have a better understanding of the purpose of their work. As local resource users better understand the importance of biodiversity, they comply with conservation regulations. After participating to educational activities on marine biodiversity, school students conveyed conservation messages into their homes and to their parents.

Sanya. As conservation capacities were strengthened at Sanya MPA, GIS-based surveys on species distribution, the baseline survey report, and enhanced capacity for coral reef monitoring led to the identification of marine biodiversity hotspots, increased number of coral species, critical threats and mitigation measures, more relevant monitoring sites, the demonstration of the importance of the site for coral recruitment and the selection of optimal sites for coral transplantation. Over 4000 coral fragments were transplanted with a survival rate of 95% within one month after transplantation.

Shankou. Strengthened conservation capacities at Shankou Mangrove and Dugong Reserve include the baseline survey report, improved capacity for GIS-based biodiversity monitoring and threat assessment, and participatory MPA delimitation, planning and management. Increased awareness of the importance of mangroves led to reduced cases of mangrove removal. As a result of education programs in schools, children contribute to raise villagers awareness about the importance of biodiversity, to enforce mangrove protection, and to educate parents about conservation.

Dongshan – Nan’ao. Enhanced conservation capacities include the baseline survey report and improved capacity for GIS-based biodiversity monitoring and threat assessment which allowed the production of maps of the distribution of migratory species such as the Chinese White Dolphin, marine turtles and horseshoe crabs. Outreach material and trainings on the biology and conservation of migratory species for marine and fisheries administration, MPA staff, fishermen, aquaculturalists and primary school students led to an increased understanding of the vulnerability of these species and of the value of conserving marine wildlife, increased public participation in the rescue of stranded animals and release of artificially hatched fish into the marine environment, cleaning of marine debris and removal of abandoned fishing boats.

Outcome 2. Design, test and demonstration of tools, approaches and mechanisms used to eliminate existing threats to marine biodiversity in the coastal waters of South China.

The demonstration themes addressed six issues that were identified through the threat analysis conducted during the preparatory and inception. Pilot conservation tools, approaches and mechanisms achieved the intended outcomes and early signs of positive impact are observed in every site. Well documented approaches provided a foundation for the reciprocal learning and adaptation in the pilot MPAs (Outcome 3) and will be useful for future adaptation to non-pilot MPAs.

Demonstrations addressed themes.

Demonstration theme	Results
(a) Integrated coastal zone management as an approach to township planning, management and development and development of MPA management plan for the conservation of Nanji Islands coastal biodiversity.	<ul style="list-style-type: none"> ▪ GIS-based data and maps have enabled sound decision-making on the basis of multi-sector information collected through the baseline studies to mitigate potential negative impacts related to the implementation of the township master plan. Marine biodiversity hotspots and resource uses were integrated into the township master plan, mariculture development controlled and facilities removed around the MPA core zone, and the project for building an airport for helicopters was canceled. ▪ Mainstreaming of biodiversity conservation into development plans will reduce the pressure on marine biodiversity caused by the rapid local community development and ensure that township government allocates financial resources to support marine biodiversity conservation and integrated coastal zone management. ▪ Sewage and solid waste treatment plants have reduced land based pollution, thus improving water quality and reducing the occurrence of red tides.
(b) Integrated pollution control at the Sanya Demonstration Site	<ul style="list-style-type: none"> ▪ Sanya city government invested to build two sewage treatment plants which contributed to control water pollution in the area that has the greatest impact on Sanya Coral Reef MPA. Water quality indicators show that land-based sources of pollution were significantly reduced. ▪ Provisions for regulating threats to the MPA related to water quality have been integrated into regulations for Marine Environmental Protection and Coral Reef Preservation.
(c) sustainable financing mechanisms at the Sanya Demonstration Site	<ul style="list-style-type: none"> ▪ A financing pattern was developed which relies on government funds as a major source of funds, complemented by sea use fees (for coral reef use by tourism enterprises) and public donations. A proportion of the sea use fees (from the tourism industry) is earmarked to support MPA operational costs. ▪ A pilot “multi-win” public-private partnership was established, i.e. government, local tourism enterprises and communities, to provide manpower, finance and facilities for the management of the MPA. Through this partnership, the MPA

	gets funds, tourism enterprises make profit through their use of biodiversity resources (tourism), and fishermen benefit from alternative livelihoods related to tourism, thus reducing the impact on coral reefs and their resources.
(d) Participatory management and sustainable livelihood strategies at Shankou Mangrove Reserve	<ul style="list-style-type: none"> ▪ A community participatory management pattern was tested in Shankou mangrove natural reserve. Village conservation groups (VCGs) gathering 200 registered members were established in 7 villages as a platform for enabling community stakeholders' participation. VCGs helped coordinating the management of the mangrove and participate in awareness activities and patrolling. In order to reduce the threats related to unsustainable or destructive use of mangrove resource practices, VCGs have contributed to the identification, development and promotion of profitable alternative livelihoods based on the sustainable use of resources and supported by a marketing strategy based on mangrove-friendly product branding. ▪ Resource use patterns were changed to ecotourism, cultural tourism and sustainable resource uses to provide biodiversity conservation benefits while improving livelihoods. Benefits were increased through the branding of mangrove-related products. ▪ Beihai Volunteer Association, a local NGO constitutes an efficient link between the project and local actors to get them involved in activities and raise their awareness on the importance of biodiversity. ▪ In Shankou, 59.9 ha of mangrove (60% survival) were planted (afforestation), providing habitats namely for migrating birds.
(e) the establishment of model MPA designation at Weizhou Island	<ul style="list-style-type: none"> ▪ SCCBD supported the development of the Weizhou Island Biodiversity Management Plan and recommendations to establish the Weizhou Island Special MPA were submitted to the provincial government for approval. The establishment of this MPA will strengthen the biodiversity conservation component of the Beibu Gulf Development Plan approved by the national government. ▪ Management and law enforcement plan, monitoring plan, development plan, and survey report for public participation were developed to document the establishment of a MPA. ▪ A waste collection and treatment system was built in Weizhou Island, which will reduce the pollution to the coral reef in the MPA.
(f) Inter-provincial cooperation on integrated coastal zone management and biodiversity conservation in Dongshan-Nan'ao migratory channel.	<ul style="list-style-type: none"> ▪ The project facilitated Fujian-Guangdong interprovincial collaboration and coordination mechanism for conserving the marine environment and protecting migratory species in Dongshan-Nan'ao MPA. Joint MPA zoning and planning, joint law enforcement, regular interprovincial coordination meetings, sharing information, etc., further enhanced the migratory channel conservation effectiveness and promoted the sustainable use of marine resources in a coordinated manner. ▪ Through the establishment of an interprovincial coordination committee, the inter-provincial cooperation allowed developing a common understanding of critical issues to achieve a harmonized planning of conservation and restoration measures and joint law enforcement ▪ The project interventions led to a major increase in awareness of the importance of biodiversity among authorities and the public, thus establishing a network of actors all contributing one way or another to biodiversity conservation.

Outcome 3. Dissemination of best practices.

Project tools and results are synthesized and disseminated to MPA managers and other relevant officials throughout the wider project area

Pilot initiatives were monitored locally and evaluated yearly through annual workshops. Annual joint meetings, thematic cross-learning workshops among sites, and inter-site study tours allowed

experience sharing among SIUs, governmental institutions, enterprises, communities and other stakeholders, and enabled the adaptation and implementation of successful approaches.

Best practices and lessons learned were documented for each demonstration site and disseminated and shared among SIUs. Recommendations for replication in other MPAs and integration to provincial regulations and development plans were made by each SIU.

Model approaches for marine biodiversity conservation in the project sites have been formulated, including township planning by integrating MPA management in Nanji, trans-province management of marine migratory species in Dongshan-Nan'ao, sustainable livelihood in Shankou through the marketing approach of branding local products and industries, sustainable financing mechanism in Sanya. Five books summarize practices of marine biodiversity conservation and integrated coastal zone management as implemented in each site and for the whole SCS area.

Based on best practices developed in each demonstration site, stakeholders at each site have adapted and implemented appropriate measures for conservation and sustainable use.

Recommendations for replication in other MPAs and integration to provincial regulations and development plans were made by each SIU. The outcomes of the adaptation and implementation of best practices are summarized in the following:

All sites	
Mainstreaming biodiversity in development plans	Marine biodiversity conservation and ICZM were mainstreamed into the development plans of 5 provinces/autonomous region through SOA's signing of a <i>Declaration on Coastal Biodiversity Conservation in China's South Sea</i> – the document was disseminated throughout China.
Nanji	
Sustainable financing mechanism	An innovative financial mechanism based on the adoption of one common admission ticket for MPA visitors - 5% of the admission fees income is allocated to biodiversity conservation on the island.
Pollution control	3 wastewater treatment plants, a landfill and a wastewater pipeline network were constructed to reduce wastewater discharge and thus reduce threats to biodiversity in the intertidal ecosystem
Public-private partnership	A private enterprise which owns a highly touristic area affecting the MPA core zone cooperated with the reserve and gave a plot of land to establish a monitoring station for the management of the core zone.
Participatory management and sustainable livelihood	Residents involved in shellfish and algae collection have signed a contract with Nanji Administrative Authority to adopt a size selective harvest method and respect closure periods - in return they have a right of access to a specific part of the intertidal zone in the buffer zone. This approach has attracted a high level of participation and effectively relieved the harvest pressure on the core zone as demonstrated by the survey results.
Harmonized management measures	A fishing closure period was extended from 2.5 to 3.5 months and all fishing is prohibited except for gill net and line fishing to protect fishing grounds and fish larvae.
Public awareness	Tourists contribute to biodiversity preservation by adopting a more responsible behaviour, i.e. avoiding littering, avoid eating wild seafood, and developing a positive perception and caring attitude towards marine life and oceans. Awareness efforts contributed to develop local student's understanding of marine environment and biodiversity and to carry the message into their families following what the project called "Small Hand in Big Hand".
Sanya	
Mainstreaming biodiversity in development plans	Provisions for regulating threats to the MPA related to water quality have been integrated into regulations for Marine Environmental Protection and for Coral Reef Preservation.
Participatory management / Public-	19 workers were employed through the project to ensure regular patrols in the MPA. To ensure a sustainable source of funding to cover salaries, allowances and office expenses required to carry out conservation and management operations beyond the

private partnership	project duration, a partnership was established between the reserve and tourism enterprises. The reserve developed 3 management branches corresponding to each area, in partnership with 10 tourism companies which provided funding, participated in periodic beach clean-up and eradication of crown-of-thorns starfish (<i>Acanthaster planci</i>). The MPA trained the staff of the tourism companies to conduct monitoring activities. This public-private arrangement solved the issue related to lack of funding by transferring the responsibility of coral reef conservation on the tourism companies, and improved the management capacity of the Sanya Reserve as a whole.
Sustainable alternative livelihood	Before the project, there were nearly 1,500 fishermen on the island fishing in the coral reef area, too often using destructive practices harmful for coral reefs. Tourism developed by companies provided job opportunities for residents on the island and has become a sustainable alternative livelihood. Nearly 1,000 residents previously living off coral reef resources began working for the eco-tourism companies and increased their income.
Shankou	
Mainstreaming biodiversity in development plans	The conservation of mangroves, seagrass and coral reefs is integrated into the <i>Beibu Gulf Economic Zone Development Plan</i> , approved by the State Council and implemented.
Dongshan-Nan'ao	
Mainstreaming biodiversity concerns into development plans	The Ocean and Fishery Departments of Fujian and Guangdong Provinces co-signed the <i>Outline of Action Plan of Dongshan-Nan'ao for Inter-provincial Biodiversity Conservation</i> to reduce and prevent threats to coastal ecosystem integrity and protect rare migratory species. The action plan sets up operational rules including periodical meetings, alternate leadership between provinces, information sharing, communication, co-monitoring and reporting, and effectively protecting highly migratory species and the migratory corridor. To coordinate marine function zoning, the Ocean and Fisheries administrative authorities of Shantou, Zhangzhou, Nan'ao and Dongshan signed the <i>Coordination Opinions of Shantou, Guangdong and Zhangzhou, Fujian Concerning the Marine Function Zoning in the Bordering Sea Area</i> in 2010.
Participatory management	Fishery associations and a buddhist organization participate in the rescuing of stranded marine mammals and turtles and in coastal and beach cleaning following a long-term program for cleaning litter in the bays and on the beaches.

An assessment of the project objective and results according to the GEF criteria is summarized in the following table:

Summary of the assessment of development objective and outcomes

Result level	GEF Criteria		
	Relevance	Effectiveness	Efficiency
Objective	HS	S	HS
Outcome 1	HS	S	HS
Outcome 2	HS	S	HS
Outcome 3	HS	S	HS

Note: The project relevance, effectiveness and efficiency are rated according to the following indices: **HS** - highly satisfactory, **S** - satisfactory, **MS** - marginally satisfactory, **MU** - marginally unsatisfactory, **U** - unsatisfactory, **HU** - highly unsatisfactory

The relevance of the development objective, as well as the relevance of outcomes, i.e. the extent to which the outcome reflects key national priorities and receives support from key partners, are rated highly satisfactory (HS). The outcomes effectively address the issues identified in the threat analysis and are consistent with national priorities.

The effectiveness of the development objective and of outcomes are rated satisfactory (S) on the basis of the evidence presented in the tables 1 to 4 of the sections 3.1 and 3.2 which shows that, overall, objectives and intended outcomes were met in every site with only minor shortcomings.

The efficiency of the development objective and of outcomes, i.e. the optimal transformation of inputs into outputs, are rated highly satisfactory (HS), which means that the project was cost effective and that resources have been used appropriately. The partnership strategy with NOAA who provided international expertise to provide trainings, the high level of ownership demonstrated by the local governments whose contribution far exceeded the contributions pledged at project inception, the inter-site learning and replication approach all contributed to the high efficiency of this project implementation.

Sustainability

This section gives an appreciation of the first indications of potential impacts and of the sustainability of main project outcomes / benefits after the project ends.

Financial aspects.

The concepts of marine biodiversity conservation and integrated coastal zone management were integrated into the National Marine Ecological Conservation Plan which is one of the four components of the 12th Five-Year Plan, which will ensure a sustained support to this focal area throughout the period. During this period, the scientific and technological support will continue to be strengthened and marine eco-restoration will become the focal object of support.

Nanji – (L) Part of the income from the admission fees is allocated to the conservation and construction of the reserve. The town government invested 20 million RMB for rebuilding a public education center on environment and biodiversity and intends to support cultural tourism, hotel standards, planning aquaculture, and eco-environmental rehabilitation.

Sanya – (L). The sustainable financial mechanism relies mainly on government funds supplemented by contributions from enterprises and the sea area use fee which will be included in the general budget and allocated by the financial departments of all levels, for governance, protection and management of sea areas, following the user pays principle, thus providing a stable source of funding for the reserve. Since 2007, Sanya has received annually a special fund as a subsidy from the Department of Ocean and Fishery of Hainan Province, which amount has appreciably increased every year.

Shankou – (ML) The aspects of the project interventions in this site which are most likely to be financially sustainable are those related to the sustainable use of mangrove resources and benefiting from the mangrove-branding marketing. As a result of increased awareness of authorities, financial support was increased for the Mangrove research centre and for the mangrove and dugong reserves. Over 10 million RMB were promised for the establishment of a wetland nature reserve. With the development of economy and increased awareness of the importance of conserving marine biodiversity, it is likely that the government's regular budgetary input to the demonstration site will be at least maintained.

Dongshan-Nan'ao – (ML) The inter-provincial coordination committee established the cooperation mechanism for inter-provincial integrated coastal management and migratory species protection, and approved the *Outline of Action Plan of Dongshan-Nan'ao for Inter-provincial Biodiversity Conservation*. This inter-provincial cooperation mechanism concerns policy, administration, staff competence and funding. Both Fujian and Guangdong have increased their funding to enhance marine ecosystem protection.

Socio-political aspects.

All sites. In order to spread the outcome to the whole project site, and to integrate marine biodiversity conservation and integrated coastal management into the development planning of the 5 provinces and autonomous region, SOA and the 5 provinces signed the *Declaration on Biodiversity in the Coastal Area of China's South Sea* which has been circulated nationwide. The government support and planning support for spreading the successful experience have been ensured.

Alternative livelihoods, direct resource user groups, and participatory management. An important condition for the sustainability of project impacts rests on the success of the development of alternative livelihoods. SCCBD assisted community stakeholders, fishermen and other direct marine resource users to change their original livelihoods which exerted unsustainable pressure on marine biodiversity and adopt profitable livelihoods based on a sustainable use of resources. The evidence

presented by the project and collected during site visits is that key stakeholders, from the local communities to the provincial governments, see that the project benefits are in their interest. The project seems to have been able to change stakeholders and local communities' perceptions and behaviour and develop a sense of ownership towards marine biodiversity resources, which is an essential component of sustainability.

Governance aspects.

The highly participatory approach adopted by the project and the careful and adequate identification of stakeholders have allowed to involve the relevant actors in the project decision-making processes (planning) and implementation, which increased ownership on the part of authorities and institutions, enhanced compliance on the part of resource users and reduced the need for strict enforcement.

In Shankou, local regulations were developed to ensure the right of local communities to participate in the management of the MPA, the *Regulations of the Villager Conservation Group of Shankou Reserve* and the regulations for a multi-participatory coordination committee. Such regulations have not been developed in the other project sites, but in Nanji and in Shankou, contracts with MPA management have been established at the village (Nanji) and individual (Shankou) levels to legitimize the role and rights of resource users and specify their participation in the management of the marine protected area.

Such local recognition of user rights is embedded in an enabling legislative framework which should be sufficient to protect users's rights in the face of industrial development or lucrative resource exploitation projects: The *Law of the People's Republic of China on the Administration of the Use of Sea Areas of 2001* does provide the legislative framework that enables the devolution of natural resources management rights to local users or community groups and protects users' rights.

All sites. Therefore, the governance / institutional aspects the sustainability of outcomes are rated as likely (L) for all project sites, which means that only minor risks are likely to affect this dimension of sustainability of the project outcomes.

Environmental aspects.

Immediate environmental risks have been properly addressed by the project interventions.

Medium to long term environmental risks: Climate change. The impact of climate change on marine and coastal biodiversity is observed to varying degrees in all marine environments. In the China's south sea, climate change impacts include increased ocean temperature, rising sea levels, changes to major current systems, and ocean acidification. In the medium to long term, these impacts have the potential to lessen the biodiversity benefits gained through the project interventions.

All sites. Therefore, the environmental aspects the sustainability of outcomes are rated as moderately likely (ML) for all project sites, which means that moderate risks are likely to affect this dimension of sustainability of the project outcomes.

Summary of the assessment of aspects of sustainability for each site

Site	Financial	Socio-political	Governance / institutional	Environmental
Nanji Islands	L	ML	L	ML
Sanya	L	ML	L	ML
Shankou	ML	ML	L	ML
Dongshan-Nan'ao	ML	ML	L	ML

Contribution to building national capacity.

This project has contributed to develop and strengthen national capacity for marine and coastal biodiversity conservation and sustainable management at every level: systematic, institutional and individual.

Systemic capacities. The impact of the capacity building interventions reaches far beyond the project implementation sites as many outcomes of the project such as the pilot approaches developed to mitigate specific threats to marine and coastal biodiversity were integrated in the 12th 5-year plan

for Development of Marine Science and Technology, thus reducing financial, socio-political, and institutional risks to the sustainability of the corresponding interventions.

Individual and institutional capacities. Implementation through subcontracts involved stakeholders, NGOs, research and academic institutions, private partners, authorities, and communities, including primary and middle schools, all at the local level, thus developing the awareness and capacity of a whole network of people in different levels of the local society who will continue to pass on the conservation message to their own community.

SCCBD has contributed to build multi-stakeholder partnership platforms. In total, 57 partners have been involved in the project. Governmental line agencies include SOA, MOF, provincial Department of Ocean and Aquaculture, national and local research institutions, universities, primary and middle schools, local NGOs, marine and fishery technical services, private enterprises, etc.

A total of 54 training courses, workshops, study tours and field investigations were supported by the project. These activities greatly contributed to enhancing the technical capacity and policy formulation and biodiversity management capacity and building the public awareness on biodiversity conservation.

China's Training and Education Centre for Marine Biodiversity Conservation and Ecosystem Management was established in Xiamen in 2006 with the support of SOA, NOAA, and UNDP to integrate advanced ecological conservation approaches and methodology into MPA management, disseminate basic knowledge in marine and coastal ecological conservation, and improve marine biodiversity conservation effectiveness. Since its establishment, with the contribution of SOA's Third Institute of Oceanography, 300 persons were trained through 18 courses and workshops.

Monitoring and evaluation

M&E plan. As required for a GEF/UNDP project, the project document included monitoring and evaluation (M&E) procedures and a plan to monitor results and track progress toward achieving project objectives. The initial budget earmarked financial resources for conducting the midterm and terminal evaluations as well as a specific line budget for Adaptive Management Monitoring by SOA, UNDP and MOF over the planned 8-year implementation.

Indicators. The revised set of indicators (after MTE) used for annual PIRs was examined and a general observation is that most indicators are output- or action-oriented, and did not meet the SMART criteria. Some indicators were redundant or overlapping. The impact indicators (project objective level) do not allow reflecting the project contribution to the conservation or sustainable use of marine biodiversity of global significance. The M&E system was implemented and facilitated timely tracking of project implementation and progress toward project objectives despite the fact that indicators were inadequate.

Site-specific monitoring, evaluation and reporting were effective management instruments for ensuring the achievement of project intended results, addressing challenges and adapting to changing conditions.

Joint annual review and work planning involving all SIUs ensured the effective coordination of the project implementation in the 5 project sites, a common understanding of issues and interventions among project teams and stakeholders, and sharing experiences among all sites

Result-based management was well integrated and applied by most SIUs. The concept of adaptive management was applied by the PCU through the annual reports where clear directions were given based on the previous evaluation of project implementation, notably to realign weak management practices. Still, SIUs seem to understand this approach as adapting to changing circumstances rather than refining the formulation of interventions to better reach intended results based on monitoring indicators.

The M&E system is rated Moderately satisfactory (MS) as there were moderate shortcomings in the project M&E system, mainly related to the identification and use of inadequate indicators.

Monitoring of long-term changes

The establishment of a monitoring and evaluation system of long-term changes of marine and coastal biodiversity in every province or region was incorporated in this project as an integral component and

included the determination of environmental and resource baselines for each site, provisioning of equipment and GIS software, and capacity building for data gathering, analysis, and use.

Potential for replication

The project has adopted an innovative approach to replicability by building replication into the project itself rather than assuming it will take place following the project's completion. This involved crosslearning among project sites throughout the project implementation through joint reviews of project achievements and experience sharing and the adaptation of appropriate approaches to remove/mitigate threats to the other sites during the second phase of the project (Outcome 3) on the basis of the information collected through baseline surveys (Outcome 1).

In order to integrate marine biodiversity conservation and integrated coastal management into the development planning of the 5 demonstration provinces, SOA and the 5 provinces/region signed the *Declaration on Biodiversity in the Coastal Area of China's South Sea* which has been circulated nationwide as an example of successful cooperation between the Chinese Government and GEF/UNDP.

A series of best practices and lessons in marine biodiversity conservation and integrated coastal zone management have been assembled into books published by China Ocean Press and distributed to coastal China provinces and cities.

Processes affecting the attainment of project results

Project preparation and design. The project strategy developed in two phases around the three intended outcomes was clearly laid out in the project document and followed throughout the implementation. The two phases refer to capacity development and development of innovative approaches as a first step, and cross-learning and replicating as a second step. Although this design must have been demanding as it required a continuous evaluation of the results and assessment of their relevance and adaptability to the other project sites, it proved to be a very efficient approach.

Clear management arrangements had been defined at the design stage and, overall, seemed appropriate. However, insufficient funding limited the recruitment of international consultants. This problem was circumvented by NOAA's contribution that allowed to benefit from a team of US experts to support the project.

Country ownership. The project concept was developed in line with national environmental and development priorities and plans of the country and its results are still relevant to current national priorities, including China's Oceanic Agenda 21, the National Biodiversity Conservation Strategy and Action Plan and China's 11th Five-Year Economic Development Plan.

The relevant country representatives from government and civil society were involved in the project. A great part of this project success is attributable to the high commitment and active participation of the relevant stakeholders at every level, from the government representatives at the provincial, municipal and county levels to the local resources users and the students in local schools around MPAs.

Different levels of government have approved or revised policies or regulatory frameworks in line with the project's objectives. These regulations and plans provide a legislative and policy framework that will further support the project outcomes and will contribute to their sustainability and replicability.

The local Governments' total (in-kind and financial) contributions amounted to 378% of the contribution pledged in the project document which demonstrates Governments' high commitment and ownership towards the project objectives.

Stakeholder involvement. The involvement of stakeholders was based on a sound stakeholders' analysis conducted during the preparatory phase. Stakeholders were involved in a vast consultation process leading to the definition of objectives, outputs and activities and to the identification of potential socioeconomic impacts related to the project interventions and groups that were likely to be significantly affected. Recommendations were made to get these groups closely involved in the project implementation through a formal structure for participation. Consultations were also held with Government stakeholders at the provincial, city and county levels through regional and national workshops to collect their main priorities and concerns. This inclusive process is all the more

commendable that participation of local stakeholders in planning and decision-making was still new in China.

A stakeholder participation plan included the promotion of stakeholders understanding and awareness of their rights and responsibilities, coordination and networking of stakeholders, capacity building and education and training of stakeholders. Local stakeholder participation in decision-making and project implementation was ensured through advisory committees of direct resource users and LPSCs established in every province and autonomous region.

Financial planning and co-financing. The contribution from the Government of China is much higher than the amounts pledged in the project document which demonstrates its high commitment and ownership towards the project objectives. Other contributions were paid as planned.

Leveraged funds were contributed in every site as a result of effective advocacy from the project staff and reflect the increased awareness of local authorities of the importance of coastal biodiversity conservation for a sustainable local development

Best practices / lessons learned

Project formulation The design of the project around 3 outcomes integrating capacity building, innovative demonstrations and cross-learning for replication / adaptation of tested best practices among five sites of significant biodiversity during the course of the project implementation requested the continuous evaluation and enhancement of the interventions and allowed to extend the impact of conservation measures across the coastal zone of China's South Sea.

The technical and socioeconomic surveys and consultations conducted during the preparatory phase of the project ensured the project interventions specifically tackled the pressures and threats to marine biodiversity, but also the allowed the participation of resource users, so that identified alternative livelihoods matched the needs of affected stakeholders.

The careful identification of stakeholders at each site allowed involving all relevant actors having a concern for marine resources and environment which has been a key factor to ensure ownership and mainstreaming of marine biodiversity conservation into development plans.

The decentralized management structure (SIUs and LPSCs) under the sustained guidance of the PCU and PSC fostered greater ownership at multiple levels and multi-stakeholder involvement for an effective implementation of the project through the achievement of 17 subcontracts.

Project implementation and coordination The PCU has exercised vigilant monitoring of project progress and identified at the end of each year, the necessary adjustments and aspects to strengthen to ensure the achievement of intended results as effectively and efficiently as possible. This wise management and coordination is likely a key factor in the success of the project.

Monitoring and evaluation Site-specific monitoring, evaluation and reporting were effective management instruments for ensuring the achievement of project intended results, addressing challenges and adapting to changing circumstances.

Baseline surveys were essential to document the reference situation in terms of environment, biodiversity, socioeconomy and threats, thus providing specific information to develop demonstration tools and approaches (outcome 2) and a set of benchmarks for long-term biodiversity and socioeconomic monitoring and impact assessment.

Joint annual review and work planning involving all SIUs ensured the effective coordination of the project implementation in the 5 project sites, a common understanding of issues and interventions among project teams and stakeholders, and sharing experiences among all sites

Communication and partnership with local stakeholders. Building a trusting relationship with the local communities is a key factor of success in the development of processes which require their adherence at various levels. This is accomplished by maintaining a presence, a genuine communication, by involving them in the planning and decision-making, and making tangible demonstrations that the project purpose is their benefit.

Participatory decision-making and interactive consultation are effective approaches to devise socially acceptable solutions while avoiding the conflicts related to the implementation of conservation

measures. Yet, this represents a real challenge and takes time, especially when addressing new issues and when reconsidering traditional or usual ways of doing things. The active involvement of community leaders in the facilitation of consultation processes has been effective for building consensus.

Recommendations

R1 This project has developed a wealth of innovative practices for the management and conservation of marine and coastal biodiversity, including innovative technologies for biological restoration. Best practices documented for each demonstration site could be disseminated more widely by producing more synthetic and user-friendly presentations (leaflets, posters, etc.).

R2 This project has successfully focused on mitigating or removing local threats to marine coastal biodiversity and achieved conservation results. However, future interventions should also address adaptation or mitigation of the effects of global environmental changes which large scale negative impacts could cancel out these biodiversity benefits in the long-term.

R3 The implementation of future projects would be enhanced by a careful identification of indicators better reflecting the achievement of outcomes rather than outputs, and meeting the SMART criteria. The use of such indicators would facilitate the application of the adaptive management approach.

R4 Ensure that the long term monitoring system established in every site includes a permanent monitoring and assessment of the SCCBD project impacts on biodiversity and threats to allow the identifying and implementing continuous adjustments to the conservation and sustainable management measures following the adaptive management principles.

R5 Although it is clear that the project has contributed to develop successful alternative livelihoods for a number of local users who had to change their use of resources and pay the opportunity costs related to the adoption of conservation measures, the actual impact on all users at each site remains somewhat elusive. This aspect could be strengthened by a more systematic assessment of the impact of changes in resource use patterns on local communities and their livelihood in the short and the long term.

R6 To replicate the SCCBD pilot marine biodiversity management methodologies and procedures, it is recommended that SOA and SIUs prepare technical guidelines for marine biodiversity management. These guidelines could include the following topics:

- (1) How to conduct a baseline survey in a MPA;
- (2) Participatory community and stakeholders consultation for the development of a MPA management plan and for the participatory identification and development of alternative livelihoods for affected stakeholders;
- (3) Participatory monitoring of marine biodiversity involving direct resource users;
- (4) Design and implementation of biodiversity education and awareness building programs for local communities. The guidelines could include: (1) major approaches, actions and channels to build public awareness; (2) major actors, stakeholders and target groups; (3) potential financial resources to support awareness activities; (4) how to assess and evaluate the effectiveness and impacts of public education actions.

R7 Further strengthen and institutionalize multi-stakeholders consultation mechanisms for planning and implementing biodiversity conservation projects. Consulting with and reaching an agreement with relevant resource users, i.e. fishermen and villagers, and stakeholders, i.e. tourism companies, governmental line agencies and local governments, should be considered as prerequisites to the adoption of any conservation activity. MPA staff should be trained to moderate and facilitate such consultations.

R8 Further strengthen and increase multilateral and bilateral international cooperation and partnerships in marine biodiversity conservation to focus on intergovernmental policy dialogue, biodiversity conservation best practices, improvement of technical and management staff capacities through international exchanges, and knowledge management.

R9 When key project reports and technical documents and policy recommendations are not available in English, it would be useful to provide a short summary of the main decisions or main issues in English to enable international cooperation and exchange.

1 INTRODUCTION

1.1 Purpose of the terminal evaluation

In conformity with GEF-UNDP policies and procedures related to monitoring and evaluation, all medium and full size projects must be subjected to an independent terminal evaluation (TE) upon completion. The project was officially launched in November 2005 and was implemented over 6 years. Although its implementation was planned over 8 years, the terminal evaluation took place in September 2011 as the project has successfully achieved its objectives and expected closure was moved to end of 2011.

The terminal evaluation provides a comprehensive and systematic account of the performance of a completed project by assessing its design, relevance, process of implementation, and achievements vis-à-vis project objectives endorsed by the GEF, UNDP and the Government of China, including any changes in the intended results, as agreed during project implementation. The purposes of the TE are namely to promote accountability and transparency, to assess and disclose levels of project achievement, and synthesize lessons that may help improve the selection, design, and implementation of future activities. The results of this evaluation also contribute to the GEF Evaluation Office database to report on the effectiveness of GEF operations in achieving global environmental benefits. A TE is a learning exercise and an integral part of the project monitoring and evaluation cycle that supports accountability, informed decision-making, and learning from experience.

1.2 Methodology of the evaluation

The TE was conducted according to the ToRs (Annex 3) and latest GEF guidelines (2008). Ratings are provided as required by the GEF guidelines.

Results. The TE analyzes the project achievements and progress towards its objectives and intended results as stated in the project document while considering the factors which might have facilitated or hampered the attainment of objectives and expected results. Project results are assessed for their relevance (to country priorities and GEF/UNDP programs), effectiveness (in relation to intended results) and efficiency (cost effectiveness) and rated following this scale: highly satisfactory (HS), satisfactory (S), marginally satisfactory (MS), marginally unsatisfactory (MU), unsatisfactory (U) and highly unsatisfactory (HU).

Sustainability. The first indications of potential impacts and of the sustainability of outcomes are examined as well as the contribution to capacity development and global environmental goals. Sustainability is understood as the likelihood of continued benefits after the project ends. This is achieved through an assessment of four dimensions of the risks that are likely to affect the persistence of project outcomes: i) financial, ii) socio-political, iii) institutional and governance, and iv) environmental risks. These risks will be rated according to this scale: likely (L), moderately likely (ML), moderately unlikely (MU), and unlikely (U).

Replication. The replication or catalytic effect of the project is described but not rated.

Monitoring and Evaluation. The TE assesses the design (plan, indicators and studies), actual implementation, and budgeting/funding of the monitoring and evaluation plan. Quality of M&E design and of M&E implementation will be rated following the same scale used to rate the results. This analysis uses the set of indicators revised during the project implementation and used in the combined reports to UNDP and GEF (PIR).

Monitoring of long-term changes. This section describes the contribution of the project to establish long-term monitoring systems.

Processes affecting attainment of project results. These include preparation and readiness, country ownership, stakeholder involvement, financial planning, co-financing, and GEF agency supervision and backstopping.

Lessons and Recommendations. Based on findings, the evaluation presents lessons recommendations, notably on factors that contributed to foster or hinder the attainment sustainability of the project achievements, as well as lessons learnt to guide future interventions in similar contexts.

The assessment was based on the information acquired throughout the following tasks:

- Project document review, including progress and technical reports produced by the project – the list of consulted documents is provided in Section 10;
- Meeting with the PCU and UNDP representative for collecting information to appraise aspects related to the project preparation, implementation and achievements;
- A 10-day visit to the project intervention sites, to meet SIUs, local project partners and beneficiaries within the local community, as well as for seeing tangible achievements and project impacts. Translation was kindly performed by the project staff. The field visit itinerary is given in Annex 5. The list of people met is provided in Annex 4.
- Questions were prepared to guide interviews and the collection of relevant information on outcome indicators and on management issues (Annex 6).

The mission lasted 14 days between 14 and 27 of September 2011. The assessment was performed by a national consultant, Prof Liu Yonggong, and an international consultant, Dr Dominique Roby.

Limitations of the TE

Several technical documents developed as project outputs, such as the management plans of marine protected areas, new or revised legislative texts, biodiversity monitoring protocols, and revised urban development plans, to name only these, are written in Chinese, and thus could not be consulted nor commented on.

The PCU managed to organize a tour of project sites in the 5 provinces in a record time of 10 days which was quite a feat. With the idea of saving time, stakeholders were interviewed together in a large room. Although this proved to be effective as regards to time and coordination, this formal setup may not have been optimal as regards to sharing openly concerns and perceptions of shortcomings, especially for local community partners. Also, field visits were restricted by the limited time which prevented individual and household-level interviews, and by bad weather which prevented crossing over safely to Nanji Islands. Information on Nanji Islands interventions was provided through presentations, viewing a DVD, discussions and interviews with invited stakeholders from the Nanji Islands.

1.3 Structure of the evaluation

The evaluation presents the project and the context that led to its development (Section 2), and the findings related to results (Section 3), sustainability (Section 4), monitoring and evaluation (Section 5), monitoring of long-term changes (Section 6), project replication effect (Section 7), and processes affecting attainment of project results (Section 8). Lessons learned and recommendations are presented in the sections 9 and 10. Detailed information to document or complement different aspects of the evaluation is given in the annexes.

2 THE PROJECT AND ITS DEVELOPMENT CONTEXT

2.1 Project start and its duration

The UNDP/GEF/SOA SCCBD Project Document was approved by the governments of People's Republic of China in 2004 and was officially launched in Beijing in November 2005. The project was implemented over 6 years and was planned to close in December 2012. However, as the project had successfully achieved its objectives, the Regional Technical Adviser, in the PIR of 2010, recommended the Project Executing Agency to consider project closure by the end of 2011, provided SOA would adopt a firm strategy to further the project objectives and implement replication activities.

2.2 Context and issues addressed by the project

Global and national importance of biodiversity in the project sites

China's marine biodiversity -in terms of species number- accounts for one tenth¹ of the world's total, especially in the tropics and sub-tropics along the southern sea areas under the jurisdiction of the four provinces of Hainan, Guangdong, Fujian and Zhejiang and the autonomous region of Guangxi, where various habitat types host numerous globally important species.

The project demonstration sites include ecosystems that are representative of those found along the coastal area of the SCS, thus ensuring the replicability of the solutions developed in the demonstration sites to the whole area: mangroves, coral reefs, seagrass meadows, sandy beaches, islets and bays. These ecosystems provide critical habitats for the coastal and marine biodiversity such as migration corridor, spawning grounds, reproduction areas, nurseries and feeding areas. The services provided by the marine and coastal ecosystems of the SCS, such as storm protection, fisheries and aquaculture, are essential for the development, food security, and livelihoods of many coastal communities.

The project intervention sites in the SCS are highly significant for the conservation of species of global importance. Globally important migratory species occur in the Dongshan – Nan'ao migratory corridor: the near-threatened Chinese White Dolphin (*Sousa chinensis*), the critically endangered Hawksbill sea turtle (*Eretmochelys imbricata*) and Leatherback turtle (*Dermochelys coriacea*), the endangered Green sea turtle (*Chelonia mydas*), and the threatened Loggerhead sea turtle (*Caretta caretta*), in addition to nearly 30 marine mammal species. Of the four living species of horseshoe crabs, three are found in the project sites: *Carcinoscorpius rotundicauda* - the Mangrove horseshoe crab, *Tachypleus gigas*, and *Tachypleus tridentatus*. The Dugong (*Dugong dugon* - vulnerable to extinction) used to live in the seagrass habitat of the Hepu Dugong nature reserve where seven seagrass species are found, of which two are endangered. 46 stony coral species were identified around Weizhou Island. Shankou mangrove reserve includes 13 mangrove and mangrove-associated species. 180 bird species use the mangroves in Beihai (32 for nesting) including the critically endangered Black-face Spoonbill (*Platalea minor*) and Chinese Egret (*Egretta eulophotes*), and the Grey-headed Lapwing (*Vanellus cinereus*). Nanji islands harbour very high algae and shellfish diversity and productivity including numerous rare and locally endemic species, 1 horseshoe crab, 4 sea turtles, Chinese white dolphin and Finless porpoise. Corals around Hainan Island include about 110 hard coral species and 30 soft corals species, the coral cover reaching up to 70% in some areas, as well as 300 fish species, 300 invertebrate species and 60 benthic algae species.

Threats/challenges. Yet, this biodiversity and related marine habitats are under multiple threats and pressures which, if not properly and timely addressed, may jeopardize many of the services they provide. The rich coastal and marine resources support important industries such as fishing, maritime shipping, and oil and gas exploration, which jointly contribute to over 10% of China's overall GDP (2008 estimate)² and are growing at an annual rate of 15%. While SCS coastal areas recently experienced major demographic growth and economic development, large-scale land development, industrial and domestic limited wastewater infrastructure, increased international shipping activity which aggravates the risk of introducing alien invasive species, overfishing, and unsustainable resource uses seriously challenge the coastal zone ecosystems and biodiversity in this region. A recent UNEP document from the Regional Seas Conventions³ reported that land-based sources of pollution, namely nitrogen outflows from countries neighboring the South China Sea have increased significantly in the last 20 years, affecting water quality and ultimately species survival, reproduction, and growth. Socio-economic development mostly related to the development of coastal tourism and aquaculture put severe pressure in the conversion of coastal habitats to other use and has led to physical alteration and destruction of habitats, particularly of mangroves. These threats are compounded by the steady rise of sea surface temperatures induced by climate change which poses a significant problem for marine organisms such as corals that are unable to tolerate higher sea temperatures.

¹ In terms of species number in the world, China has 14% of fishes, 43% of the mangrove species 23% of seabirds and 14% of cephalopods.

² Qiu et al. 2009.

³ UNEP 2010.

Against this backdrop, China therefore established its coastal zone as a high priority area for management actions that strengthen ecosystem health and resilience through sustainable management of biodiversity, and supported the adoption and implementation of the SCCBD project.

2.3 Project objectives and intended outcomes

The project was designed to solve the environmental issues related to social and economic development through integrated management and sustainable use and to remove the threats to biodiversity in China's South Sea. Successful interventions of the project should enable stakeholders to practice an integrated management of coastal zones and adaptive management of marine protected areas to mitigate and prevent threats to the integrity of coastal ecosystems.

Project development objective⁴

As stated in the Project document: Conservation and sustainable use of coastal and marine biological diversity in four sites along China's coastline.

As formulated in the PIRs: To establish conservation and sustainable use through multi-stakeholder management of marine biodiversity at four demonstration sites, together with mechanisms for replicating these approaches across China's South Sea coastal area.

Immediate objectives / Intended outcomes

Immediate objectives and intended outcomes are formulated coherently as the reciprocal of each other in the Project document and in the PIRs:

Immediate objectives ⁵	Intended outcomes ⁶
(i) Strengthen conservation and sustainable use management capacities at four existing Marine Protected Areas;	Outcome 1: Conservation and sustainable use management capacities at four existing MPAs are strengthened
(ii) Develop, test and demonstrate tools, instruments and approaches for addressing the root causes of critical threats to marine biodiversity in China's South Sea coastal areas;	Outcome 2: Tools, instruments and approaches for addressing the root causes of critical threats to marine biodiversity in China's South Sea coastal area are developed, tested and demonstrated
(iii) Implement appropriate tools for conservation and sustainable use at six MPA sites and promote their broader adoption across China's South Sea coastal area	Outcome 3: Appropriate tools for conservation and sustainable use at the four sites and promote their broader adaptation across China's South Sea coastal area are implemented

The immediate objectives are formulated differently in the project Technical Report (2011):

1. To build up capacity for marine natural and ecological conservation by capacity building and trainings for the enhancement of the natural conservation capacity in the Nanji Site, the capacity for MPA conservation in the Sanya Site and the conservation and management capacity in Shankou-Weizhou Site;
2. To promote integrated coastal zone management and ecological conservation, with the focus on the demonstration of urban master plan of Nanji Town and the management and development of MPA with the development integrated coastal zone management in the Nanji Site, the demonstration of pollution control and the development of sustainable financial mechanism in the Sanya Site, the demonstration of the public participation and the development of sustainable livelihood and the development a new MPA with best international practices in the Shankou-Weizhou Site, the demonstration of interprovincial cooperation in the development of integrated coastal zone management and biodiversity conservation in the corridor waters in the Dongshan-Nan'ao Site.

⁴ The higher level objective to which a development intervention is expected to contribute (LFA term, equivalent to Goal).

⁵ The effect which is expected to be achieved as the result of the project.

⁶ The change that occurs if the project outputs are achieved / Outcomes are the likely or achieved short- and medium-term effects of an intervention's outputs.

3. To summarise experiences and lessons for the formulation of promotable models. Various sites have gradually developed promotable models for the coastal waters with similar threat inside and outside China through the evaluation of the outputs and outcomes from SCCBD by the stakeholders.

⇒ This latter formulation provided by the PCU in the final Technical Report still reflects the three components of the project strategy, yet it is more explicit as it integrates the specificity of the project intended outputs as they were stated in the project document.

2.4 Main stakeholders

Relevant stakeholders are all those who have been or are likely to be affected by the project or activity, those who have participated in or contributed to the project, and those who in other ways have a stake in the outcomes of the project or activity.⁷

Main partners are:

- Government agencies:
 - State Oceanic Administration (SOA) as the implementing agency,
 - Ministry of Finance as the executing agency;
 - the five governments of Hainan, Guangdong, Fujian, and Zhejiang Provinces and of Guangxi Zhuang Autonomous Region;
 - the Marine and Fisheries Bureaus at the provincial, municipal and county levels;
 - the administrations of 6 MPAs (Sanya National Coral Reef Nature Reserve, Nanji National Nature Reserve, Fujian Dongshan Coral Reef Nature Reserve, Guangdong Nan'ao Migratory Bird Nature Reserve, Hepu Dugong National Nature Reserve, Shankou Mangrove National Nature Reserve, Weizhou Island Special Marine Protected Area;
 - Municipal, county and town governments, county environmental protection bureaus;
 - Oceanic administrative offices, Ocean surveillance brigade (Guangxi), Marine monitoring and forecasting centre (Guangxi), Forestry Bureau (Beihai);
- Local organizations (e.g. NGOs in Beihai and Sanya), private enterprises and investors, including tourism and fisheries;
- Scientific and academic institutions: research institutes, SOA's Third Institute of Oceanography, universities, and rescue centers;
- Local educational institutions, middle schools;
- Local communities, resource users, private operators, and village conservation groups;
- US National Oceanic and Atmospheric Administration (NOAA) – co-funder;
- UNDP, as GEF implementing agency;
- Guangxi Stora Enso – co-funder;
- ESRI – co-funder (GIS software).

3 RESULTS

Results achieved by the project are presented and evaluated with regard to the development objective and intended outcomes, on the basis of the indicators used for reporting annually on the project progress (PIRs) and findings of the TE. The baseline corresponds to the year 2005. To highlight progress made in the final phase of the project, the results achieved by 2010 are presented next to the results achieved until September 2011.

⁷ GEF EO 2008.

3.1 Development objective - Assessment of progress, relevance, effectiveness and efficiency

Table 1. Project progress with regard to the development objective

Description of Indicator	Target Level	Baseline Level	Level at June 2010 ⁸	Level at September 2011
Development Objective: Conservation and sustainable use of coastal and marine biological diversity in four sites along China's coastline.				
1. Each of the four demo sites are being managed effectively by multi-stakeholder consultation mechanism at provincial and local levels	PSCs and SIUs at each five provinces and cities and an Inter-Provincial Coordination Committee between Fujian and Guangdong in effective consultation process for adaptive management.	No multi-stakeholder consultation mechanism at provincial and local levels	Long term monitoring protocols in operation in all four sites allowing well-trained technical staff to apply GIS in baseline data collection and regular monitoring benefiting from partnership with local academic institution. Inter-Provincial Action Plan between Guangdong and Fujian in full operation implemented by government co-financing.	<p>➤ Nanji: Stakeholder participation and adaptive management were the main principles that guided the revision of Nanji master plan. The opinions of the Nanji Reserve Administration, island residents, and socioeconomic and ecological experts were taken into consideration to ensure the conservation of globally significant marine biodiversity around the Nanji Islands, while achieving the sustainable development of local communities.</p> <p>➤ Sanya: The Advisory Committee of Sanya Demonstration Site in the early stage included provincial and municipal stakeholders for the most part involved with marine environment and resources, tourism, and finances. As the project addressed pollution reduction issues, additional actors involved with development and reform, finances, planning and construction, and water at the municipal level joined the committee, thus gathering together all relevant parties to constitute an effective platform to develop and agree on an integrated solution to pollution problems affecting coral health. After conducting a financial evaluation and a carrying capacity assessment, the decision was made to avoid developing hotels on the island.</p>
2. Biodiversity at four demo sites are managed sustainably through partnerships, co-management and other participatory mechanisms	To build up formal partnerships, co-management and other participatory mechanisms, especially at grass-root levels with local inhabitants	No formal partnerships, co-management and other participatory mechanisms have been built up	Co-management and other participatory mechanisms in operation, resulting in reduced illegal cases of harvesting and fishing and increased participation by communities in conservation activities. This is achieved at Nanji through long-term contracts between MPA of Nanji and local villagers.	<p>➤ The project interventions led to a major increase in public and authorities awareness and understanding of the importance of biodiversity, thus establishing a network of actors all contributing one way or another to the participatory or collaborative management (rather than comanagement) and conservation of biodiversity. As local resource users get to know the marine resources, better understand the importance of biodiversity and benefit from it, they get involved in decision-making processes regarding resource management and comply with conservation regulations.</p> <p>➤ Participatory management processes were developed in Nanji through contracts established between the MPA and villages, one contract per village, for a total of 12 contracts. According to these contracts, villagers commit to develop small-scale aquaculture with native species only, such as nori algae and abalone, act as rangers for the MPA and protect resources and environment on behalf of the government, and participate to research on species occurrence. On the other side, the MPA commits to provide technical support and supervision of aquaculture activities, contact with villagers once a month, and carry out participatory research on species distribution and occurrence, where they benefit from fishermen's knowledge about resources</p>

⁸ From PIR 2010

Description of Indicator	Target Level	Baseline Level	Level at June 2010 ⁸	Level at September 2011
				<p>and habitats.</p> <ul style="list-style-type: none"> ➤ In Shankou, the project helped establish a network of local stakeholders to collaborate in the management of the mangrove reserve. This network is composed of the Local Village Leaders, Village Conservation Groups (VCGs), Beihai Civil Volunteers Association, Beihai Mangrove Chorus, Shankou Mangrove High School and Shankou Yinbei Volunteer Primary School. To ensure the right of local communities to participate in the management of the MPA, the project has developed the <i>Regulations of the Villager Conservation Group of Shankou Reserve</i> and the regulations of a multi-participatory coordination committee. This network has been successful and achieved noticeable success in controlling illegal removal of mangrove trees and protection of other resources such as birds. ➤ A village leaders' network was set up as mangrove rangers based on the recognition of local chiefs' prestige and authority in their village, for a total of 12 rangers from the 12 villages located within 5 km from the mangrove. These rangers act as protection officers and contribute to awareness activities and patrolling in the mangrove. ➤ Village conservation groups (VCGs) established in 7 villages and gathering 200 members have contributed to the identification, development and promotion of profitable alternative livelihoods based on the sustainable use of mangrove resources. They coordinate volunteer patrolling of the mangrove and organize awareness activities ➤ The Mangrove Troup in Shankou promotes mangrove conservation and middle school children help remove bird nets in the mangrove and raise awareness about biodiversity conservation in their community. <ul style="list-style-type: none"> ➤ At the Dongshan-Nan'ao site, local fishermen associations held information sessions to educate fishermen about marine conservation and migratory species conservation. Outreach material and trainings on the biology and conservation of highly migratory species led to increased understanding of these species vulnerability and of the value of conserving marine wildlife, which resulted in <u>increased public participation</u> in the rescue of stranded animals, release of young fish into the marine environment, cleaning of marine debris, and removal of abandoned fishing boats. ➤ In Dongshan-Nan'ao, an inter-regional cooperation mechanism was established to harmonize the management of highly migratory species between two provinces. This approach allows taking into account the fluid and complex nature of the marine environment, the mobility of some marine species, and the fact that some biological and environmental issues must be managed beyond administrative boundaries. ➤ Joint MPA zoning and planning, joint law enforcement, harmonised fishing closure period, regular interprovincial coordination meetings, sharing information, etc., enhanced the migratory channel conservation effectiveness, reduced threats to biodiversity, and promoted the sustainable use of marine resources in a coordinated manner.

Description of Indicator	Target Level	Baseline Level	Level at June 2010 ⁸	Level at September 2011
				<p>➢ The Sanya Site consists of 3 separate areas covering 85 km² along the coast, close to the densely populated urban area of Sanya which is experiencing a rapid development of tourism, thus under heavy human pressure. 19 workers were employed through the project to ensure regular patrols over the 3 distant areas. To ensure a sustainable source of funding to cover salaries, allowances and office expenses required to carry out conservation and management operations beyond the project duration, a partnership was established between the reserve and tourism enterprises. The reserve developed 3 management branches corresponding to each area, in partnership with 10 tourism companies that provided funding, participated in periodic beach clean-up and eradication of crown-of-thorns starfish (<i>Acanthaster planci</i>). The MPA trained the staff of tourism companies to conduct monitoring activities. This public-private arrangement solved the issue related to lack of funding by transferring the responsibility of coral reef conservation on the tourism companies that benefit from them, and improved the management capacity of the Sanya Reserve as a whole.</p>
3. Land-based sources of pollution are reduced to 30-50% to that identified in the baseline survey reports at four demos sites	Land-based sources of pollution controlled and mitigated by ICM planning, sewage and solid waste treatment, publicity campaigns and other effective tools	Land-based pollution has been a major impact on the aquatic environments for biodiversity with global significance at four demo sites	<p>Land-based sources of pollution have been reduced 45% in terms of COD at two demo sites in accordance with the monitoring protocols developed by the project and local environment quality reports.</p> <p>In Sanya, several sewage treatment plant established with government co-financing are able to treat 10,000 tons of sewage every day. In addition, restructuring of agricultural production allows decreased use of nitrogen and phosphor. In Nanji, the township master plan incorporates reduction of COD discharge from urban sources. According to the plan, four sewage treatment stations are set up with daily treatment capacity of 50 tons co-financed by government.</p>	<p>➢ Sanya, see indicator 22.</p> <p>➢ Nanji Islands: Baseline surveys highlighted the major impact of wastewater discharge at sea on the intertidal ecosystem. This was addressed through the construction of 3 wastewater treatment plants (from Sanya model), the construction of a landfill and of a 400-meter wastewater pipeline network to reduce discharge of used waters and thus reduce threats to biodiversity. Sewage and solid waste treatment plants have reduced land based pollution, thus improving water quality and reducing the occurrence of red tides.</p> <p>➢ Dongshan - Nan'ao: Two wastewater treatment plants were built both in Dongshan and Nan'ao to reduce point source water pollution to the coastal areas of two islands. A public campaign "Cleaning the beach" launched at two project sites, reduced coastal pollution which significantly improved the marine environment in those sites.</p> <p>➢ Shankou - Weizhou: Over 50% of shrimp ponds in Shankou were turned into mudskipper and mud crab ponds, which greatly reduced mariculture-associated pollution. A waste collection and treatment system was built in Weizhou Island, which will reduce the pollution to the coral reef in the MPA.</p>
4. Ship-based sources of pollution or damage are reduced to non damaging	Reduction of Ship-based sources of pollution or damage	Ship-based sources of pollution or damage to coral reefs and other	According to project monitoring program, ship-based sources of pollution or	<p>Ship-based sources of pollution or damage to coral reefs and other biodiversity was reduced by the removal of fishing boats in project sites</p> <p>➢ At the Dongshan - Nan'ao site, a total of 669 abandoned fishing vessels</p>

Description of Indicator	Target Level	Baseline Level	Level at June 2010 ⁸	Level at September 2011
levels for biodiversity at all sites	by ICM planning and law enforcement and publicity.	biodiversity	damage to coral reefs and other biodiversity have been reduced by curtailing the number of fishing boats in service in project area. Strict law enforcement and public education have reduced the number of anchoring boats in coral reef sites in Sanya. 80% of local inhabitants in Xidao Island changed their jobs from fishing in coral reef areas to sustainable and non-consumptive use of natural resources through eco-tourism activities for generation of new and increased incomes.	were removed from the fishing ports in the year of 2009. > In Sanya , the number of fishing boats was drastically reduced as the households previously involved in fishing have shifted towards ecotourism as their livelihood. As a result of law enforcement and education, anchoring of fishing and tourist boats on coral reefs was reduced. > In Shankou , over 30 small wooden boats were involved in illegal tourism in the mangrove, damaged trees, disturbed birds, and did not meet safety requirements. As a result of the project intervention, the number of boats was reduced to 4 boats; captains are now trained on safety issues and mangrove protection, providing them the knowledge to educate tourists. > In Nanji Island, most villagers were fishermen. The government provided incentives to develop family-based ecotourism which reduced the number of fishermen and hence of boats.
<u>Additional indicator</u> Impact on biodiversity: Negative trends in focal species abundance and distribution area are reversed or stabilized in every demonstration site				> In Shankou , 59.9 ha of mangrove was planted (afforestation) with a 60% survival rate, providing habitats namely for migrating birds. While a previous attempt to restore seagrass through transplantation was not successful (20 hectares of seagrass, 0% survival), the project opted for an in-situ natural restoration through improved management and habitat conservation rather than transplantation – as a result, the coverage of the seagrass <i>Halophila ovalis</i> increased from 1% to 2% in a 32-ha habitat. A plant nursery was established in 2006 at the Guangxi Mangrove Research Centre to produce seedlings for 10 threatened and 34 important coastal species, notably through tissue culture. With the seedlings supplied by Guangxi Mangrove Research Center under the support of Stora Enso, the total area of mangroves has increased from 730 ha at project inception to 818.8 ha according to satellite image-based information. Through the introduction of participatory management practices and increased awareness related to the mangrove branding marketing approach, destructive resource uses such as mangrove removal, bird hunting, non sustainable collection of worms and crabs have practically stopped in the core area of the Shankou Nature Reserve. Bird catching nets were eliminated since 2007. 19 water buffalos whose saliva is toxic for mangrove leaves were removed and replaced with milking cows. Over 50% of shrimp ponds were turned into mudskipper and mud crab ponds, which greatly reduced pollution. Efforts were made to restore mangroves in abandoned shrimp ponds. Traditional starworm collection practices were harmful for mangrove roots and have been improved through education to adopt sustainable collection practices.

Description of Indicator	Target Level	Baseline Level	Level at June 2010 ⁸	Level at September 2011
				<p>The number of bird species recorded has increased from 139 in 2000 to 187 in 2008. The presence of the Black-face Spoonbill was witnessed by a specialist as well as the increased occurrence of wild ducks. Among marine species, monitoring surveys indicated the occurrence of sea cucumber which is a positive indication.</p> <p>➤ In Nanji Islands, the declining trend of shellfish biomass and population density is stabilized as a result of the improved management of the MPA. The technique for restoration of <i>Sargassum horneri</i> was demonstrated and 2 beds of about 100 m² were restored, providing a habitat for fish larvae and shrimp species, creating a shelter to avoid predators and a favourable feeding and spawning habitat. At the same time, these algae absorb the nutrients in the water such as nitrogen and phosphate, thus reducing aquaculture-related pollution. A close relationship was observed between the <i>Sargassum horneri</i> ground and the health of shellfish and algae.</p> <p>➤ In Sanya, GIS-based surveys allowed the identification of marine biodiversity hotspots and selection of optimal sites for coral transplantation. Over 4000 coral fragments of <i>Goniastrea</i> were transplanted over 1 hectare with a survival rate of 95% after one month and a growth rate of 1.4 cm/6 months. <i>Acropora</i> corals were transplanted on pyramid blocks.</p> <p>➤ At the Dongshan-Nan-ao site, sightings of over 200 Chinese White Dolphin were reported, which had not occurred in many years. The removal of mariculture facilities freed the passage of migratory species. The reduction of point source pollution affecting the coastal area and the removal of marine debris and litter on beaches improved the water quality as well as the quality of the coastal habitat for turtles and horseshoe crabs.</p>
Assessment of relevance				HS
Assessment of effectiveness				S
Assessment of efficiency				HS

Note: The project relevance, effectiveness and efficiency are rated according to the following indices: **HS** - highly satisfactory, **S** - satisfactory, **MS** - marginally satisfactory, **MU** - marginally unsatisfactory, **U** - unsatisfactory, **HU** - highly unsatisfactory

3.2 Outcomes – Assessment of progress, relevance, effectiveness and efficiency

3.2.1 Outcome 1

Table 2. Project progress with regard to the intended outcome 1

*Note: The project relevance, effectiveness and efficiency are rated according to the following indices: **HS** - highly satisfactory, **S** - satisfactory, **MS** - marginally satisfactory, **MU** - marginally unsatisfactory, **U** - unsatisfactory, **HU** - highly unsatisfactory*

Indicator	Target Level	Baseline Level	Level at June 2010	Level at September 2011
Outcome 1: Conservation and sustainable use management capacities at four existing MPAs are strengthened				
10. Baseline survey report available , long term monitoring plan and GIS system in operation at Dongshan –Nan’ao Site	Baseline survey report available , long term monitoring plan and GIS system in operation	No Baseline survey , long term monitoring plan or GIS system	Baseline survey report available with the improvement by operational monitoring plan and GIS system, especially with the distribution maps of migratory species such as Chinese white dolphin and horseshoe crab.	<ul style="list-style-type: none"> ➢ Enhanced conservation capacities at Dongshan – Nan’ao site include the availability of a baseline survey report and improved capacity for GIS-based biodiversity monitoring and threat assessment which allowed the production of maps of the distribution of migratory species such as the Chinese White Dolphin, marine turtles and horseshoe crabs.
11. Formulation of fishermen associations and publicity campaigns with meetings, outreaches and other forms for fishery communities and pupils at Dongshan-Nan’ao Site.	Training of over 1000 fishermen and pupils ,distribution of over 5000 outreaches and VCDs and posters	Inadequate fishermen associations and no publicity campaigns.	Over 1,000 MPA staff, fishermen, aquaculturalists and primary school students have been trained, and more than 8,000 outreach materials and VCDs and posters are distributed. These outreach and training activities led to increased understanding of the biology and ecology of migratory species and skills in conducting regularly joint efforts by local people between the neighboring provinces.	<ul style="list-style-type: none"> ➢ Outreach material and trainings on the biology and conservation of migratory species for marine and fisheries administration, MPA staff, fishermen, aquaculturalists and primary school students led to an increased understanding of the vulnerability of these species and of the value of conserving marine wildlife – this resulted in <u>increased public participation</u> in the rescue of stranded animals, release of young fish into the marine environment, cleaning of marine debris, and removal of abandoned fishing boats. A total of 669 abandoned fishing vessels were removed from the fishing ports at the site. ➢ Local fishermen associations held information sessions to educate fishermen about marine conservation and migratory species conservation ➢ A lecture by experts organized for the followers of Buddhism -who like to rescue sea turtles and release stranded animals- to improve their understanding of such interventions and avoid releasing alien invasive species. ➢ Summer camps on marine biodiversity conservation were attended by 120 students from the 2 provinces and received over 2000 student visitors. ➢ According to project surveys, the level of approval of marine biodiversity conservation among target groups raised from 6.7% in 2006 to 25.9% in 2011 as a result of project awareness activities.
12. Developing <u>long-term program for biological monitoring</u> , establishing and operate two biodiversity monitoring stations and strengthening Sanya	Long-term program for biological monitoring in operation and MPA staff capacity built.	No long-term survey and monitoring program, inadequate biodiversity monitoring stations lower capacity of Sanya MPA staffs	A long-term program for biological monitoring protocols at 3 stations is operational. MPA staff is able to monitor the protocol after GIS and inventory trainings organized by the project.	<ul style="list-style-type: none"> ➢ As conservation capacities were strengthened at Sanya MPA, GIS-based surveys on species distribution and enhanced capacity for coral reef monitoring led to the identification of marine biodiversity hotspots, of an increased number of coral species, of critical threats (land-based pollution) to coral reefs and mitigation measures, of more relevant monitoring sites, and to the demonstration of the importance of the site for coral recruitment.

Indicator	Target Level	Baseline Level	Level at June 2010	Level at September 2011
MPA enforcement by training and better equipping MPA staff.				
13. Conduct comprehensive <u>baseline survey of coral reef</u> conditions and species distributions within the reserve and develop GIS-based maps of biodiversity hotspots in MPA for use by managers at Sanya Site	A comprehensive baseline survey of coral reef conditions and species distributions made and assessment, GIS-based maps of biodiversity hotspots in MPA prepared	No comprehensive baseline survey of coral reef conditions and species distributions within the reserve and no GIS-based maps of biodiversity hotspots in MPA,	A comprehensive baseline report identifying 81 species of reef building coral prepared, GIS-based biodiversity hotspots mapped and used as a tool for monitoring the changes. The results indicate that the situation has been maintained at the site.	
14. Conducting pilot <u>coral reef restoration</u> in pilot areas and monitoring new coral growth in restoration by identifying healthy reef areas and introducing best practices worldwide at Sanya Site.	A survival rate of over 90% of the coral transplanted	Inadequate coral reef restoration and no assessment of growth in restoration as no best practices worldwide have been applied.	Survival rate of over 95% for 4000 fragments of coral transplanted. They are growing well at the transplanted site. The results have gained great support from the provincial government as the Hainan Government has distributed more than one hundred million of RMB for coral reef reproduction and ecological restoration.	<ul style="list-style-type: none"> ➢ GIS-based surveys allowed the identification of marine biodiversity hotspots and selection of optimal sites for coral transplantation. Over 4000 coral fragments were transplanted with a survival rate of 95%.
15. <u>Baseline</u> survey report available, long term monitoring plan and GIS system in operation at Shankou Site	Baseline survey report available , long term monitoring plan and GIS system in operation	No baseline survey, long term monitoring plan or GIS system	Baseline for mangrove, seagrass and coral reef established for long term assessment of biological and biotic status in accordance to the monitoring protocols for seagrass, mangroves and coral reefs. GIS in operation for improved management and publicity to stakeholders. A Survey Report for Baseline Biodiversity in the Tieshan Port which consists of three sub-reports under the public-private partnership between SCCBD and Stora Enso at Shankou Site is available.	<ul style="list-style-type: none"> ➢ Strengthened conservation capacities at Shankou Mangrove Reserve and Dugong Reserve include improved capacity for GIS-based biodiversity monitoring and threat assessment, and participatory MPA delimitation, planning and management. ➢ A baseline study on mangrove, seagrass and coral reef resources provides a reference for long-term monitoring. ➢ Supported by the baseline study co-sponsored by SCCBD and Stora Enso, the Guangxi Marine and Oceanic Department has integrated the conservation of mangroves, sea grasses, and coral reefs into the <u>Beibu Gulf Economic Zone Development Plan</u>, approved by the State Council and implemented. ➢ Increased awareness of the importance of mangroves led to reduced cases of violation and mangrove removal.
16. Organize <u>VCGs</u> and conduct various socioeconomic surveys to recommend <u>alternative</u>	VCGs and public participated ranching organized and alternative livelihood	No VCGs organized , no socioeconomic surveys made and no alternative livelihood	Seven VCGs, each in one village, with a total number of 200 members, are in operation. The market-based approach	<ul style="list-style-type: none"> ➢ Village conservation groups (VCGs) represent a new type of partnership among MPA stakeholders to reduce and prevent threats to biodiversity in a MPA. VCGs are established in 7 villages and gather 200 members (20% women, 80% men), mostly teachers, students, retired workers, and villagers. Their major

Indicator	Target Level	Baseline Level	Level at June 2010	Level at September 2011
<u>livelihood</u> for villagers around Shankou Site	recommended for villagers.	recommended for villagers around Shankou Site	adopted by this site has successfully promoted the use of a 'mangrove brand' for the marketing of duck eggs and honey produced in mangrove areas at community level to generate additional income. As a result, mangrove brand products such as mangrove brand duck eggs, mineral water, honey, and fish sauce, etc. are becoming well known as green foods. The proposed 900 million investments in mangrove hot spring, which is still ongoing, is able to provide employment opportunity to over 100 villagers living in close vicinity to the PA.	tasks are to help coordinate the management of the mangrove, coordinate volunteer patrolling of the mangrove, organize awareness activities, help carry out MPA-related tasks, and contribute to the identification, development and promotion of profitable alternative livelihoods based on the sustainable use of mangrove resources. One group is mainly involved in learning and exchange activities and the other group is conducting patrols.
17. Publicity campaigns launched for various stakeholders by meetings, dissemination of outreaches, lobbying and consultations at Shankou Site	Higher support for the conservation of mangrove, seagrass and coral reefs at the site from various stakeholder, especially the local governments	Inadequate publicity campaigns	The conservation of mangroves, sea grasses, and coral reefs is integrated into "Beibu Gulf Economic Zone Development Plan", approved by the State Council and under operation. A special financial support of 8.6 million Yuan was allocated for infrastructure and capacity building in SNMR. One million RMB was allocated by the Ministry of Finance to build a management station in HNDR. The projects with these financial inputs are under operation. With such a great input, the management capacity at the site has been greatly improved with the introduction of best practices from the world by SCCBD. The Mangrove Reserve has just passed the 10 year assessment by MAB China.	<p>➢ Supported by the baseline study co-sponsored by SCCBD and Stora Enso, the Guangxi Marine and Oceanic Department has integrated the conservation of mangroves, sea grasses, and coral reefs into the <u>Beibu Gulf Economic Zone Development Plan</u>, approved by the State Council and implemented. Management and Law Enforcement Plan for Weizhou Coral Reef Marine Special Protected Area, Monitoring and Science Plan for Weizhou Coral Reef MPA, Development Plan for Weizhou Coral Reef MPA, Survey Report for Public Participation in Weizhou Coral Reef MPA have been submitted to the authorities and are under review.</p> <p>➢ As a result of education programs in primary and middle schools, children contribute to increase awareness of villagers about the importance of mangroves, to enforce mangrove protection and to educate their parents about conservation.</p>
18. Building public-private partnership with local industries for the conservation of	Public-private partnership with local industries for the conservation of	No public-private partnership with local industries for the conservation of	A public-private partnership has been built with Stora Enso Guangxi and SSCBD which led to co-financing by the former in	➢ A public-private partnership was established between the project and Guangxi Stora Enso, which is affiliated to Stora Enso group, a Finnish-Swedish pulp and paper manufacturer among the world's largest pulp and paper manufacturers. Guangxi Stora Enso contributed 230,000 USD to the project to 1. Develop

Indicator	Target Level	Baseline Level	Level at June 2010	Level at September 2011
mangroves, seagrass and coral reefs at Shankou Site.	mangroves, seagrass and coral reefs built up and operated.	mangroves, seagrass and coral reefs.	the amount of \$230,000 in inventory of coastal biodiversity in the area of Tieshangang, the pulp site of the Stora Enso venture. Nursery and restoration of endangered and degraded botanical biodiversity with multi-participatory mechanism in the Shankou MPA supported by Stora Enso is successful with promising market potential in Guangxi and other provinces.	Biodiversity Strategy and Action Plan, 2. Conserve and Restore Biodiversity in the area of Tieshangang where the company is conducting its operations, including a. Development of coastal biodiversity monitoring protocol; b. Restoration of key forests and mangrove habitats; c. Development of economic and financial incentives for local villagers to conserve biodiversity, and 3. Implement project activities. Through this partnership, a Biodiversity baseline survey in Tieshan Port, a Report on the Environmental Impact Factor Caused by Paper Factory Operation, and a Report on Biodiversity Monitoring Indicators were produced. Supported by this baseline study developed through this partnership, the Guangxi Marine and Oceanic Department has integrated the conservation of mangroves, sea grasses, and coral reefs into the <u>Beibu Gulf Economic Zone Development Plan</u> , which has been approved by the State Council and is now implemented. As part of the restoration of key forest and mangrove habitats, Stora Enso has successfully supported multi-participatory mechanism in the Shankou MPA for the establishment of a nursery and the restoration of rare and endangered plant species which hold promising market potential in Guangxi and other provinces.
5. Indicated number of MPA boundary buoys, fences, markers and warning boards and motoring stations are in place and communication facilities in operation at Nanji Site. Intrusion into core zone reduced	MPA boundary buoy ,fence, markers and warning boards and motoring stations are in place and communication facilities in operation at Nanji Site Intrusion into core zone reduced	No boundary buoy and fence, boundary markers, warning boards and motoring stations and with inadequate communication facilities at Nanji Site. Intrusion into core zone happened.	MPA boundary buoy and fence of total 3935m ,16 boundary markers, 12 warning boards and 6 motoring stations maintained and, in case damaged ,repaired; Two sets of windmills producing 1000 watts of powered installed and put into operation. Communication facilities with GEF input by SC-13 at Nanji Site in operation; Intrusion into core zone maintained zero.	<ul style="list-style-type: none"> ➢ Enhanced conservation capacities at Nanji site include improved patrolling and more effective law enforcement (faster response) which result in significantly reduced infringement on MPA core zone by fishermen and tourists, and illegal mining of corals and destructive fishing practices have practically stopped, thus reducing the threats to biodiversity in the reserve ➢ GIS-based planning and biodiversity monitoring have improved MPA management capacity and efficiency. ➢ The trainings provided by the project allowed MPA staff to have a better understanding of the purpose of their work. ➢ As local resource users know the marine resources and better understand the importance of biodiversity, they get involved in the decision-making process regarding resource management and comply with conservation regulations. ➢ After participating to educational activities on marine biodiversity, school students convey conservation messages into their homes and to their parents.
GEF Tracking Tool score SP1 'Strengthening PA management'	The GEF tracking tool show a positive trend against baseline			Nanji: 50 in 2005, 60 in 2009, 77 in 2010
Assessment of relevance				HS
Assessment of effectiveness				S
Assessment of efficiency				HS

3.2.2 Outcome 2

Table 3. Project progress with regard to the intended outcome 2

Indicator	Target Level	Baseline Level	Level at June 2010	Level at September 2011
Outcome 2: Tools, instruments and approaches for addressing the root causes of critical threats to marine biodiversity in China's South Sea coastal area are developed, tested and demonstrated				
19. The use of biodiversity overlays in planning is demonstrated at Nanji Site	Use of biodiversity overlays in planning is demonstrated at Nanji Site	Town planning without full consideration of biodiversity conservation	The existing township master plan has been reviewed and the gaps and its impacts on biodiversity have been identified, the output have been used for the revision of the township master plan which will be submitted to the authorities for adoption. The newly developed Rules for the Conservation and Management of 2nd and 3rd Grade Intertidal Zone and is developing Rules for Enclosed Conservation are in operation. The Rules for the Management of Fishing Permits, and the Rules for the Management of Passenger Boats are in operation.	<ul style="list-style-type: none"> ➢ GIS-based data and maps have enabled sound decision-making on the basis of multi-sector information collected through baseline studies, to mitigate potential negative impacts related to the implementation of the township master plan. Use of GIS-based information allowed integrating marine biodiversity hotspots and marine resource utilization into the township master plan, identify key monitoring stations for long-term ecological monitoring, control mariculture development and guided the decisions to remove mariculture facilities around the MPA core zone and to cancel the project for building an airport for helicopters. ➢ The revision of township master plan has highlighted the elements of biodiversity conservation and included recommendations with respect to social economic development strategy, industrial planning, land use and ecological conservation including strict control of mariculture development and removal of mariculture from core zone, etc. The development of related regulations has promoted the conservation of shellfishes and algae at the site following the approach of ICM. ➢ Mainstreaming of biodiversity conservation into development plans and recommendations to revise the Nanji urban development plan will reduce the pressure on marine biodiversity caused by the fast local community development. This mainstreaming will ensure that township government allocates financial resources to support marine biodiversity conservation and integrated coastal zone management. ➢ Community stakeholders involved in the identification and implementation of conservation activities will ensure the sustainability of the project outcomes. ➢ The technique for restoration of Sargassum was demonstrated and 2 beds of about 100 m² were restored, providing a habitat for shrimps and fish larvae.
20. Water reservoir, plant ,water supply network , power supply system , sanitation system and 200 more dustbins in operation with Gov. funding at Nanji Site	Water , power and sanitation systems in operation at Nanji Site	Inadequate water and power supply and sanitation system at Nanji Site	A water supply system has been designed and being built for improving water supply and sewage treatment for Nanji. Dustbins easily accessible and use are deployed in the areas open to tourists.	<ul style="list-style-type: none"> ➢ Sewage and solid waste treatment plants have reduced land based pollution, thus improving water quality and reducing the occurrence of red tides.
21. Inter-provincial cooperation is	A strong and formalized inter-provincial	Weak inter-provincial cooperation is	Fujian and Guangdong Marine and Fishery	<ul style="list-style-type: none"> ➢ The project facilitated Fujian-Guangdong interprovincial collaboration and coordination mechanism for conserving the marine environment and protecting

Indicator	Target Level	Baseline Level	Level at June 2010	Level at September 2011
demonstrated at Dongshan-Nan'ao Site	cooperation is demonstrated at Dongshan-Nan'ao Site	demonstrated at Dongshan-Nan'ao Site	Departments have adopted the Action Plan and joint actions taken in law-enforcement and publicity campaigns and the sea use zonation scheme between two neighboring counties compared and integrated. This task has been successfully accomplished. A report for revision legislation system for marine biodiversity conservation is available for submission to the provincial governments concerned for adoption.	migratory species in Dongshan-Nan'ao MPA. Through the establishment of an interprovincial coordination committee, this cooperation allowed developing a common understanding of critical issues for harmonized planning of conservation and restoration measures and joint law enforcement. <ul style="list-style-type: none"> > The legal frameworks of the two provinces and cities were analysed to coordinate habitat conservation measures for the protection of migratory species. > As a result, joint MPA zoning and planning, joint law enforcement, harmonised fishing closure period, regular interprovincial coordination meetings, sharing information, etc., further enhanced the migratory channel conservation effectiveness and promoted the sustainable use of marine resources in a coordinated manner. > Sewerage treatment plants were built both in Dongshan and Nan'ao to reduce point source water pollution to the coastal areas of two islands. A public campaign "Cleaning the beach" launched at two project sites, reduced coastal pollution which significantly improved the marine environment in those sites; > The project interventions led to a major increase in public and authorities awareness of the importance of biodiversity, thus establishing a network of actors all contributing one way or another to biodiversity conservation. > The interprovincial cooperation for marine biodiversity conservation and increasing awareness for mangrove conservation through the development of commercial brand of mangrove have been listed as models in the UNDP/GEF Annual Global Efficiency Assessment Report of Biodiversity for 2007-2008.
22. Integrated pollution control is demonstrated at Sanya National Coral Reef Nature Reserve (SNCNR)	Sewage of 300 people at Luhuitou mainstreamed into the sewage system. or relocate the local inhabitants and turn the area into a public zone. Impacts on coral health from land based and ship pollution reduced to the level without harm and the improper and devastating fishing activities or overfishing and tourism diving or boating activities on corals minimized.	Sewage of 300 people at at Luhuitou not yet mainstreamed into the sewage system. Land based and ship pollution, improper and devastating fishing or overfishing and tourism diving or boating activities have brought damage to corals.	Sewage treatment plant covering more than 300 people has been built by Sanya Government at Luhuitou. The proposal for relocating local inhabitants is in implementation. Land based pollution reduced by developing sewage system and ship pollution, improper and devastating fishing activities or overfishing and tourism diving or boating activities on corals minimized by more strict law-enforcement, publicity and public-private partnership with Taxiaodongtian, a tourism attraction in Nanshan area of Sanya.	<ul style="list-style-type: none"> > GIS-based surveys on pollutants, pollution source and pollution level were conducted to understand the spatio-temporal evolution of <i>Scleractinian</i> coral in relation to pollutants and pollution levels. > Point and non-point source types of pollution were distinguished for planning differentiated management of pollution and prevent discharge in the Sanya Reserve. There was a wide range of sparsely distributed pollution sources from agriculture, mariculture operations at sea, and from discharge of untreated used waters. > The ICM approach adopted in Sanya involves local regulations concerning the marine environment and coral reef protection, and the collaboration and coordinated action of operational departments to establish a system to control discharge and restrict polluting activities. An action plan to reduce pollution was developed and submitted to the Advisory Committee, and will be gradually implemented. Measures were adopted to i) decrease the downtown sewage, ii) reduce pollution sources at sea through a scientific management of mariculture activities, collection of ship garbage and collection of oily wastewater, and iii) reduce agricultural runoff through implementing agricultural methods that enhance water conservation. > Sanya city government invested to build and upgrade two sewage treatment plants (Luhuitou and Hongsha) in 2009 with a total treatment capacity of 90,000 tons/day and covering 25 km² city resident area. A series of measures were implemented including a distribution network to allow reuse of treated water.

Indicator	Target Level	Baseline Level	Level at June 2010	Level at September 2011
				<p>The plan also proposed higher wastewater treatment fee, gradient charge system, increase of benefit of using treated water and government subsidies. This contributed greatly to control pollution from the area that has the greatest impact on Sanya Coral Reef MPA.</p> <p>➢ Accordingly, water quality monitoring indicators indicate that land-based sources of pollution were significantly reduced. Also, pollution impacts from mariculture and restaurants on the sea were effectively reduced and the threat to the coral reef ecosystem posed by pollutants was reduced.</p>
23. Sustainable financing and the effective use of economic instruments for marine environmental protection are demonstrated at Sanya	Sustainable financing and the effective use of economic instruments for marine environmental protection are demonstrated at Sanya	No sustainable financing mechanism for MPA is established	Sea user fee in the amount of RMB 600,000 for 2010 has been earmarked in support of monitoring system operation of Sanya MPA from Hainan Province. The feasibility study of establishment of sustainable financing mechanism from sea user fee on a yearly basis has been finished in Sanya and submitted to provincial ocean and fishery bureau.	<p>➢ Sustainable financing mechanisms were developed to support MPA operational recurrent costs. Based on the assessment of operating costs, a financing pattern was proposed which relies on government funds as a major source of funds, complemented by sea use fees (for coral reef use by tourism enterprises) and public donations. The contribution from sea use fees was estimated from an assessment of users' willingness to pay. Sanya Development and Reform Commission and Sanya Finance Bureau have cooperated in making a proposal to the authorities for using sea use fees collected annually to bridge the shortfall for MPA operation and management costs. A proportion of the sea use fees (from the tourism industry) is earmarked to support MPA operational costs.</p> <p>➢ A pilot "multi-win" public-private partnership was established, i.e. government, local tourism enterprises and communities, to provide manpower, finance and facilities for the management of the MPA. Through this partnership, the MPA gets funds, tourism enterprises make profit through their use of biodiversity resources (tourism), and fishermen benefit from alternative livelihoods related to tourism, thus reducing the impact on coral reefs and their resources. Through negotiations, the Sanya Reserve and enterprises signed a cooperation agreement which specifies respective rights and obligations, and allows enterprises, upon approval, to obtain a special permit to carry out ecotourism activities in the coral reef reserve. The three areas of the reserve receive annually over 6 million tourists, resulting in significant profits for the tourism enterprises. In 2005, the total budget for staff (6 employees) / office and project expenses was 652,000 RMB and in 2009, amounted to 1.5 million RMB for the same staff number. Increased funding, participatory management (patrolling) with staff hired by enterprises and sea area use fees provided sufficient funds to support research and coral rehabilitation.</p> <p>➢ This partnership led to benefits for both biodiversity conservation and community development, and is a demonstration of a successful conservation approach based on the sustainable use of natural resources. Since the establishment of partnership with tourism companies, submarine site-seeing activities have been organized which put an end to the unintentional entry into the core zone. With enhanced enforcement and cooperation in monitoring, there is much less coral mining but some fishing is still occurring in the coral reef area.</p>

Indicator	Target Level	Baseline Level	Level at June 2010	Level at September 2011
24. Participatory co-management and sustainable harvesting strategies involving local communities are demonstrated at Shankou Mangrove Natural Reserve	Participatory co-management and sustainable harvesting strategies involving local communities are demonstrated at SMNR	No sustainable harvesting strategies exist and co-management with local communities weak	Participatory co-management and sustainable harvesting strategies has been developed by arrangements between the MPA and seven VCGs, each in one village, with a total of 200 members. They are carrying out daily ranching in the MPA, resulting in a reduction of 80% of bird-catching nets at the Site. Three Training Classes for VCGs run with good results for co-management. These activities continue to improve conservation at the site. In addition, a Base for Mangrove Education has been built up in Yingbei Primary School to provide service not only to students but also to villagers and tourists.	<p>➢ In Shankou, the project helped establish a network of local stakeholders to collaborate in the management of the mangrove reserve. This network is composed of the Local Village Leaders, Village Conservation Groups (VCGs), Beihai Civil Volunteers Association, Beihai Mangrove Chorus, Shankou Mangrove High School and Shankou Yinbei Volunteer Primary School. To ensure the right of local communities to participate in the management of the MPA, the project developed the <i>Regulations of the Villager Conservation Group of Shankou Reserve</i> and the regulations of a multi-participatory coordination committee. This network has been successful and achieved noticeable success in controlling illegal removal of mangrove trees and protection of resources such as birds.</p> <p>➢ The village leaders' network was based on the recognition of local chiefs' prestige and authority in their village, and gathered 12 rangers from the 12 villages located within 5 km from the mangrove. These rangers contribute to awareness/education activities and patrolling in the mangrove.</p> <p>➢ Village Conservation Groups (VCGs) were set up in 7 villages with 200 registered members as platform for enabling community stakeholders' participation. They coordinate volunteer patrolling of the mangrove, organize awareness activities, and contribute to the identification, development and promotion of profitable alternative livelihoods based on the sustainable use of mangrove resources.</p> <p>➢ Beihai Volunteer Association, a local NGO is involved as a platform to constitute an efficient link between the project and local actors and for involving them and raising their awareness.</p> <p>➢ The Mangrove Troup in Shankou promotes mangrove conservation and middle school children help remove bird nets in the mangrove and raise awareness about biodiversity conservation in their community.</p> <p>➢ Resource use patterns were changed to ecotourism and cultural tourism to provide biodiversity conservation benefits while improving livelihoods. Through contracts, eco-tourism operators, direct resource users, mariculturists, village rangers, and VCGs got involved in the patrol and protection of the mangrove. In return, they were allowed to use mangrove resources for commercial purposes in conformity with the reserve conservation and sustainable management objectives. Non-destructive farming practices included shrimp ponds developed outside mangrove areas and raising ducks on mangrove beaches. Over 50% of shrimp ponds were turned into mudskipper and mud crab ponds, which greatly reduced pollution. Efforts were made to restore mangroves in abandoned shrimp ponds. Traditional starworm collection practices were harmful for mangrove roots and have been improved through education to adopt sustainable collection practices. 19 water buffalos whose saliva is toxic for mangrove leaves were removed and replaced with milking cows.</p> <p>A marketing approach based on "mangrove" branding increased contracting producers benefits for environment-friendly mangrove-related products (mineral water, duck eggs, honey, sweet potatoes, mangrove fruit, etc.). As an example, 2000 mangrove ducks provide an income of 200,000 RMB/year. Eggs are sold at twice the price of regular duck eggs.</p>

Indicator	Target Level	Baseline Level	Level at June 2010	Level at September 2011
25. An effective process for establishing a new MPA, with international support is demonstrated at Weizhou Island	An effective process for establishing a new MPA, with international support is demonstrated at Weizhou Island	Weizhou Island with coral reef not protected by an MPA	The following reports:- Management and Law Enforcement Plan for Weizhou Coral Reef Marine Special Protected Area, Monitoring and Science Plan for Weizhou Coral Reef MPA, Development Plan for Weizhou Coral Reef MPA , Survey Report for Public Participation in Weizhou Coral Reef MPA have been submitted to the authorities and are in the process of examination.	<ul style="list-style-type: none"> ➢ SCCBD supported the elaboration of the Weizhou Island Biodiversity Management Plan. ➢ The initial objective was to establish the Weizhou Island Coral Reef Reserve. However, the economic development of Beibu Gulf was raised at the level of a national strategy, which could jeopardize the achievement of this target. It was therefore decided to adjust the target to the establishment of the Special MPA Weizhou Island. This status has less stringent criteria and thus is more likely to be accepted in the current context. Recommendations to establish the Weizhou Island Special MPA were prepared and submitted to provincial government for approval. The establishment of this MPA will strengthen the biodiversity conservation component of the Beibu Gulf Development Plan approved by the national government. ➢ The document on the establishment of a MPA includes the elaboration of management and law enforcement plans, monitoring plan, development plan, and survey report for public participation. ➢ A waste collection and treatment system was built in Weizhou Island, which will reduce the pollution to the coral reef in the MPA.
Assessment of relevance				HS
Assessment of effectiveness				S
Assessment of efficiency				HS

3.2.3 Outcome 3

Table 4. Project progress with regard to the intended outcome 3

Indicator	Target Level	Baseline Level	Level at June 2010	Level at September 2011
Outcome 3: Appropriate tools for conservation and sustainable use at the four sites and promote their broader adaptation across China's South Sea coastal area are implemented				
26. Stakeholders at each site have learned from the demonstrated conservation approaches and are ready to apply the newly acquired capacity to their areas	Stakeholders at each site have learned from the demonstrated conservation approaches and are ready to apply the newly acquired capacity to their areas through roundtable meetings, dissemination of outreaches and other means	Stakeholders at each site are ready to apply the newly acquired capacity to their areas	Eight roundtable meetings organized at four sites and different lesson in MPA monitoring and assessment, financing and community co-management summarized and disseminated.	<ul style="list-style-type: none"> ➢ Pilot initiatives were monitored locally and evaluated yearly through annual workshops. Annual joint meetings, thematic cross-learning workshops among sites, and inter-site study tours allowed experience sharing among SIUs, governmental institutions, enterprises, communities and other stakeholders, and enabled the adaptation and implementation of successful approaches.

Indicator	Target Level	Baseline Level	Level at June 2010	Level at September 2011
27. Stakeholders at each site adapt and implement appropriate measures for conservation and sustainable use	Appropriate measures for conservation and sustainable use are adapted and implemented at each site.	Inappropriate measures for conservation and sustainable use	Appropriate measures for conservation and sustainable use, such as conservation by family contact, joint law-enforcement, PPP, VCGs involvement and wider publicity, are adapted and implemented at each site.	<p>➢ Marine biodiversity conservation and ICZM were mainstreamed into the development plans of 5 provinces/autonomous region through SOA's signing of a <i>Declaration on Coastal Biodiversity Conservation in China's South Sea</i> – the document was disseminated throughout China.</p>
In Zhejiang Province (Nanji Islands)				<p>➢ <u>Sustainable financing mechanism</u>: Nanji's innovative financial mechanism is based on the adoption of one common admission ticket for the visitors in the reserve. This not only ensures controlling the flow of visitors in accordance with the carrying capacity of the islands, thus reducing reducing the tourism-related environmental pressure, but cuts on administrative and management costs and allocates 5% of the admission fees income to biodiversity conservation on the island, thus ensuring a sustainable source of funding. Recurrent administrative costs for the management of the reserve are funded by the financial departments of Zhejiang province and Pingyang County, and research and infrastructure projects are funded by marine management authorities and departments in charge of environment protection, science and technology, and finances.</p> <p>➢ <u>Solid waste and wastewater pollution control</u>: Baseline surveys highlighted the major impact of wastewater discharge at sea on the intertidal ecosystem. This was addressed through the construction of 3 wastewater treatment plants (from Sanya model), the construction of a landfill and of a 400-meter wastewater pipeline network to reduce discharge of used waters and thus reduce threats to biodiversity.</p> <p>➢ <u>Public-private partnership</u>: The land of Dasha'ao, owned by the Yutian Group, attracts many tourists, which exerts great pressure on the MPA core zone in this area, thus requiring a close monitoring of the environment and resources. The Yutian Group cooperated with the reserve and gave a plot of land to establish a monitoring station for the management of the core zone.</p> <p>➢ <u>Participatory management and sustainable livelihood</u>: Residents involved in shellfish and algae collection have signed a contract with Nanji Administrative Authority to adopt a size selective harvest method that allows shellfish to reach a certain size and to respect closure periods - in return they have a right of access to a specific part of the intertidal zone in the buffer zone. The MPA supports daily management of the contractors, the Nanji Oceanography Institute provides technical support, and the Nanji Islands branch of China Marine Surveillance provides support for enforcement. This approach has attracted a high level of participation and effectively relieved the harvest pressure on the core zone as demonstrated by the survey results.</p> <p>➢ <u>Harmonized management measures</u>: A fishing closure period has been imposed since 1995 during the summer. It has been extended from 2.5 to 3.5 months and all fishing is prohibited except for gill net and line fishing. These measures allow for the protection of fishing grounds and fish larvae.</p>

Indicator	Target Level	Baseline Level	Level at June 2010	Level at September 2011
				<p>➢ <u>Public awareness</u>: Nanji is a prime tourist destination for its scenic beauty and the quality of seafood. As tourists appreciate these assets, they can be made aware of the importance and vulnerability of marine coastal ecosystems, and contribute to its preservation through the adoption of more responsible behavior. The project held tourist-oriented awareness activities to avoid littering, avoid eating wild seafood, and develop a positive perception and caring attitude towards marine life and oceans.</p> <p>Through painting contests, distribution of books on selected paintings and on shellfish and algae, and voluntary activities, awareness efforts also contributed to develop local student's understanding of marine environment and biodiversity and to carry the message into their families following what the project called "Small Hand in Big Hand". Other activities included setting up biodiversity interest groups, setting up an exhibition hall for shellfish and algae, textbooks on marine biodiversity, broadcasting DVD programs on shellfish and algae, and knowledge contests for university and high school students. It is estimated that this program has reached a total of 100,000 students.</p>
In Hainan Province (Sanya)				<p>➢ <u>Mainstreaming biodiversity concerns into development plans</u>: Provisions for regulating threats to the MPA related to water quality have been integrated into regulations for Marine Environmental Protection and for Coral Reef Preservation. The project has contributed to the revisions of The Rule of Hainan Marine Environment Conservation and the Rule of Hainan Coral Reef Conservation.</p> <p>➢ <u>Participatory management / Public-private partnership</u>: The Sanya Site consists of 3 separate areas covering 85 km² along the coast, close to the densely populated urban area of Sanya which is experiencing a rapid development of tourism, thus under heavy human pressure. 19 workers were employed through the project to ensure regular patrols over the 3 distant areas. To ensure a sustainable source of funding to cover salaries, allowances and office expenses required to carry out conservation and management operations beyond the project duration, a partnership was established between the reserve and tourism enterprises. The reserve developed 3 management branches corresponding to each area, in partnership with 10 tourism companies which provided funding, participated in periodic beach clean-up and eradication of crown-of-thorns starfish (<i>Acanthaster planci</i>). The MPA trained the staff of the tourism companies to conduct monitoring activities. This public-private arrangement solved the issue related to lack of funding by transferring the responsibility of coral reef conservation on the tourism companies, and improved the management capacity of the Sanya Reserve as a whole.</p> <p>➢ <u>Sustainable alternative livelihood</u>: Tourism developed by companies provided job opportunities for residents on the island and has become a sustainable alternative livelihood. Before the project, there were nearly 1,500 fishermen on the island fishing in the coral reef area, too often using destructive practices which resulted in the degradation of the coral reefs around the island, as shown by surveys of coral reef species conducted in 1955 (55 species), in 2001 (38 species), and in 2007 (32 species). Project surveys report that since the</p>

Indicator	Target Level	Baseline Level	Level at June 2010	Level at September 2011
				reserve started cooperating with enterprises, nearly 1,000 residents previously living off coral reef resources, began working for the eco-tourism companies and increased their income.
In Guangxi Autonomous Region (Shankou, Hepu, Weizhou)				<p>> <u>Mainstreaming biodiversity concerns into development plans</u> Supported by the baseline study co-sponsored by SCCBD and Stora Enso, the Guangxi Marine and Oceanic Department has integrated the conservation of mangroves, sea grasses, and coral reefs into the <u>Beibu Gulf Economic Zone Development Plan</u>, which has been approved in 2008 by the State Council and implemented. The Beibu Gulf Development Plan allocates 390 km of coastline for ecological conservation, 11.5% of surface area as reserves and 35% of total area as ecological zones. Management and Law Enforcement Plan for Weizhou Coral Reef Marine Special Protected Area, Monitoring and Science Plan for Weizhou Coral Reef MPA, and Development Plan for Weizhou Coral Reef MPA have been submitted to the authorities and are under review. SCCBD supported the elaboration of the Weizhou Island Biodiversity Management Plan. Recommendations to establish the Weizhou Island Special MPA were prepared and submitted to provincial government for approval. The establishment of this MPA will strengthen the biodiversity conservation component of the Beibu Gulf Development Plan.</p> <p>> <u>Improved financial support</u>: As a result of increased awareness of authorities, financial support was increased for the Mangrove research centre (small) and for the mangrove and dugong reserves (significant).</p>
In Fujian-Guangdong Province (Dongshan – Nan'ao)				<p>> <u>Mainstreaming biodiversity concerns into development plans</u> The Ocean and Fishery Departments of Fujian and Guangdong Provinces co-signed the <i>Outline of Action Plan of Dongshan-Nan'ao for Inter-provincial Biodiversity Conservation</i>. Based on the analysis of biodiversity and threats, as well as on multi-stakeholder negotiations, the Outline of Action Plan adopted innovative and adaptive management approaches in ICM aimed at establishing new type of partnership to reduce and prevent threats to coastal ecosystem integrity and protect rare migratory species in the key zone. Oceanic and fisheries authorities of Zhangzhou, Shantou, Dongshan and Nan'ao jointly implemented this Outline of Action Plan. The action plan sets up operational rules including periodical meetings, alternate leadership between provinces, information sharing, communication, co-monitoring and reporting, and effectively protecting highly migratory species and the migratory corridor. To coordinate marine function zoning, the Ocean and Fisheries administrative authorities of Shantou, Zhangzhou, Nan'ao and Dongshan signed the <i>Coordination Opinions of Shantou, Guangdong and Zhangzhou, Fujian Concerning the Marine Function Zoning in the Bordering Sea Area</i> in 2010. This agreement states that the two cities and counties should designate the migratory function of the demonstration site as breeding area for fisheries in the future revisions of the zoning, and that effective measures be taken to strictly control the marine-related constructions, to implement marine environment protection measures, and to effectively protect the habitats of rare species like Chinese White Dolphin, sea turtles and horseshoe crabs.</p>

Indicator	Target Level	Baseline Level	Level at June 2010	Level at September 2011
				<p>In addition, regulations regarding the management of marine uses were promulgated by Guangdong and Fujian Provinces, for the protection of wetlands in Guangdong, and for prohibiting sand dredging in Fujian Province. Shantou Municipality promulgated regulations to reward protection of whales, dolphins and sea turtles.</p> <p>➢ <u>Participatory management</u> The fishery associations of coastal villages and the buddhist organization had a training to enable them to participate in the rescuing of stranded marine mammals and turtles and in coastal and beach cleaning. Stranded animals were rescued and released at sea and a long-term program for cleaning litter in the bays and on the beaches was established.</p>
28. Project tools and results are synthesized and disseminated to MPA managers and other relevant officials throughout the wider project area	To be developed	To be developed	International best practices for non-market evaluation of coral, mangrove and seagrasses ecosystems, for the development of MPAs, for financing for MPAs, for alternative livelihood, for publicity campaigns and for overlapping of GIS maps in the information-based decision-making.	<p>➢ Best practices and lessons learned were documented for each demonstration site and disseminated and shared among SIUs.</p> <p>➢ Recommendations for replication in other MPAs and integration to provincial regulations and development plans were made by each SIU.</p> <p>➢ Model approaches for marine biodiversity conservation in the four project sites have been formulated, including township planning by integrating MPA management in Nanji, trans-province management of marine migratory species in Dongshan-Nan'ao, sustainable livelihood in Shankou by initiating "Mangrove Brand" with local products and industries, sustainable financing mechanism in Sanya, etc. Five books summarize practices of marine biodiversity conservation and integrated coastal zone management as implemented in each site and for the whole SCS area:</p> <ul style="list-style-type: none"> ▪ <u>Island-based Management of Shellfish and Algae Biodiversity Conservation at Nanji Islands: Practice and Experience</u> ▪ <u>Inter-provincial Protection of Highly Migratory Species: Practice and Experience</u> ▪ <u>Integrated Conservation of Coral Reef Biodiversity in Sanya: Practice and Experience</u> ▪ <u>Sustainable Use of Biodiversity Based on Typical Marine Ecosystems: Practice and Experience</u> ▪ <u>Biodiversity Management in the Coastal Area of China's South Sea: Experience and Lessons</u>
Assessment of relevance				HS
Assessment of effectiveness				S
Assessment of efficiency				HS

Table 5. Summary of the assessment of development objective and outcomes

Result level	GEF Criteria		
	Relevance	Effectiveness	Efficiency
Objective	HS	S	HS
Outcome 1	HS	S	HS
Outcome 2	HS	S	HS
Outcome 3	HS	S	HS
Overall Assessment	HS	S	HS

*Note: The project relevance, effectiveness and efficiency are rated according to the following indices: **HS** - highly satisfactory, **S** - satisfactory, **MS** - marginally satisfactory, **MU** - marginally unsatisfactory, **U** - unsatisfactory, **HU** - highly unsatisfactory*

The relevance of the development objective, i.e. the degree to which the objective of the project remain valid and pertinent as originally planned, as well as the relevance of outcomes, i.e. the extent to which the outcome reflects key national priorities and receives support from key partners, are rated **highly satisfactory (HS)**. The outcomes effectively address the issues identified in the threat analysis conducted during the project preparation (PDF phase) and as part of the baseline surveys conducted in each project site, and of the assessment of the consistency with national priorities presented in the section 7.2.1. These analyses underline the high relevance of the project interventions in every site to reduce threats to biodiversity and in conformity with national priorities.

The effectiveness of the development objective and of outcomes, i.e. the extent to which a development outcome is achieved through interventions, are rated **satisfactory (S)** on the basis of the evidence presented in the tables 1 to 4 of the sections 3.1 and 3.2 which shows that, overall, objectives and intended outcomes were met in every site with only minor shortcomings.

The efficiency of the development objective and of outcomes, i.e. the optimal transformation of inputs into outputs, are rated **highly satisfactory (HS)**, which means that the project was cost effective and that resources have been used appropriately. The partnership strategy with NOAA who provided international expertise to provide trainings, the high level of ownership demonstrated by the local governments who contributed 380% of the pledged contributions at project inception (see section 7.4.1), the inter-site learning and replication approach all contributed to the high efficiency of this project implementation.

4 SUSTAINABILITY

This section gives an appreciation of the first indications of potential impacts and of the sustainability of main project outcomes / benefits after the project ends as well as the contribution to capacity development and global environmental goals. The sustainability of the scheme put in place by the project may rely on various factors, including sustainable financing mechanism, changes to local communities and authorities' perceptions and attitudes, capacity development, socio-political context, institutional/governance framework, and environment.

Sustainability is rated through an assessment of four dimensions of the risks that are likely to affect the persistence of project outcomes: i) financial, ii) socio-political, iii) institutional and governance, and iv) environmental risks. These risks are rated according to the following scale:

Likely (L). There are no or negligible risks that affect this dimension of sustainability.

Moderately likely (ML). There are moderate risks that affect this dimension of sustainability.

Moderately unlikely (MU). There are significant risks that affect this dimension of sustainability.

Unlikely (U). There are severe risks that affect this dimension of sustainability.

4.1 Financial aspects of the sustainability of outcomes

This section assesses whether some financial risks are likely to jeopardize sustainability of project outcomes and the likelihood of financial and economic resources not being available once project assistance ends. The assessment was done separately for each site.

The concepts of marine biodiversity conservation and integrated coastal zone management were integrated into the National Marine Ecological Conservation Plan which is one of the four components of the 12th Five-Year Plan, which will ensure a sustained support to this focal area throughout the period. During this period, the scientific and technological support will continue to be strengthened and marine eco-restoration will become the focal object of support. The Department of International Cooperation of the State Oceanic Administration will actively promote the popularization of project experience through international cooperation. The European Union will provide over 10 million euro in 2011-2015 to support the conservation of marine biodiversity in the project area.

One of the project objectives under outcomes 2 and 3 was to ensure that sustainable financial mechanisms were established and operational in each demonstration site to provide sustainable funding to support management recurrent costs.

Nanji Islands – (L) Nanji's innovative sustainable financial mechanism is based on the adoption of one common admission ticket for the visitors in the reserve. This not only ensures controlling the flow of visitors into the islands in accordance with the carrying capacity of the islands, but allocates part of the income from the admission fees to the direct use to the conservation and construction of the reserve. In addition, the town government who led the revision of the urban development plan intends to invest 20 million RMB in cultural tourism, hotel standards, planning aquaculture, and eco-environmental rehabilitation. Rehabilitation of degraded ecosystems could be a major part of marine ecological conservation in the next 20 to 30 years as the project experience with *Sargassum horneri* has a good demonstration potential for ecological rehabilitation.

Sanya – (L). The sustainable financial mechanism relies mainly on government funds supplemented by contributions from enterprises and the sea area use fee. In accordance with the *Regulations of Hainan Province on the Administration of Collection of Sea Area Use Fee*, the sea area use fee, notably for coral reef use by tourism operators, shall be included in the general budget and allocated by the financial departments of all levels, for governance, protection and management of sea areas, following the user pays principle, thus providing a stable source of funding for the reserve. Since 2007, Sanya has received annually a special fund as a subsidy from the Department of Ocean and Fishery of Hainan Province, which amount has appreciably increased every year.

The monitoring tasks related to the long-term monitoring station in the reserve were integrated since 2009 in the annual marine environmental monitoring programme of Hainan Province, which will ensure their sustainability.

Shankou – (ML) The aspects of the project interventions in this site which are most likely to be financially sustainable are those related to the sustainable use of mangrove resources and benefiting from the mangrove-branding marketing. Benefits to local resource users who benefit from the alternative livelihoods are sufficiently high to guarantee that they will abide to the contractual agreements in the future while improving their livelihood.

As a result of increased awareness of authorities, financial support was augmented for the Mangrove research centre (small) and for the mangrove and dugong reserves (significant). Through the baseline survey, the Shankou Reserve obtained spatiotemporal data on the evolution of marine biodiversity and environment, and on main threats, and proposed corrective measures in accordance with the adaptive management approach. This allowed securing over 10 million RMB for the establishment of a wetland nature reserve. With the development of economy and increased awareness of the importance of conserving marine biodiversity, it is likely that the government's regular budgetary input to the demonstration site will be at least maintained. Nevertheless, relying solely on governmental support may not be sufficient for all conservation needs as this site has not developed alternative sustainable financial mechanism based on the user-pays principle, as was done in Sanya and in Nanji.

Dongshan-Nan'ao – (ML) The inter-provincial coordination committee established the cooperation mechanism for inter-provincial integrated coastal management and migratory species protection, and approved the *Outline of Action Plan of Dongshan-Nan'ao for Inter-provincial Biodiversity Conservation*.

This inter-provincial cooperation mechanism concerns policy, administration, staff competence and funding. Both Fujian and Guangdong have increased their funding to enhance marine ecosystem protection. The funding has far exceeded the amount promised when the project was initiated. It is expected that after the completion of the project, as the values of marine and environmental conservation are widespread among the society, there will be strong advocacy for the protection of marine biodiversity, and that both provinces will at least maintain their investment in integrated coastal management and marine biodiversity conservation. However, this site has not developed any other sustainable financial mechanism based on the user-pays principle, as was done in Sanya and in Nanji.

4.2 Socio-political aspects of the sustainability of outcomes

This section examines whether any social or political risks are likely to jeopardize the sustainability of project outcomes and the risk that the level of stakeholder ownership (including ownership by governments) will be insufficient to allow for the project outcomes/benefits to be sustained. The socio-political aspects of the sustainability of outcomes are rated as **marginally likely (ML)** for all project sites, which means that only moderate risks affect this dimension of sustainability.

All sites. The Project Management Unit based in SOA prepared a replication strategy to be signed between SOA and governors of the four participating provinces. In order to spread the outcome to the whole project site, and to integrate marine biodiversity conservation and integrated coastal management into the development planning of the 5 provinces and autonomous region, SOA and the 5 provinces signed the *Declaration on Biodiversity in the Coastal Area of China's South Sea* which has been circulated nationwide. The government support and planning support for spreading the successful experience have been ensured.

Alternative livelihoods, direct resource user groups, and participatory management. An important condition for the sustainability of project impacts rests on the success of the development of alternative livelihoods. SCCBD assisted community stakeholders, fishermen and other direct marine resource users to change their original livelihoods which exerted unsustainable pressure on marine biodiversity and adopt profitable livelihoods based on a sustainable use of resources. Villagers who live in the adjacent areas of the different MPAs, i.e. Dongshan Island of Fujian, Nanpeng Islands Natural Reserve, Nanji Island in Zhejiang changed their livelihoods that relied on traditional fishing to biodiversity friendly alternative livelihoods. Direct resource user groups have been established through the project. However, it is not certain that all of these groups will be maintained in the future beyond the project support and this level of uncertainty could not be assessed in the framework of this evaluation. Developing innovative livelihood options requires financial resources and institutional support for research, communication, technological development and education. It is not clear whether this type of support will be provided to local communities beyond the project life.

The evidence presented by the project and collected during site visits is that key stakeholders, from the local communities to the provincial governments, see that the project benefits are in their interest. Also, the project has invested considerable efforts to raise public and stakeholders' awareness in support of marine biodiversity and environmental conservation, which appear to have been fruitful based on interviews held during the site visits and information provided in the project reports. The project seems to have been able to change stakeholders and local communities' perceptions and behaviour and develop a sense of ownership towards marine biodiversity resources, which is an essential component of sustainability.

4.3 Governance / institutional aspects of the sustainability of outcomes

The highly participatory approach adopted by the project and the careful and adequate identification of stakeholders have allowed to involve the relevant actors in the project decision-making processes (planning) and implementation, which increased ownership on the part of authorities and institutions, enhanced compliance on the part of resource users and reduced the need for strict enforcement.

The project interventions led to a major increase in public and authorities capacity and awareness of the importance of biodiversity, thus establishing a network of actors all contributing one way or another to the participatory or collaborative management (rather than comanagement) and

conservation of biodiversity. The subcontracts were awarded to local institutions that are likely to continue the work initiated under the project, which contributed to develop their institutional capacities as well as the capacity of their staff, and also to confirm their role in pursuing marine biodiversity conservation objectives. As local resource users got to know the marine resources and better understand the importance of biodiversity, they got involved in decision-making processes regarding resource management and complied with conservation regulations.

In Shankou, local regulations were developed to ensure the right of local communities to participate in the management of the MPA, the *Regulations of the Villager Conservation Group of Shankou Reserve* and the regulations for a multi-participatory coordination committee, but the conditions and requirements for its application could not be assessed. Such regulations have not been developed in the other project sites, but in Nanji and in Shankou, contracts with MPA management have been established at the village (Nanji) and individual (Shankou) levels to legitimize the role and rights of resource users and specify their participation in the management of the marine protected area. These contracts have not been examined for this evaluation.

⇒ One important area of concern is whether such local recognition of user rights is embedded in an enabling legislative framework and whether it would be sufficient to protect users's rights in the face of industrial development or lucrative resource exploitation projects.

The *Law of the People's Republic of China on the Administration of the Use of Sea Areas of 2001* does provide the legislative framework that enables the devolution of natural resources management rights to local users or community groups and protects users' rights. According to this Law, any entity or individual may have the right to use sea areas (Article 16), provided appropriate application procedures are followed and sea areas are used in conformity with the marine function zoning. Such right will, once registered, be protected by law. The Article 19 states that where the use of a sea area is approved by the State Council or by a local people's government, it will be registered with the department in charge of oceanic administration under the State Council, or with the local people's government, which will issue the certificate of the right to the use of sea areas. Article 22 recognizes the prevalence of traditional use rights of sea areas for aquaculture by rural collective economic organizations or villagers committees or their members, provided it conforms to marine function zoning. Article 23 ascertains that the user right to utilize sea areas and to benefit from it shall be protected by law and that no entity or individual may infringe upon their right, and Article 31 provides a procedure for settling disputes over the right to the use of a sea area.

Nanji Islands. The revision of the urban development of Nanji Township was led by the town authorities who intend to invest 20 million RMB to enhance tourism, optimize aquaculture implementation, and restore the environment.

In Nanji, participatory management processes were developed through contracts established between the MPA and villages, one contract per village, for a total of 12 contracts. According to these contracts, villagers commit to develop small-scale aquaculture with native species only, such as nori algae and abalone, act as rangers for the MPA and protect resources and environment on behalf of the government, and participate to research on species occurrence. On the other side, the MPA commits to provide technical support and supervision of aquaculture activities, contact with villagers once a month, and carry out participatory research on species distribution and occurrence, where they benefit from fishermen's knowledge about resources and habitats.

Sanya Reserve. The monitoring tasks related to the long-term monitoring station in the reserve were integrated since 2009 in the annual marine environmental monitoring programme of Hainan Province. These tasks will be performed by professional monitoring institutions and natural reserve staff following simple monitoring regulations, which ensures the sustainability of the monitoring activities.

Stakeholder participation and adaptive management were the main principles that guided the revision of Nanji master plan. The opinions of the Nanji Reserve Administration, island residents, and socioeconomic and ecological experts were taken into consideration to ensure the conservation of globally significant marine biodiversity around the Nanji Islands, while achieving the sustainable development of local communities.

The Advisory Committee of Sanya Demonstration Site in the early stage included provincial and municipal stakeholders mostly involved with the marine environment and resources, tourism, and

finances. As the project addressed pollution reduction issues, additional actors involved with development and reform, finances, planning and construction, and water at the municipal level joined the committee, thus gathering together all relevant parties to constitute an effective platform to develop and agree on an integrated solution to pollution problems affecting coral health. This participatory effort not only increases the chances that the solutions identified will be appropriate, but also that participants will abide by it as they took part to the decision-making.

Shankou-Hepu-Weizhou Island. The Shankou Reserve Administration allowed local stakeholders to take an active part in the management of the reserve. They signed contracts with eco-tourism operators, direct resource users, aquaculturists, village rangers and VCGs to contribute to patrolling and protecting the mangrove. In return, these villagers were allowed to use mangrove resources for commercial purposes, under conditions stated in the contracts and in conformity with the reserve conservation and sustainable management objectives. A marketing approach based on “mangrove” branding increases contracting producers income for environment-friendly mangrove products (mineral water, duck eggs, sweet potatoes, mangrove fruit, etc.) This participatory mechanism creates conditions that are mutually beneficial to resource users and MPA administration, thus ensuring its sustainability, as well as the environmental benefits resulting from halting the activities that were detrimental for the mangrove resources and replacing them by non-polluting and non-destructive ones.

A village leaders’ network was set up as mangrove rangers based on the recognition of local chiefs’ prestige and authority in their village, for a total of 12 rangers from the 12 villages located within 5 km from the mangrove. These rangers act as protection officers and contribute to awareness activities and patrolling in the mangrove.

Village conservation groups established in 7 villages and gathering 200 members have contributed to the identification, development and promotion of profitable alternative livelihoods based on the sustainable use of mangrove resources. They coordinate volunteer patrolling of the mangrove and organize awareness activities.

Dongshan-Nan’ao. In Dongshan-Nan’ao, an inter-regional cooperation mechanism was established to harmonize integrated coastal management and the management of highly migratory species between two provinces. This approach takes into account the fluid and complex nature of the marine environment, the mobility of some marine species, and the fact that some biological and environmental issues must be managed beyond administrative boundaries.

The inter-provincial coordination committee has run for 5 years during which it approved the *Outline of Action Plan of Dongshan-Nan’ao for Inter-provincial Biodiversity Conservation* which was jointly implemented by the oceanic and fisheries authorities of Zhangzhou, Shantou, Dongshan and Nan’ao. The inter-provincial cooperation mechanism concerns policy, administration, staff competence and funding. During the implementation, the committee members acquired rich experience concerning cooperation, and monitoring and performance evaluation, improved their capacity and ensured the sustainability of project outcomes from the aspects of institution and staff.

All sites. Therefore, the governance / institutional aspects the sustainability of outcomes are rated as **likely (L)** for all project sites, which means that only minor risks are likely to affect this dimension of sustainability of the project outcomes.

4.4 Environmental aspects of the sustainability of outcomes

This section assesses whether any environmental risks or certain activities could potentially jeopardize the sustainability of the project outcomes.

Immediate environmental risks. Baseline studies conducted in the first stage of the project included a thorough assessment of threats to biodiversity in the coastal area of China’s South Sea and of their root causes – and the project strategy in each site was developed to address them. The project has succeeded in developing and implementing effective solutions to reduce threats at every level, including regulations, mainstreaming biodiversity concerns into planning processes, stakeholder’s awareness, sustainable financing mechanisms, and sustainable livelihoods contributing to alleviate pressure on resources. In every site, significant signs of recovery or of stabilization were

observed for key biodiversity species. Every site has developed a follow-up action plan, where actions and projects are identified to sustain the project outcomes beyond its completion.

Medium to long term environmental risks: Climate change. The impact of climate change on marine and coastal biodiversity is observed to varying degrees in all marine environments. In the South China Sea, climate change impacts include increased ocean temperature, rising sea levels, changes to major current systems, and ocean acidification. In the medium to long term, these impacts have the potential to lessen the biodiversity benefits gained through the project interventions.

Increased ocean temperature. It has been observed that sea surface temperature of the northern part of the SCS became warmer during the last decades.⁹ Due to sea temperature changes, fish species are forced to migrate towards cooler waters so they can maintain the temperature conditions they need for feeding and reproduction. Water temperature changes can directly impact development, age of sexual maturity, timing of spawning, growth, and survival of most marine and coastal species. Increases in global average temperature and acidification of ocean waters cause coral bleaching, which in turn negatively impacts the entire coral reef ecosystem. Coral reefs provide habitat for countless marine species, a source of protein for people, and support important tourism industries. As warming ocean waters impact marine and coastal biodiversity, the livelihoods and industries that depend on them will also be impacted.

Rising sea levels. The survival of coral reefs, mangroves, and sea grasses depends on their ability to maintain their populations in shallow waters. As sea levels increase, slow-growing species such as corals are most unlikely to adapt to the rising sea level. Critical coastal habitats, for instance sea turtle nesting beaches, will be lost as the sea level rises.

Changes to major current systems. Changes in ocean temperatures and wind patterns—results of overall climate change—will affect and alter oceanic currents. The migratory patterns of many animals such as dolphins can change as the currents they follow are altered. Also, many species such as reef-building coral and reef fish species that rely on dispersal of their larvae by currents will be affected.

Ocean acidification. The progressive acidification of oceans due to increasing atmospheric carbon dioxide is expected to have negative impacts on marine shell-forming organisms (e.g., corals) and their dependent species. Acidification directly affects marine plants and animals that build shells of calcium carbonate—including many tropical reefbuilding corals, molluscs, crustaceans, and some microscopic plankton that make up the foundation of the food web throughout most oceanic waters.

Long-term monitoring systems. Vulnerability to climate change will be exacerbated by the presence of other non-climate stresses by reducing resilience and adaptive capacity. For example, besides increased water temperature, current stresses on coral reefs include marine and land-based pollution, chemical runoff from agriculture, siltation and ocean acidification, to name but a few. On the other hand, sustainable development can reduce vulnerability to climate change by reducing the impact of non climate stressors which will enhance adaptive capacity and increase resilience. To progress towards sustainable development, information about climate change impacts and mitigation / adaptation potential must be provided to decision makers through systematic observation, monitoring and research. The establishment of long-term monitoring systems in the coastal area of 5 provinces/autonomous region through SCCBD has provided significant support in this direction.

All sites. Therefore, the environmental aspects the sustainability of outcomes are rated as **moderately likely (ML)** for all project sites, which means that moderate risks are likely to affect this dimension of sustainability of the project outcomes.

⁹ IPCC, AR4, Climate Change. 2007. Working group II. Impacts, adaptation and vulnerability. Ch. 10.

Table 6. Summary of the assessment of aspects of sustainability for each site

Site	Financial	Socio-political	Governance / institutional	Environmental
Nanji Islands	L	ML	L	ML
Sanya	L	ML	L	ML
Shankou	ML	ML	L	ML
Dongshan-Nan'ao	ML	ML	L	ML

4.5 Contribution to building national capacity

This project has contributed to develop and strengthen national capacity for marine and coastal biodiversity conservation and sustainable management at every level: systematic, institutional and individual.

Systemic capacities. The impact of the capacity building interventions reaches far beyond the project implementation sites as many outcomes of the project such as the pilot approaches developed to mitigate specific threats to marine and coastal biodiversity were integrated in the 12th 5-year plan for Development of Marine Science and Technology, thus reducing financial, socio-political, and institutional risks to the sustainability of the corresponding interventions.

Individual and institutional capacities. The capabilities that projects contribute most to develop are very often those of individuals and institutions directly involved in their implementation, through training and workshops, but above all through the gain of hands-on experience. Implementation through subcontracts involved stakeholders, NGOs, research and academic institutions, private partners, authorities, and communities, including primary and middle schools, all at the local level, thus developing the awareness and capacity of a whole network of people in different levels of the local society who will continue to pass on the conservation message to their own community.

SCCBD has contributed to build multi-stakeholder partnership platforms. In total, 57 partners have been involved in the project. Governmental line agencies include SOA, MOF, provincial Department of Ocean and Aquaculture, national and local research institutions, universities, primary and middle schools, local NGOs, marine and fishery technical services, private enterprises, etc.

A total of 54 training courses, workshops, study tours and field investigations were supported by the project. These activities greatly contributed to enhancing the technical capacity and policy formulation and biodiversity management capacity and building the public awareness on biodiversity conservation.

China's Training and Education Centre for Marine Biodiversity Conservation and Ecosystem Management was established in Xiamen in 2006 with the support of SOA, NOAA, and UNDP. The center is responsible for the development and implementation of training plans, integration of advanced ecological conservation approaches and methodology into MPA management, dissemination of basic knowledge in marine and coastal ecological conservation, capacity building in MPAs, and improvement of marine biodiversity conservation effectiveness. Since its establishment, with the contribution of SOA's Third Institute of Oceanography, 300 persons were trained through 18 courses and workshops. This training and education centre is a great contribution to ensure the dissemination of good practices for the conservation and sustainable management of marine and coastal biodiversity developed through the project.

5 MONITORING AND EVALUATION

5.1 Design and budget for monitoring and evaluation

5.1.1 Monitoring and evaluation plan

As required for a GEF/UNDP project, the project document included monitoring and evaluation (M&E) procedures and a plan to monitor results and track progress toward achieving project objectives. Procedures indicated timeframes and included:

- **Tripartite Review** → Yearly policy-level meeting of parties directly involved in the project (MOF as the GEF focal point, SOA, UNDP, the Project Team as observers, and other main stakeholders, including other donors, as deemed appropriate) to assess the progress of the project and to make recommendations to improve the design and implementation of the project in order to achieve the expected results.
- **Annual progress reports** → Project Implementation Review (PIR) prepared by the PCU and submitted to the UNDP/GEF Regional Coordinator to report on activities, outputs, costs, progress and problems.
- **Quarterly operational reports** → Brief summary to report on project's progress towards achieving its objectives, including outputs and costs.
- **Mid-term and Final Independent Evaluations** according to UNDP and GEF requirements
- **Project Budgets Revisions and Substantive Revisions** to be endorsed by the Steering Committee in accordance with the UNDP requirements.
- **Monitoring and Evaluation Plan** to be detailed during the inception phase as an integral part of the project to enable adaptive management and assessment of lessons learned through round table discussions and workshops. The requirements for the M&E plan involved:
 - conducting baseline surveys during the first year of the project to provide a basis for future monitoring and evaluation – on i) marine biodiversity, ii) levels of threats to biodiversity in each site, iii) attitude and awareness of key stakeholders, and iv) use of marine resources and income levels of local communities around site areas;
 - continuous monitoring through information exchanges between the PCU and the SIUs and annually through an organized review of progress towards milestones defined in the project document to help guide monitoring and evaluation work;
 - continuous monitoring and evaluation of project progress on the basis of indicators included in the project's LF and revised during the first year of the project following the baseline surveys to include indicators of threat reduction and coastal ecosystem and biodiversity condition;
 - annual meeting of key project staff to review operations and field implementation and assessing whether new priorities require a shift in project implementation;
 - standard UNDP/GEF monitoring requirements listed above.

M&E budget. The initial budget included in the project document earmarked financial resources for conducting the midterm (60,000 US\$) and terminal (40,000 US\$) evaluations as well as a specific line budget for Adaptive Management Monitoring by SOA, UNDP and MOF amounting to 140,000 US\$ over the planned 8-year implementation. Although the exact nature of the costs included in this amount is not known, this amount appears limited given the geographic extent of the planned interventions and associated travel costs.

5.1.2 Indicators

Different sets of indicators have been developed throughout the project development, inception and revision phases and the extent of their use is not clear. The evaluation of the development and use of appropriate indicators to report on project achievements is therefore focusing on the revised set of

indicators (after MTE) used for annual PIRs, after providing an overview of the development of the different sets of indicators.

A LF (with indicators) had been included in the project brief submitted in 2002 but only a result framework (without indicators) was included in the project document (2005). During the inception phase, a M&E plan was developed which included a set of indicators (different from those included in the LF of the project brief) that were used for reporting in the PIRs of 2006 and 2007. After the MTE, a new set of indicators was adopted and used for the PIRs during the remaining period of the project.

The project developed performance indicators for each intervention site. These indicators are presented in the project Executive Report 2011 – section 9. Although the formulation of some indicators could have been improved to meet SMART criteria, these could have been appropriate to reflect the level of development result achieved by the project interventions. That being said, the use of these indicators could not be established since the PIRs have maintained the use of indicators developed in 2008 and the other annual reports have not used them in a systematic format.

The project Technical Report 2011 presents a revised LF (section 1.3.2) with yet another set of indicators. This set of indicators is appropriate at the levels of development, 'project' and immediate objectives, although a few indicators remain output oriented. The narrative description of project achievements in the technical report includes information which can be related to these indicators; however, this LF and indicators have not been used systematically for reporting.

Finally, as agreed during the debriefing session with SOA and UNDP, specific comments will focus on the last set of indicators adopted for reporting on project achievements in PIRs.

Table 7. Comments on indicators

Indicators	Comment
Objective: To establish conservation and sustainable use through multi- stakeholder management of marine biodiversity at four demo sites, together with mechanisms for replicating these approaches across China's South Sea coastal area	
1. Each of the four demo sites are being managed effectively by multi- stakeholder consultation mechanism at provincial and local levels	<ul style="list-style-type: none"> ▪ The first 2 indicators are not specific, are overlapping and do not indicate clearly what needs to be measured: the effectiveness of the management? Biodiversity status? The consultation and participatory mechanisms? ▪ It may have been useful to formulate a governance indicator such as "Effective mechanisms are in place to ensure relevant stakeholders' representation and participation to plan and implement biodiversity conservation and sustainable management in the four project sites" ▪ Another indicator could measure the <u>improvement of the knowledge basis</u> for sound management decision-making through surveys, monitoring, participatory research, and local resource users consultations. ▪ At the development objective level, it is essential to include biodiversity indicators, such as focal species abundance and distribution, for the key resources in each site to measure the project impact
2. Biodiversity at four demo sites are managed sustainably through partnerships, co-management and other participatory mechanisms	
3. Land-based sources of pollution are reduced to 30-50% to that identified in the baseline survey reports at four demos sites	<ul style="list-style-type: none"> ▪ These threat reduction indicators belong to the immediate result level as they reflect effect results that can be obtained directly by the project (Unlike the impact results to which the project can only contribute to). ▪ A more appropriate type of impact-level indicator could be: The change in quality and quantity of critical habitat(s) for focal species as a result of threat reduction interventions. ▪ As formulated, it is not clear what should be measured – according to the findings of the baseline surveys, this indicator should be more specific, such as the total suspended solids, chemical or biological oxygen demand (COD-BOD), levels of nitrogen and compounds, phosphorous and compounds, bacteria, heavy metals, etc.)
4. Ship-based sources of pollution or damage are reduced to non damaging levels for biodiversity at all sites	

Indicators	Comment
Outcome 1: Conservation and sustainable use management capacities at four existing MPAs are strengthened	
10. Baseline survey report available , long term monitoring plan and GIS system in operation at Dongshan –Nan'ao Site	This indicator is output-oriented – it would be more appropriate to report on the effect of these capacity improvements, such as the proportion of conservation / sustainable use management measures that are based on improved knowledge and updated data on biodiversity resources and habitats as a result of project interventions.

Indicators	Comment
11. Formulation of fishermen associations and publicity campaigns with meetings, outreaches and other forms for fishery communities and pupils at Dongshan-Nan'ao Site.。	This indicator is output-oriented – it would be more appropriate to report on the effect of these capacity improvements, such as changes of perceptions of the importance of conserving marine biodiversity
12. Developing long-term program for biological monitoring, , establishing and operate two biodiversity monitoring stations and strengthening Sanya MPA enforcement by training and better equipping MPA staff.	This is not an indicator of result but rather a description of actions to implement.
13. Conduct comprehensive baseline survey of coral reef conditions and species distributions within the reserve and develop GIS-based maps of biodiversity hotspots in MPA for use by managers at Sanya Site	This is not an indicator of result but rather a description of actions to implement.
14. Conducting pilot coral reef restoration in pilot areas and monitoring new coral growth in restoration by identifying healthy reef areas and introducing best practices worldwide at Sanya Site.	This is not an indicator of result but rather a description of actions to implement.
15. Baseline survey report available, long term monitoring plan and GIS system in operation at Shankou Site	This indicator is output-oriented – it would be more appropriate to report on the effect of these capacity improvements, such as the proportion of conservation / sustainable use management measures that are based on improved knowledge as a result of project interventions.
16. Organize VCGs and conduct various socioeconomic surveys to recommend alternative livelihood for villagers around Shankou Site	This is not an indicator of result but rather a list of actions to implement.
17. Publicity campaigns launched for various stakeholders by meetings, dissemination of outreaches, lobbying and consultations at Shankou Site	This indicator is output-oriented – a result indicator would focus on the changes brought by these awareness activities, such as changes in perceptions or attitude, as revealed by surveys, or by level of voluntary public participation in environmental activities such as beach or site cleaning, participatory monitoring activities.
18. Building public- private partnership with local industries for the conservation of mangroves, seagrass and coral reefs at Shankou Site .	The intended result from these agreements is private fund contribution, therefore an indicator could read as "Proportion of the funding for the conservation of mangroves, seagrass and coral reefs contributed through public-private agreements"
5. Indicated number of MPA boundary buoys ,fences, markers and warning boards and motoring stations are in place and communication facilities in operation at Nanji Site. Intrusion into core zone reduced	This indicator is an output – the outcome is the last part related to reduced infringement into the MPA core zone.
Outcome 2: Tools, instruments and approaches for addressing the root causes of critical threats to marine biodiversity in China's South Sea coastal area are developed, tested and demonstrated	
19. The use of biodiversity overlays in planning is demonstrated at Nanji Site	This indicator is an output
20. Water reservoir, plant ,water supply network , power supply system , sanitation system and 200 more dustbins in operation with Gov. funding at Nanji Site	This indicator is a series of outputs
21. Inter-provincial cooperation is demonstrated at Dongshan-Nan'ao Site	These indicators should be more explicit with respect to their effects or the level of effectiveness of the demonstration
22. Integrated pollution control is demonstrated at SNCRNR	
23. Sustainable financing and the effective use of economic instruments for marine environmental protection are demonstrated at Sanya	
24. Participatory co- management and sustainable harvesting strategies involving local communities are demonstrated at SMNR	
25. An effective process for establishing a new MPA, with international support is demonstrated at Weizhou Island	
Outcome 3: Appropriate tools for conservation and sustainable use at the four sites and promote their broader adaptation across China's South Sea coastal area are implemented	
26. Stakeholders at each site have learned from the demonstrated conservation approaches and are ready to apply the newly acquired capacity to their areas	These 2 indicators are redundant, since the ability to adapt and implement (27) follows from the skills acquired (26) – both refer to the enhanced capacities of stakeholders.
27. Stakeholders at each site adapt and implement appropriate measures for conservation and sustainable use	

Indicators	Comment
28. Project tools and results are synthesized and disseminated to MPA managers and other relevant officials throughout the wider project area	Appropriate tools are available and facilitate the adaptation of the biodiversity conservation and ICZM approaches developed in the demonstration sites.

Overall, the majority of indicators used for reporting in the PIRs are not adequate as most outcome indicators are output-oriented and do not meet SMART criteria (Specific, Measurable, Applicable and Accountable, Relevant and Realistic, Time-bound, Tractable and Targeted). Inappropriate indicators may lead to vague and inconsistent reporting on the results and prevent the application of an effective adaptive management approach. The impact indicators (project objective level) used in the PIRs do not allow measuring and reflecting the project contribution to the conservation or sustainable use of marine biodiversity of global significance. Apparently, this was recognized by the project team as other more appropriate sets of indicators were developed (performance indicators and new LF) and included in the final reports, though not used systematically for monitoring, evaluating and reporting.

R The implementation of future projects would be enhanced by a careful identification of indicators better reflecting the achievement of outcomes rather than outputs, and meeting the SMART criteria. The use of such indicators would facilitate the application of the adaptive management approach.

5.2 Implementation of the monitoring and evaluation plan

The M&E system was in place and facilitated timely tracking of project implementation and progress toward project objectives despite the fact that indicators were inadequate. Throughout the implementation period, annual PSC and LPSC meetings were held and fulfilled their role, annual project reports were submitted, annual audits took place; the information provided by the M&E system was used during the project to improve the implementation and ensure objectives and intended outcomes would be met.

Project steering committee (PSC) meetings. 7 PSC annual meetings were held during the project implementation to review, evaluate and summarize outputs and outcomes of the previous year, evaluate project performance, make an adaptive adjustment of the workplan and arrangements of project funds, and adopt workplan for the coming year. The first PSC meeting coincided with the official launching of the project and allowed to review and approve the Project Implementation Plan (Project management plan, Adaptive management framework, M&E Plan, Procedures for formulating subcontracts, Workplan for the 1st phase of the project 2006-2010, and Project management manual). Most meetings were held at the beginning of each year in each province and Beijing. All reports were in Chinese but two had an English summary. All PSC meetings had a very high attendance, from 33 to over 60 people. This elevated participation rate is most likely a reflection of the high commitment of stakeholders to marine biodiversity conservation and of their receptivity to improved approaches. It may also be linked to careful planning and good communication strategies.

Meeting of **Local project steering committees (LPSC)** were held at least once a year to review the project in each site, verify data, and evaluate project performance.

R When reports are not available in English, it would be useful to provide a short summary of the main decisions or main issues addressed in English.

MTE. The mid-term evaluation was completed in January 2009.

Quarterly progress reports. Technical progress reports and financial reports were submitted to UNDP on a quarterly basis.

Annual monitoring and reporting. The project implementation was monitored on a continuous basis through information exchanges between the PCU and the SIUs, and annually from 2005 to 2010 through an organized review of progress towards milestones for the preparation of the project annual reports¹⁰ (different from the PIRs). These joint annual reviews and work planning involving all SIUs and the PCU ensured the effective coordination of the project implementation in the 5 project sites, a common understanding of issues and interventions among project teams and stakeholders, and sharing experiences among all sites.

¹⁰ English versions of these annual reports were available for all years but 2008 and 2010.

These annual reports are based on a compilation of site-specific monitoring, evaluation and reporting but remain concise and give an account of management and operational (activities) issues, main issues, lessons learned and recommendations. These reports did not make use of the indicators included in the LF. In addition, **Project implementation reports** were produced on an annual basis from 2006 to 2011, following the evolving format provided by the GEF.

Annual audits. The project was audited every year from 2006 to 2010 (documents in Chinese only) and did not raise major problems.

Adaptive management. The concept of adaptive management was applied by the PCU, particularly through the annual reports where clear directions were given based on the previous evaluation of project implementation, notably to realign weak management practices. The PCU has exercised vigilant monitoring of project progress and identified at the end of each year, the necessary adjustments and aspects which needed strengthening to ensure the achievement of intended results as effectively and efficiently as possible. This wise management and coordination is likely a key factor in the success of the project. Still, during interviews, SIUs seemed to understand this approach as adapting to changing circumstances rather than refining the formulation of interventions to better reach intended results based on monitoring indicators.

5.3 Rating of the M&E system

As required by the GEF Evaluation Guidelines, the Project M&E system is rated on quality of M&E design and quality of M&E implementation. The M&E system is rated **Moderately satisfactory (MS)** as there were moderate shortcomings in the project M&E system, mainly related to the identification and use of inadequate indicators, as presented in the Table 7 of the section 5.1.2.

This problem could have been more constraining for the whole monitoring system of the project but it was offset by an otherwise good understanding and application of result-based management by most SIUs who managed to report on real outcomes without referring to the indicators. The other aspects of the M&E system were applied rigorously.

5.4 Monitoring of long-term changes

The establishment of a monitoring and evaluation system of long-term changes of marine and coastal biodiversity in every province or region was incorporated in this project as an integral component and included the determination of environmental and resource baselines for each site, provisioning of equipment and GIS software, and capacity building for data gathering, analysis, and use.

The monitoring capacity of MPAs was improved through the acquisition of equipment and means of transportation which allowed staff to increase monitoring frequency, coverage and efficiency.

A baseline report was developed for every demonstration site, long-term monitoring stations were established and monitoring protocols were developed to standardize data collection. The new monitoring systems are integrated into the operational framework of existing institutions under the supervision of trained staff and are therefore likely to be sustainable.

Nanji Islands. GIS-based information on biodiversity resources and their threats allowed using overlays to analyse the spatiotemporal evolution of biodiversity and threats, and integrate biodiversity conservation and land-use planning to put forward suggestions for the revision of urban plans with respect to industrial types, land use and ecological conservation. GIS software and equipment provided by the project allows tracking boat movements in the vicinity of MPAs and intervening in case one infringes regulations on access to the different zones. MPA staff reported that cases of infringement had significantly reduced since this system was in place. The GIS system established in Nanji is to be managed by the Second Institute of Oceanography of SOA, under the responsibility of a GIS expert in charge of data management. SOA will organize resource monitoring and update the database, guided by the *Technical Rules for the Survey of Marine Biodiversity in the Nanji Archipelago Nature Reserve* and the *Plan for Long-term Biodiversity Monitoring in the Nanji Island Reserve*.

Sanya Reserve. *Brief Rules and Plans for the Long Term Monitoring of Sanya Coral Reef* were developed. The baseline survey allowed the selection of appropriate monitoring stations to survey pollution sources and the selection of optimal sites to transplant coral fragments. Permanent monitoring stations have been established in the reserve. Coral reef monitoring is conducted following

the line intercept transect (LIT) monitoring method which is one of the methods recommended by the Global Coral Reef Monitoring Network. The elements monitored include coral health status (including quantity and coverage of hard corals, dead corals, large algae, and non-living substrate), large benthic invertebrates, reef fish, human-related threats and natural interference. 4000 coral fragments were transplanted over one hectare surface area and survival rate was 95%. Monitoring is integrated in the annual work programme of marine environmental monitoring of Hainan Province under the responsibility of professional monitoring institutions and of the reserve management office under the Department of Fishery and Ocean of Hainan Province, thus ensuring the sustainability of the system.

Shankou Mangrove Reserve and Dugong Reserve. Biodiversity Monitoring guidelines were developed for the mangrove, the seagrass bed, and the coral reef, and to monitor mangrove frostbite. Seagrass restoration experiments with various species in different habitats were not successful. However, mangrove drastic decline is reversed through restoration in rehabilitated shrimp aquaculture ponds: 60 hectares were planted with 68% survival rate in one site. With the support of Guangxi Stora-Enso the Biodiversity baseline survey in Tieshan Port, a Report on the Environmental Impact Factor Caused by Paper Factory Operation, and a Report on Biodiversity Monitoring Indicators were produced. Databases on local socioeconomy, VCG members, seagrass, coral reef, and mangrove were established. Reserve staff was trained to use the GIS-based monitoring system which was established within the regular MPA operations. A socioeconomic database was established for the nature reserve and the information system is able to produce special maps on spatiotemporal distribution and threatening factors of sea grass, coral reef and mangrove.

Dongshan-Nan'ao. *A Medium-Term and a Long-Term Monitoring Plan for Dongshan-Nan'ao Biodiversity* was developed. Information on the distribution of the key species in Dongshan-Nan'ao, dolphins, marine turtles, and horseshoe crabs, was collected with the support of research institutions to document the distribution of species in the area concerned by the intervention site. The staff in charge of Dongshan-Nan'ao Site is now able to do statistics, comparative and trend analyses for rare marine species.

Surveys on the distribution of key species were carried out through interviews with resource users or fishermen who were familiar with surveyed areas. While this approach proved to be effective and efficient (low cost) to provide indications on the occurrence of biodiversity resources and the extent of their distribution, it may not be sufficient for long term biodiversity monitoring. Also, for monitoring the impact of the massive environmental rehabilitation efforts conducted in this area, sound information on population abundance and composition for key species would be valuable. Such assessments may be conducted following protocols that were developed for dolphins, including boat-based line transect surveys combined with dorsal fin photographic identification of dolphins, and recording dolphin sightings from ferries crossing waterways. Participatory horseshoe crab monitoring methodologies involving volunteers from local communities have been developed in a few northeastern states of USA. Such methodologies that concentrate monitoring efforts on beaches during the spawning period could be adapted to collect more systematic information on horseshoe crab populations.

6 POTENTIAL FOR REPLICATION

Replication within the project intervention sites. The project has adopted an innovative approach to replicability by building replication into the project itself rather than assuming it will take place following the project's completion. This involved crosslearning among project sites throughout the project implementation through joint reviews of project achievements and experience sharing and the adaptation of appropriate approaches to remove/mitigate threats to the other sites during the second phase of the project (Outcome 3) on the basis of the information collected through baseline surveys (Outcome 1).

Sanya Based on the success of coral transplantation technology, the developer has proposed to the concerned administrations to extend the rehabilitation of coral reefs in a larger area, which was received favorably. The Sanya Hotsea Coral Reef Ecology Company has decided to invest initially RMB 150 million to establish a coral reef park and a coral eco-rehabilitation demonstration site, and RMB 400 million in a second stage, to rehabilitate 500 ha through transplanting 3 million corals.

Replication at the national level. In order to spread the outcome to the whole project site, and to integrate marine biodiversity conservation and integrated coastal management into the development planning of the 5 demonstration provinces, SOA and the 5 provinces/region signed the *Declaration on Biodiversity in the Coastal Area of China's South Sea* which has been circulated nationwide as an example of successful cooperation between the Chinese Government and GEF/UNDP.

The SCCBD experience will be used as a reference on biodiversity conservation and MPA networking for a new GEF project in China's estuaries.

Documentation of the project experience. A series of best practices and lessons from SCCBD was assembled and practices of marine biodiversity conservation and integrated coastal zone management as implemented in each site and for the whole SCS area were summarized into books published by China Ocean Press and distributed to coastal China provinces and cities:

- Island-based Management of Shellfish and Algae Biodiversity Conservation at Nanji Islands: Practice and Experience
- Inter-provincial Protection of Highly Migratory Species: Practice and Experience
- Integrated Conservation of Coral Reef Biodiversity in Sanya: Practice and Experience
- Sustainable Use of Biodiversity Based on Typical Marine Ecosystems: Practice and Experience
- Biodiversity Management in the Coastal Area of China's South Sea: Experience and Lessons

7 PROCESSES AFFECTING ATTAINMENT OF PROJECT RESULTS

7.1 Preparation and readiness

7.1.1 Project design and site selection

The project strategy developed in two phases around the three intended outcomes was clearly laid out in the project document and followed throughout the implementation. The project tackled the ambitious challenge to develop multi-level capacities and different management approaches simultaneously in five provinces or region, to analyse and share results among sites on a continuous basis, and to replicate relevant experiences in every site. The three components created the required conditions that enabled the successive realization of each component. Indeed, the capacity building component was effective at building the capacity of actors and institutions to develop, implement and analyse pilot approaches to address threats to marine and coastal biodiversity, including raising the understanding and awareness of relevant partners at the provincial and county levels to allow replicating appropriate approaches whenever applicable. The two phases refer to capacity development and development of innovative approaches as a first step, and cross-learning and replicating as a second step. Although this design must have been demanding as it required a continuous evaluation of the results of interventions and assessment of their relevance and adaptability to the other project sites, it proved to be very efficient considering the extent of the capacity development across the five provinces and region, across every segment of the population in each site, and considering the impact of conservation and sustainable management of marine biodiversity and environment in all sites.

To ensure the effectiveness of this design, the selection of the project sites was a strategic step of the project design. The project was implemented in 4 sites that were carefully selected among 11 potential sites on the basis of a series of criteria: i) global significance of the biodiversity present at the site, ii) national significance of the biodiversity present at the site, iii) potential for replicability, iv) cost-effectiveness to achieve sustainable biodiversity benefits, v) existing baseline in terms of management structure and existing capacity.

Relevance to GEF priorities. The project was approved under the GEF-3 focal area related to Biodiversity / Operational Program 2: Coastal, marine and freshwater ecosystems. It is also in line with the GEF-4 strategic long-term objective 1 of the biodiversity focal area which is to catalyze sustainability of PA systems, under the strategic program 2 to increase representation of effectively managed marine PA areas in PA systems.

The Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) had recognized that the integrated management of marine and coastal zones was the most appropriate framework to

tackle problems related to the impact of human activities on marine and coastal biodiversity. The project sought to identify the causes that affect biodiversity trends and to take measures at the ecosystem level, which is also in line with COP recommendations. The project is still relevant to the GEF-4 (2007-2010) long term objectives to (1) catalyse the sustainability of protected area systems and (2) mainstream biodiversity in production landscapes/seascapes and sectors.

7.1.2 Linkages between the project and other interventions in the sector

The project was designed to integrate most advanced practices at the international level on marine biodiversity conservation and sustainable management, and on ICZM. A literature review identified best practices, which included those developed through projects implemented in the same sector in China and region.

A MoU was signed for project partnership with the GEF Yellow Sea Large Marine Ecosystem (YSLME) project – also implemented by UNDP – for staff exchange and project experience-sharing. The SCCBD project sent two staff to the YSLME project office in Korea.

An agreement was signed with the World Nature Fund to conduct joint surveys of the population of Chinese White Dolphins.

SCCBD has sent delegates from the sites to participate in East Asian Sea Congress in 2007 (PEMSEA) in Hainan, IOC Meeting in 2008 in Malaysia, and East Asian Sea Congress in 2009 in the Philippines, to disseminate the experiences and lessons from the project in these forums.

7.1.3 Management and partnership arrangements at the design stage

The project was ambitious and its simultaneous implementation in four involving four provinces and one autonomous region with multiple stakeholders entailed a level of complexity that was rightly addressed in the project design. Key staff and facilities were in place soon after project inception. Clear management arrangements had been defined at the design stage and, overall, seemed appropriate. However, insufficient funding limited the recruitment of international consultants as was planned in the prodoc. This problem was circumvented by NOAA's contribution that allowed to benefit from technical, managerial and planning expertise from a team of US experts to support the project, in addition to the organization of visits of delegations from China in the U.S.

- The project was entrusted to the Ministry of Finance under UNDP NEX arrangements.
- The project was implemented by SOA and the partners of Zhejiang Provincial Marine and Fisheries Bureau, Fujian Provincial Marine and Fisheries Department, Guangdong Provincial Marine and Fisheries Bureau, Hainan Provincial Marine and Fisheries Bureau, and Guangxi Zhuang Autonomous Region Land and Marine Department, NOAA (USA), and Guangxi Stora Enso.
- The project coordination unit (PCU) had the overall responsibility of the implementation of the project. PCU was composed of a full time Project Implementation Coordinator (PIC) and a full time Reporting and Contracting Officer (RCO), and support staff, and was established inside the Department for International Cooperation of SOA, in SOA Headquarter building in Beijing.
- The organization of the implementation structure included the appointment of the director-general of the Department for International Cooperation of SOA as the National Project Director (NPD) and of the Director of the Division for International Cooperation of SOA as the National Project Manager (NPM).
- LPSC, SIUs and Advisory Stakeholder Committee were established at each province or autonomous region and an Interprovincial Coordination Commission of Fujian and Guangdong was created. LPSCs included representatives from key government agencies at the provincial and local levels, and were responsible for facilitating the project implementation locally. In close contact with the PCU, SIUs were responsible for daily project management in their respective site, for assisting in the development of detailed implementation plans and in monitoring project outputs and outcomes. Stakeholder Committees included representatives from fishery association, aquaculture association and tourism sector. One member of the committee sits on the LPSC.

- Staff and Advisor Recruitment for management and technical assistance to the project: The recruitment of staff and advisors to the project was made through internet and newspapers under UNDP guidance and according to the requirements and TORs developed in the ProDoc. Scientists were recruited from the National Marine Environmental Monitoring Centre, Xiamen University, and Third Institute of Oceanography to provide technical support to the PCU for coordinating and implementing the project. From 2007, 2 assistants have been recruited from the Third Institute of Oceanography and from the National Information and Data Service to work full-time to support the PCU.
- An international consultant provided expertise in adaptive management. National consultants have been contracted to provide technical advice to PCU for coordinating and implementing the project.
- The project steering committee (PSC) provided policy guidance and support to the project implementation. The PSC included representatives from SOA, NOAA, UNDP, and Governments of Guangdong, Hainan, Fujian and Zhejiang Provinces and from Guangxi Autonomous Region. The first PSC meeting was held in Beijing after the official launching. On that occasion, the PSC reviewed and approved the Project Implementation Plan which served as a guide for the project's implementation. The PSC was responsible for meeting annually and approving work plans, progress reports, expenditures and budget revisions. Responsibilities notably included supporting the cross-sectoral approach by creating mechanisms for interaction with local NGOs and stakeholders, and encouraging replication of best practices among steering committee's member institutions.
- NOAA and SOA signed a cooperative agreement for the co-funding of the project. NOAA contributed 18 person-time MPA experts as in-kind support, trained MPA managerial staff in the project sites on the GIS application, PA management effectiveness assessment, and formulation of management plans. NOAA also helped to mobilize the donation of 8 sets of GIS software by ESRI Corp., a GIS software developer.

7.2 Country ownership

7.2.1 Consistency with sectoral and development priorities and plans

The project concept was developed in line with national environmental and development priorities and plans of the country and its results are still relevant to current national priorities.

China's Oceanic Agenda 21. The first of 13 action plans identified in China's Oceanic Agenda 21 published in 1996 as part of China's Agenda 21, is the coastal sustainable use and integrated management. The MoF stated that the goals of SCCBD conform totally with the overall ocean development strategies in China as the project greatly enhanced the capacity for coastal management along China's South Sea and provided an important support to the sustainable development of marine resources in China.

The activities and objectives of SCCBD were consistent with China's **11th Five-Year Economic Development Plan**. The project also succeeded in increasing and diversifying job opportunities for marginalized populations which is consistent with government's current development priorities to alleviate poverty in the region.

National Strategy and Action Plan for Biodiversity Conservation (NBSAP). The activities and objectives of SCCBD were consistent with the National Strategy and Action Plan for Biodiversity Conservation. The first version of China's NBSAP, developed in 1994, had identified 7 objectives. The SCCBD project has contributed to meet 4 of them, related to the improvement of the national network of natural reserves and other PAs, to the conservation of globally significant wild species, to the establishment of a nationwide information and monitoring network for biodiversity conservation, and to the coordination of biodiversity conservation and sustainable use. In the description of biodiversity resources status, this document reported a decrease in mangrove forest cover along the coast of the South China Sea from 50,000 ha in the early '50s to 20,000 ha in the early '90s, and the deterioration of 80% of coral reefs along the coast of Hainan Island. The root causes of the degradation of biodiversity resources included the high demographic pressure, overexploitation of resources, pollution along coastal areas, lack of enforcement of laws and policies, lack of coordination and cooperation among government entities, lack of awareness by government staff and general public about the

importance of biodiversity. The SCCBD project is addressing most of these root causes in one or more sites.

The 4th national report on the implementation of the CBD submitted in 2008 states a few priorities with which the SCCBD project is still in line with current priorities, including to carry out nationwide surveys and inventories and to establish biodiversity monitoring, and to improve national nature reserve system and to reinforce their management.

In the few years preceding the project inception, China had adopted a series of national biodiversity conservation strategies and plans¹¹, and promulgated or revised numerous laws and regulations¹² for the preservation of marine resources and sustainable management of the marine environment, which illustrates the high priority given to this domain by the Government. The current project was developed in accordance with these strategies and has contributed to their implementation.

The project conforms with the strategic objectives and priority actions in *China's Strategies and Action Plan for Biodiversity Conservation (2011-2030)*, namely to meet or maintain the 2015 targets of 15% of land area protected for *in situ* conservation, which includes the project sites, and 90% of key species and representative ecosystems protected. The project is consistent with the activities stated in *The Outline Program for National Ocean Development*, namely to improve the conservation of marine biodiversity and the protection of key marine habitat and landscapes through marine ecological restoration and conservation. And finally, the project conforms with the tasks listed in the *Key Tasks of Marine Environmental Protection in 2010* of SOA.

7.2.2 Involvement of relevant country representatives from government and civil society

The relevant country representatives from government and civil society were involved in the project. A great part of this project success is attributable to the high commitment and active participation of the relevant stakeholders at every level, from the government representatives at the provincial, municipal and county levels to the local resources users and the students in local schools around MPAs. All relevant stakeholders were involved in every phase of the project, from its preparation in the framework of the PDF-B, to its implementation, evaluation, and the dissemination of its best practices through meetings.

Advisory Stakeholder Committees were established at each province or autonomous region. They included representatives from fishery association, aquaculture association and tourism sector and one member of the committee sits on the LPSC.

7.2.3 Government approval of policies in line with the project objectives

Different levels of government have approved or revised policies or regulatory frameworks in line with the project's objectives. These regulations and plans provide a legislative and policy framework that will further support the project outcomes and will contribute to their sustainability and replicability.

Hainan (Sanya) The *Regulations on Marine Environment Protection of Hainan Province* and the revised edition of *Regulations on coral reef conservation of Hainan Province* approved by the Standing Committee of the Provincial People's Congress and promulgated in 2009, establish a control of total discharge in marine protected areas, identify restrictive regulations on discharge of wastewater, and lay a legal foundation for integrated pollution control to maintain coral ecosystem health.

¹¹ *National Marine Function Zoning (2002)*, *National Marine Economy Development Plan (Outline) (2003)*, *National Wetlands Conservation Projects Plan (2004)*, *China Marine Development Plan (2005)*, *Marine Environment Protection Plan in Key Sea Areas (2005)*, *National Nature Reserves Development Plan (2005)*, *China Aquatic Biological Resources Conservation Action Plan (2005)* and *China Prevention and Control for Alien Invasive Species Plan (2005)*.

¹² *Implementation Regulations on Conservation of Aquatic Wildlife (1993)*, *Regulation on Nature Reserves (1994)*, *Rule of Marine Nature Reserves (1996)*, *Wild Animal Conservation Law (1988)*, *Marine Environment Protection Law (Revised, 1999)*, *Fishery Law (Revised, 2000)*, *Sea Areas Management Law (2002)*, *Environment Impact Assessment Law (2002)*, and *Sea Areas Management Law, Marine Environment Protection Law, Marine Function Zoning System*.

In accordance with the user-pays principle, the *Regulations of Hainan Province on the Administration of Collection of Sea Area Use Fee* promulgated by the Hainan Provincial Government stipulates that the marine use fee should be included in the general financial budget management and arranged by financial departments of all levels for governance, protection and management of sea areas.

Fujian-Guangdong (Dongshan – Nan’ao) During the project implementation,

- Guangdong Province promulgated *Regulations of Marine Use Management of Guangdong Province* and *Regulations of Wetland Protection of Guangdong Province*;
- Fujian Province promulgated *Regulations of Marine Use Management of Fujian Province* and *Regulations of Temporary Marine Use for Sand Dredging of Fujian Province*; and
- Shantou Municipality promulgated *Regulations of Shallow Sea and Mudflat Aquaculture Protection and Management of Shantou City* and *Shantou Oceanic and Fisheries Bureau Regulations of Rewarding Protection of Whales, Dolphins and Sea Turtles* (Trial version).

After collaborating for 5 years through the inter-provincial coordination committee, the Ocean and Fishery Departments of Fujian and Guangdong Provinces co-signed the *Outline of Action Plan of Dongshan-Nan’ao for Inter-provincial Biodiversity Conservation*. Based on the analysis of biodiversity and threats, as well as on multi-stakeholder negotiations, the Outline of Action Plan adopted innovative and adaptive management approaches in ICM aimed at establishing new type of partnership to reduce and prevent threats to coastal ecosystem integrity and protect rare migratory species in the key zone. Oceanic and fisheries authorities of Zhangzhou, Shantou, Dongshan and Nan’ao jointly implemented this Outline of Action Plan. The action plan sets up operational rules including periodical meetings, alternate leadership between provinces, information sharing, communication, co-monitoring and reporting, and effectively protecting highly migratory species and the migratory corridor.

To coordinate marine function zoning, the Ocean and Fisheries administrative authorities of Shantou, Zhangzhou, Nan’ao and Dongshan signed the *Coordination Opinions of Shantou, Guangdong and Zhangzhou, Fujian Concerning the Marine Function Zoning in the Bordering Sea Area* in 2010. This agreement states that the two cities and counties should designate the migratory function of the demonstration site as breeding area for fisheries in the future revisions of the zoning, and that effective measures be taken to strictly control the marine-related constructions, to implement marine environment protection measures, and to effectively protect the habitats of rare species like Chinese White Dolphin, sea turtles and horseshoe crabs.

7.2.4 Government’s financial commitments

Until June 30th 2010, the local Governments’ in-kind contributions added up to 30,562,225 USD which amounted to 348% of the contribution pledged according to the project document. The fact that contributions are much higher than the amounts pledged in the project document demonstrates Governments’ high commitment and ownership towards the project objectives.

7.3 Stakeholder involvement

The involvement of stakeholders was based on a sound analysis of stakeholders conducted during the preparatory phase and validated during the inception phase. This analysis allowed involving the following groups, as relevant, in the various sites:

- Government agencies, such as SOA, Marine and Fisheries Bureaus at the provincial, municipal and county levels, MPAs administrations, municipal, county and town governments, county environmental protection bureaus, Ocean surveillance brigade (Guangxi), Marine monitoring and forecasting centre (Guangxi), Forestry bureau (Beihai), oceanic administrative offices;
- Local organizations, private enterprises and investors, including tourism and fisheries;
- Scientific and academic institutions, research institutes, SOA’s Third Institute of Oceanography, universities, and rescue centers;
- Educational institutions, middle schools;
- Local communities and village conservation groups.

7.3.1 Stakeholder participation in design stages

In 2001 and 2002¹³, during the project formulation stage (PDF-B), stakeholders were involved in a vast consultation process leading to the definition of objectives, outputs and activities. Consultations with members of local communities located around potential sites, including direct resource users, tourism operators, producers, researchers from local institutes and universities, teachers at primary and secondary schools, and students from secondary schools, were undertaken about threats to biodiversity, root causes and local livelihoods. These consultations allowed identifying potential socioeconomic impacts related to the project interventions and groups that were likely to be significantly affected. Opinions and suggestions for alternative project activities were also collected. Potentially affected and vulnerable groups included small fishermen, mangrove resources collectors, aquaculture farmers, and tourism sector operators.

Recommendations were made to get these groups closely involved in the project implementation through a formal structure for participation, on the one hand because of their high vulnerability to project interventions likely to change resource use patterns, and on the other hand, because of their thorough knowledge of ecosystems and resources.

Consultations were also held with Government stakeholders at the provincial, city and county levels through regional and national workshops to collect their main priorities and concerns, to obtain their perspective on problems affecting the project sites, and to validate the final threat analysis and the resulting logical framework. This inclusive process is all the more commendable that participation of local stakeholders in planning and decision-making was still new in China.

7.3.2 Local stakeholders and resource users' participation

The project formulated a stakeholder participation plan, including the promotion of stakeholders understanding and awareness of their rights and responsibilities, coordination and networking of stakeholders, capacity building and education and training of stakeholders. Activities related to the participation of stakeholders and the public included information dissemination, coordination among various stakeholders, and participation of stakeholders in decision making for the conservation biodiversity.

Local stakeholder participation in decision-making and project implementation was ensured through advisory committees of direct resource users and LPSCs established in every province and autonomous region. Advisory committees of direct resource users included representatives from fishermen associations, aquaculture associations, and tourism industry representatives. They were established to ensure that resource users could provide their inputs into the identification, implementation and evaluation of project activities and thus ensure that the concerns and interests of the people most likely to be affected by the project interventions would be taken into consideration in the project's decision-making process. The involvement of fishermen associations was effective in persuading fishermen to abandon illegal fishing around coral reefs.

LPSCs established in every province or autonomous region were the formal structures for local stakeholders participation. These committees included representatives from key government agencies at the provincial and local levels, and representatives of advisory committees. These committees and local steering committees both provided their input to the site implementation units, which in turn, directed their input to the project national steering committee.

The participation of local communities in the project implementation, including school children, was also encouraged through specific activities, such as beach clean-up, removal of marine debris, cultural events for raising awareness, drawing contests, and rescuing of stranded animals (turtles or dolphins). The involvement of students in awareness activities proved to be very effective as they acted as a privileged channel of communication with their families to convey conservation messages into their homes.

As the Shankou Mangrove MPA did not have enough staff to patrol the mangrove for effective enforcement, 10 village rs from the neighbouring communities were hired to act as rangers. Not only

¹³ Project Brief, 2002.

this reinforced the management capacity, but also improved the performance as rangers were familiar with the local environment, resources and culture, and knew the local people. In addition to patrolling, these village rangers were in charge of disseminating relevant regulations on mangroves and collecting villagers' concerns and requests. The rangers joined the VCG network, thus improving enforcement effectiveness.

7.3.3 Information dissemination during project implementation

Information dissemination may serve various purposes, namely enhancing project coordination and efficiency among implementing partners and between local and central levels, and fostering local stakeholders and public participation through developing their understanding of the issues and ownership of the resources.

Project level. A communication strategy for the project was developed and presented during the first PSC meeting. To foster participation and facilitate coordination, project information was disseminated through the participatory mechanism involving SIUs, LPSCs and advisory committees, through meetings and activities. Dissemination of information is also an integral part of the stakeholder participation plan formulated by the project.

At the project-level, the facilitation of the project implementation by the PCU involved the following dissemination activities:

- Translation and dissemination of ProDoc

The Project Document was translated into Chinese and printed and disseminated to various stakeholders and SIUs, as the basic guidelines for preparing local implementation plan and project management

- Formulation of a Project Management Manual and of Project Facility Procurement procedures.

- Newsletter and promotional material

PCU published Newsletter No. 1 of SCCBD, which presented the project background and launching ceremony, and following ones every quarter to share information about the project implementation.

Promotional material and posters were developed in every site

- Communication lists were established to ensure systematic dissemination
- Promotional and educational material was developed and distributed, namely popular science textbooks on marine biodiversity resources. In Nanji, an essay written by a member of the SIU "*The Nanji Islands are the Home for Shellfishes and Algae*" was used as an educational material for Senior High School Students in Zhejiang thus reaching over one million students every year from 2005 to 2010. Another popular science book jointly written by SIU members, "*Touring in the Kingdom of Shellfishes and Algae*" was used as teaching material in local middle and primary schools reaching over 100,000 students in Pingyang County.

National and international levels. Information dissemination also targeted the larger national and international audience through the organization of events and forums to disseminate the project experience.

- China's Training and Education Centre for Marine Biodiversity Conservation and Ecosystem Management was established in Xiamen in 2006 with the support of SOA, NOAA, and UNDP. The centre constitutes a platform to promote exchanges among MPAs and communication among MPA managers. Since its establishment, with the contribution of SOA's Third Institute of Oceanography, 300 persons were trained through 18 courses and workshops. This training and education centre is a great contribution to ensure the dissemination of good practices for the conservation and sustainable management of marine and coastal biodiversity developed through the project.
- Xiamen World Ocean Week is a forum co-sponsored by SOA, Xiamen Government, PEMSEA, and UNDP-Beijing to exchange experiences and information on ocean policies, management, and science, and coastal protection and conservation. Every year, the forum gathered about 3000 delegates from international organizations, cities, enterprises, NGOs and academic institutions from over 50 countries. Delegates from various SCCBD sites participated in the forums, especially

in a special session on marine biodiversity conservation held during the 2009 World Ocean Week to introduce SCCBD achievements and exchange with participants.

- SCCBD and Zhejiang Provincial Government have co-sponsored the Wenzhou Marine Civilization Forum since 2008 to promote the importance of marine biodiversity and the role of integrated coastal management in marine ecological civilization. Through this international forum, SCCBD disseminated and exchanged lessons and best practices with the participants.
- SCCBD facilitated the participation of delegates from the sites to participate in the East Asian Sea Congress in 2007 in Hainan, IOC Meeting in 2008 in Malaysia, and East Asian Sea Congress in 2009 in the Philippines. The delegates presented the experiences and lessons from the project which raised interest among the participants to these forums.

7.4 Financial planning and co-financing

7.4.1 Financing plan and actual contributions

The total project budget is US\$ 12,749,000. Planned contributions from various partners as indicated in the project document are provided in Table 8 and compared to paid contributions as of July 10th 2011.

Table 8 indicates that the payments made as of 10th July 2011 are much higher – 301% – than planned contributions as stated in the project document. GEF contributions amounted to 3,354,965 USD which represents 8.7% of the total project cost. Co-financing represents 91.3% of the total cost. According to the budget presented in the project document, planned GEF contribution represented 27.6% of the total budget while co-financing represented 72.4%.

Table 8. Financing plan and actual contributions from partners as of July 10th 2011 (US\$). July 10th 2011 figures are from Executive Report 2011.

	GEF	UNDP	Government of China	NOAA	Stora-Enso*	ESRI**	TOTAL
Planned	3,195,000	n.d.		460,000			3,655,000
PDF-B	320,000	n.d.					320,000
Planned in kind		n.d.	8,774,000				8,774,000
Total planned	3,515,000	n.d.	8,774,000	460,000	0	0	12,749,000
Paid as of July 10 2011	3,354,965	n.d.	33,561,900 ¹⁴	460,000	230,000	800,000	38,407,263
Paid vs planned	95%	n.d.	378%	100%			301%
% of total	8.7%	-	87.4%	1.2%	0.6%	2.1%	100%

*Contribution leveraged through UNDP

**Contribution leveraged through SOA

Until July 10th 2010, the Governments' total (in-kind and financial) contributions through SOA, provincial departments and project site local governments added up to 33,561,900 USD which amounts to 378% of the pledged contribution at project inception. The fact that contributions are much higher than the amounts pledged in the project document demonstrates Governments' high commitment and ownership towards the project objectives, which may be – at least partly attributable to the effectiveness of the projects investments in awareness and education.

¹⁴ Converted from RMB at rate of 6.3

Leveraged funds

Stora-Enso and ESRI private contributions were respectively leveraged through UNDP's and NOAA's interventions. The public-private partnership established with Guangxi Stora-Enso, a pulp and paper manufacturer operating in the area of Tieshangang, has proved to be a fruitful one as Stora Enso contributed 230,000 USD to assess the impact of their activities on the biodiversity, set up a monitoring system for coastal biodiversity and contribute to restore key forests and mangroves. The contribution of ESRI Corp., a GIS software developer, has been essential for the establishment of the monitoring systems through the donation of 8 sets of GIS software.

Local leverage. Leveraged funds were contributed in every site as a result of effective advocacy from the project staff and reflect the increased awareness of local authorities of the importance of coastal biodiversity conservation for a sustainable local development.

- The successful results for coral transplantation in Sanya have gained great support from the Hainan Provincial Government who pledged over one hundred million RMB for coral reproduction and ecological restoration.
- Since 2007, Sanya has received annually a special fund as a subsidy from the Department of Ocean and Fishery of Hainan Province, which amount has appreciably increased every year.
- A special financial support of 8.6 million RMB was allocated for infrastructure construction and capacity building in Shankou Mangrove Reserve. One million RMB was allocated by the Ministry of Finance to build a management station in Hepu National Dugong Reserve. With such a great financial input, the management capacity at the site has been greatly improved with the introduction of best practices through SCCBD support which contributed to a successful 10 year assessment by MAB China for the Mangrove Reserve.
- Through the baseline survey, the Shankou Reserve obtained spatiotemporal data on the evolution of marine biodiversity and environment, and on main threats, and proposed corrective measures in accordance with the adaptive management approach. This allowed securing over 10 million RMB for the establishment of a new wetland nature reserve.

UNDP. UNDP's in-kind contribution was not estimated in the project document or in the final reports. Section 7.5 presents main aspects of their support to the project.

Local communities. In-kind contribution of local communities was not estimated in the project document although the achievement of many results rests on their active participation. Unfortunately, it was not possible to provide an estimation of this essential contribution in the TE report to reflect the beneficiaries investment in the project activities, without which most project results would not have been attained.

7.4.2 Expenditure statement per outcome and cofinancing source

Table 9 presents the project expenditure statement by 10th July 2011.

Table 9. Expenditure statement (in US\$) per outcome and co-financing source from project start to 10th July 2011.

Outcome	GEF	NOAA	Gov.	Stora-Enso	ESRI	TOTAL
1. Capacity building	1,070,149	n.d.	n.d.	-	800,000	n.d.
2. Demonstration	1,012,947	n.d.	n.d.	164,121	-	n.d.
3. Experience sharing	420,826	n.d.	n.d.	6,725	-	n.d.
Management	851,042	n.d.	n.d.	59,552	-	n.d.
Total	3,354,965	460,000	33,561,900	230,398	800,000	38,407,263

Table 10. Distribution of GEF contribution (in US\$) among the project outcomes as planned in the Project Brief and according to the actual costs.

	Project Brief		Actual costs (without mngt costs)	
	USD	%	USD	%
1. Capacity building	820,000	26	1,070,149	43
2. Demonstration	1,695,000	54	1,012,947	40
3. Experience sharing	610,000	20	420,826	17
Total	3,125,000	100	2,503,923	100

When compared to the planned GEF contribution presented in the financial arrangements of the Project Brief (Table 10), a larger proportion of the actual GEF contribution was allocated to the first outcome related to capacity building of MPAs and a relatively lower proportion to the second outcome related to innovative demonstration in the project sites.

7.5 UNDP supervision and backstopping

In accordance with the national execution implementation mode, UNDP's support to SOA included contributing to develop the project and draft the project document following GEF requirements, hiring the Project Implementation Coordinator, guiding the project for the recruitment of staff and advisors, helping the PCU through project start up and execution, providing guidance on UNDP and GEF procedures and requirements namely for reporting, participating to PSC meetings and organizing MTE and TE. UNDP ensured that adequate financial resources were made available on an ongoing basis through administering the payment of advances. UNDP also supported tendering of international contracts, procurement of equipment and helped with arrangement of trainings and workshops. In 2006, with SOA and NOAA, UNDP supported the establishment of China's Training and Education Centre for Marine Biodiversity Conservation and Ecosystem Management in Xiamen. With SOA, Xiamen Government and PEMSEA, UNDP-Beijing co-sponsored Xiamen World Ocean Week which is a yearly forum to exchange experiences and information on ocean policies, management, and science, and coastal protection and conservation.

The appreciation of the implementing agency is that UNDP's support was dedicated and fully involved in the project implementation. UNDP provided valuable technical guidance, especially during the first years of the project as SOA was still inexperienced at implementing an international project and the PCU was formed by only two persons.

UNDP mediated the establishment of the partnership between the project and Stora Enso Guangxi Forest-Pulp-and-Paper Integration, which is affiliated to Stora Enso group, a Finnish-Swedish pulp and paper manufacturer which is among the world's largest pulp and paper manufacturers. Stora Enso contributed 230,000 USD to assess the impact of their activities on the biodiversity in the area of Tieshangang where the company is conducting its operations, set up a monitoring system for coastal biodiversity and contribute to restore key forests and mangroves.

UNDP representatives visited some project sites from 2008 to 2011 (information not available in 2006 and 2007). In 2010, UNDP-China Resident Representative and Programme Manager visited Shankou Mangrove National Nature Reserve. The mission stressed the importance of mainstreaming marine environment conservation into local development plans to ensure the future health of MPAs. UNDP Programme Manager participated in a workshop in Nan'ao in June 2011 for the preparation of the TE.

8 LESSONS LEARNED / BEST PRACTICES

Project formulation The design of the project around 3 outcomes integrating capacity building, innovative demonstrations and cross-learning for replication / adaptation of tested best practices among five sites of significant biodiversity during the course of the project implementation requested the continuous evaluation and enhancement of the interventions and allowed to extend the impact of conservation measures across the coastal zone of China's South Sea.

The technical and socioeconomic surveys and consultations conducted during the preparatory phase of the project ensured the project interventions specifically tackled the pressures and threats to

marine biodiversity, but also the allowed the participation of resource users, so that identified alternative livelihoods matched the needs of affected stakeholders.

The careful identification of stakeholders at each site allowed involving all relevant actors having a concern for marine resources and environment which has been a key factor to ensure ownership and mainstreaming of marine biodiversity conservation into development plans.

The decentralized management structure (SIUs and LPSCs) under the sustained guidance of the PCU and PSC fostered greater ownership at multiple levels and multi-stakeholder involvement for an effective implementation of the project through the achievement of 17 subcontracts.

Project implementation and coordination The PCU has exercised vigilant monitoring of project progress and identified at the end of each year, the necessary adjustments and aspects to strengthen to ensure the achievement of intended results as effectively and efficiently as possible. This wise management and coordination is likely a key factor in the success of the project.

Monitoring and evaluation Site-specific monitoring, evaluation and reporting were effective management instruments for ensuring the achievement of project intended results, addressing challenges and adapting to changing circumstances.

Baseline surveys were essential to document the reference situation in terms of environment, biodiversity, socioeconomy and threats, thus providing specific information to develop demonstration tools and approaches (outcome 2) and a set of benchmarks for long-term biodiversity and socioeconomic monitoring and impact assessment.

Joint annual review and work planning involving all SIUs ensured the effective coordination of the project implementation in the 5 project sites, a common understanding of issues and interventions among project teams and stakeholders, and sharing experiences among all sites

Communication and partnership with local stakeholders. Building a trusting relationship with the local communities is a key factor of success in the development of processes which require their adherence at various levels. This is accomplished by maintaining a presence, a genuine communication, by involving them in the planning and decision-making, and making tangible demonstrations that the project purpose is their benefit.

Participatory decision-making and interactive consultation are effective approaches to devise socially acceptable solutions while avoiding the conflicts related to the implementation of conservation measures. Yet, this represents a real challenge and takes time, especially when addressing new issues and when reconsidering traditional or usual ways of doing things. The active involvement of community leaders in the facilitation of consultation processes has been effective for building consensus.

9 RECOMMENDATIONS

R1 This project has developed a wealth of innovative practices for the management and conservation of marine and coastal biodiversity, including innovative technologies for biological restoration. Best practices documented for each demonstration site could be disseminated more widely by producing more synthetic and user-friendly presentations (leaflets, posters, etc.).

R2 This project has successfully focused on mitigating or removing local threats to marine coastal biodiversity and achieved conservation results. However, future interventions should also address adaptation or mitigation of the effects of global environmental changes which large scale negative impacts could cancel out these biodiversity benefits in the long-term.

R3 The implementation of future projects would be enhanced by a careful identification of indicators better reflecting the achievement of outcomes rather than outputs, and meeting the SMART criteria. The use of such indicators would facilitate the application of the adaptive management approach.

R4 Ensure that the long term monitoring system established in every site includes a permanent monitoring and assessment of the SCCBD project impacts on biodiversity and threats to allow the identifying and implementing continuous adjustments to the conservation and sustainable management measures following the adaptive management principles.

R5 Although it is clear that the project has contributed to develop successful alternative livelihoods for a number of local users who had to change their use of resources and pay the opportunity costs related to the adoption of conservation measures, the actual impact on all users at each site remains somewhat elusive. This aspect could be strengthened by a more systematic assessment of the impact of changes in resource use patterns on local communities and their livelihood in the short and the long term.

R6 To replicate the SCCBD pilot marine biodiversity management methodologies and procedures, it is recommended that SOA and SIUs prepare technical guidelines for marine biodiversity management. These guidelines could include the following topics:

- (1) How to conduct a baseline survey in a MPA;
- (2) Participatory community and stakeholders consultation for the development of a MPA management plan and for the participatory identification and development of alternative livelihoods for affected stakeholders;
- (3) Participatory monitoring of marine biodiversity involving direct resource users;
- (4) Design and implementation of biodiversity education and awareness building programs for local communities. The guidelines could include: (1) major approaches, actions and channels to build public awareness; (2) major actors, stakeholders and target groups; (3) potential financial resources to support awareness activities; (4) how to assess and evaluate the effectiveness and impacts of public education actions.

R7 Further strengthen and institutionalize multi-stakeholders consultation mechanisms for planning and implementing biodiversity conservation projects. Consulting with and reaching an agreement with relevant resource users, i.e. fishermen and villagers, and stakeholders, i.e. tourism companies, governmental line agencies and local governments, should be considered as prerequisites to the adoption of any conservation activity. MPA staff should be trained to moderate and facilitate such consultations.

R8 Further strengthen and increase multilateral and bilateral international cooperation and partnerships in marine biodiversity conservation to focus on intergovernmental policy dialogue, biodiversity conservation best practices, improvement of technical and management staff capacities through international exchanges, and knowledge management.

R9 When key project reports and technical documents and policy recommendations are not available in English, it would be useful to provide a short summary of the main decisions or main issues in English to enable international cooperation and exchange.

10 CONSULTED DOCUMENTS

Global Environment Facility Evaluation Office. 2008. *Guidelines for GEF Agencies in Conducting Terminal Evaluations*. Evaluation Document No. 3

Liang Q., Wang X.H. and B.G. Lees. 2011. *Community Participation in the Management of Marine Protected Areas in China*. LMD Journal Vol. II. 10 p.

Qiu W., Wang B., Jones P.J.S. and J.C. Axmacher. 2009. *Challenges in developing China's marine protected area system*. Marine Policy 33 (4): 599-605. doi:10.1016/j.marpol.2008.12.05

UNEP. 2010. Global Synthesis. *A report from the Regional Seas Conventions and Action Plans for the Marine Biodiversity Assessment and Outlook Series*. UNEP Regional Seas Programme. 58 p.

Management Reports produced by the UNDP/GEF Project:

Project Document (2005) and Project Brief (2002)

Inception report (2006)

MidTerm Evaluation Report and annexes (2009)

Annual Work Plans (AWP) 2005, 2006, 2007, 2008, 2009, 2010, 2011

Project Implementation Reports (PIR) 2006, 2007, 2008, 2009, 2010. The PIR of 2011 was made available after the draft TE report had been submitted and commented on and thus was not included in the evaluation.

Self Evaluation Report on UNDP/GEF/SOA Project on Marine Biodiversity Management in the Coastal Area of China's South Sea, Project Coordination Unit of SCCBD Project, 2011

Technical Report on UNDP/GEF/SOA SCCBD Project, SCCBD PCU, 2011

Executive Report on UNDP/GEF/SOA SCCBD Project, SCCBD PCU, 2011

Final Report on UNDP/GEF/SOA SCCBD Project, SCCBD PCU, 2011

Evaluation Report of SCCBD by MOF, 2011

Management Plan (2006-2010) of Guangxi Shankou National Mangrove Reserve, Shankou Natural Reserve Administration, 2003

Self Evaluation Report, SCCBD, Nanji Island, SIU, Zhejiang, 2011

Self Evaluation Report, SCCBD, Dongshan Island, SIU, Fujian, 2011

Self Evaluation Report, SCCBD, Nan'ao Island, SIU, Guangdong, 2011

Self Evaluation Report, SCCBD, Shankou Mangrove Natural Reserve, SIU, Guangxi, 2011

Self Evaluation Report, SCCBD, Hainan Sanya, SIU, Hainan, 2011

Tables

Table 1. Project progress with regard to the development objective

Table 2. Project progress with regard to the intended outcome 1

Table 3. Project progress with regard to the intended outcome 2

Table 4. Project progress with regard to the intended outcome 3

Table 5. Summary of the assessment of development objective and outcomes

Table 6. Summary of the assessment of aspects of sustainability for each site

Table 7. Comments on indicators

Table 8. Financing plan and actual contributions from partners as of July 10th 2011 (US\$)

Table 9. Expenditure statement (in US\$) per outcome and co-financing source

Table 10. Distribution of GEF contribution (in US\$) among the project outcomes as planned in the Project Brief and according to the actual costs.

Annexes

Annex 1. Project identification

Annex 2. Project logical framework

Annex 3. Terms of reference

Annex 4. List of persons interviewed

Annex 5. Itinerary of field visit

Annex 6. Questions to guide interviews

Annex 7. GEF tracking tool for the Biodiversity Strategic Priority #1

Annex 1. Project Identification

I. Project Identification

GEF Project ID: 964
GEF Agency Project ID: 41691
Countries: China
Project Title: Biodiversity Management in the Coastal Area of China's South Sea
GEF Agency: UNDP

II. Dates

Milestone	Expected date	Actual date
CEO endorsement/approval		Dec 21 2004
Agency approval date		Feb 2 2005
Implementation start		Dec 10 2005
Midterm evaluation		Nov 1 2008
Project completion	Dec 31 2012	
Terminal evaluation completion	June 2011	
Project closing		

Annex 2. Logical framework (from Technical Report UNDP/GEF/SOA Project on Biodiversity Management in the Coastal Area of China's South Sea, 2011)

	Description	Verifiable Indicators	Means of Verification	Assumptions/risks
Development Objective	To ensure long-term conservation and sustainable use of marine biodiversity in China's South Sea coastal area	<u>By the end of the project:</u> In Sanya: <ul style="list-style-type: none"> Coverage of live coral area in the site stabilized and extending with indicator species such as parrotfish, groupers and giant clams coming back. One meter additional depth of water transparency 	<ul style="list-style-type: none"> Project monitoring reports SOA and MPA reports 	Demonstration will be replicated to reduce threats.
		In Shankou and others: <ul style="list-style-type: none"> Survival rate of piloted transplanted mangrove higher than 80%; VCGs established and put into operation. No removal of mangroves for other uses; area of mangrove coverage increases due to plantation activities; Recovery of seagrass beds by more than 80% for Dugong by dredging the ditches and removal of aquaculture facilities and a. 	<ul style="list-style-type: none"> Project monitoring reports SOA and MPA reports Survey report of seagrass and an assessment of its state of health 	
		In Nanji <ul style="list-style-type: none"> Algae and shellfish are in better state of health. 		
		In Dongshan-Nan'ao <ul style="list-style-type: none"> Increased records of migratory species, especially Chinese white dolphins, horseshoe crabs and marine turtles in the waters; Strangled or stranded migratory species are rescued and released into waters. 	<ul style="list-style-type: none"> Survey report SOA and MPA reports 	
		<u>Over the longer term at additional sites in China's South Sea coastal area:</u> <ul style="list-style-type: none"> Coverage of live coral areas stabilized and extending Indicator species such as parrotfish, groupers and giant clams coming back in areas of coral reefs Maintenance or increase in mangrove habitats Maintenance or increase in seagrass habitats Increased records of migratory species, especially Chinese white dolphins, horseshoe crabs and marine turtles in the waters 		
Project objective	To establish conservation and sustainable use through multi-stakeholder management of marine biodiversity at four demonstration sites, together with mechanisms for replicating these approaches across China's South Sea coastal area	<ul style="list-style-type: none"> Each of the 4 MPAs are being managed effectively .This will include increased patrolling of MPA territories and long-term reduction of infringements on MPA regulations, financial sustainability in the pilot MPA and financial arrangements in place to lead to financial sustainability in the remaining MPAs. Stakeholders at all sites are working together in the planning, management and conservation of natural resources through partnerships, co-management and other participatory mechanisms Land-based sources of pollution (wastewater, agricultural runoff and sedimentation) are reduced to non damaging levels for biodiversity at all sites (based on scientific assessments). Ship-based sources of pollution or damage (oil, solid waste, boat anchorage) are reduced to non damaging levels for biodiversity at all sites. Inappropriate and destructive fishing methods (dynamite, cyanide, electric) are minimized at all sites. Overharvesting (to be determined by scientific assessments) of fish and shellfish is halted at all sites. 	<ol style="list-style-type: none"> Documented policy revisions and minutes from local inter-sectoral meetings MPA records on encroachment. Socio-economic data on livelihood sources in the site area Records of partnership conservation programs 	

	Description	Verifiable Indicators	Means of Verification	Assumptions/risks
		<ul style="list-style-type: none"> Removal of coral is minimized at all reef sites Coral damage from diving activities is minimized at all reef sites. 		
Immediate Objective 1: Strengthen conservation and sustainable use management capacities at four existing MPAs				
Immediate Objectives	Immediate Objective 1.1: Conservation capacities strengthened at Nanji Islands	1.1.1 MPA infrastructure visibly improved	Site visits and reports by PCU staff; PCU annual reports submitted to and approved by PSC; MPA reports submitted to provincial-level OFB and summarized by PCU in its annual reports	Financing will be available and applied towards maintenance of the improved infrastructure
		1.1.2 MPA staff skills demonstrably improved	Training programme is included in inception report; progress recorded in training section of PCU annual reports	Trained staff remain with MPA
		1.1.3 Biological monitoring programme strengthened	Site visits and reports by PCU staff; PCU annual reports submitted to and approved by PSC	Recommendations derived from enhanced monitoring information are acted upon by decision-makers when necessary
	Immediate Objective 1.2: Conservation capacities strengthened at Sanya Coral Reef Reserve	Two biodiversity monitoring stations are established and operating (yr 2)	Site visits and reports by PCU staff; PCU annual reports submitted to and approved by PSC	MPA staff have adequate skills in data interpretation and analysis (see 1.2.3)
		1.2.1 Pilot coral reef transplantation is undertaken (yrs 1-2) and results are assessed (yrs 4 and 7)	MPA reports submitted to provincial-level OFB and summarized by PCU in its annual reports	Some risk that reef transplantation will not prove a very effective conservation method for local waters
		1.2.2 MPA staff and volunteer divers possess enhanced technical skills following completion of relevant training courses	Training programme included in inception report; progress recorded in training section of PCU annual reports	Trained staff remain with MPA
		1.2.3 GIS-based maps of biodiversity hotspots are available and in use by managers (yr 3)	Biodiversity hotspots maps	Recommendations derived from enhanced biodiversity information are acted upon by decision-makers
		1.2.4 Long-term biological monitoring programme is in operation (yr 3)	Report describing monitoring programme	Enhanced monitoring information is acted upon by decision-makers
	Immediate Objective 1.3: Conservation capacities strengthened at Shankou	<ul style="list-style-type: none"> GEF-supported MPA investments are implemented as follows: <ul style="list-style-type: none"> Equipment received and in use (yr 1) Co-financed investments are implemented as follows: 	<ul style="list-style-type: none"> Site visits and reports by PCU staff; PCU annual reports submitted to and 	<ul style="list-style-type: none"> Equipment is well maintained and consumables can be

	Description	Verifiable Indicators	Means of Verification	Assumptions/risks
	Mangrove Reserve and the Dugong Reserve	<ul style="list-style-type: none"> ➢ Targeted restoration of mangrove and seagrass habitats. Est. area of former = 50 ha; latter area TBD. • Detailed zonation scheme for MPAs developed • Integrated management capacity involving local Governments and agencies (ICM approach) enhanced 	<ul style="list-style-type: none"> approved by PSC • MPA reports submitted to provincial-level DoF and summarized by PCU in its annual reports • PCU monitoring report • PCU Annual Reports, section on enhancing inter-sectoral co-ordination at project sites • Zonation scheme 	<ul style="list-style-type: none"> afforded • Line ministries co-operate with inter-sectoral strategies
Immediate Objective 2: Develop, test and demonstrate tools, instruments and approaches for addressing the root causes of critical threats to marine biodiversity in China's South Sea coastal area				
	Immediate objective 2.1: The use of biodiversity overlays in planning is demonstrated at Nanji Islands	<ul style="list-style-type: none"> • Comprehensive township-level master plan for Nanji Islands developed • Pilot implementation of master plan undertaken 	<ul style="list-style-type: none"> Master plan Project progress reports 	Existing EIA provisions are enforced
	Immediate objective 2.2: Integrated pollution control is demonstrated at Sanya Coral Reef Reserve	<ul style="list-style-type: none"> • Survival rate of pilot transplanted coral reef higher than 80% • Targeted pollution control investments made • Awareness raised among officials at municipal and provincial levels concerning the economic value of SNCNR and the importance of pollution control investments 	<ul style="list-style-type: none"> Ecological monitoring report Project progress reports 	Co-coordinating and enforcement structures at all sites are adequate to enforce pollution control decisions
	Immediate objective 2.3: Sustainable financing and the effective use of economic instruments for marine environmental protection are demonstrated at Sanya	<ul style="list-style-type: none"> • Action plan for sustainable financing under implementation • Alternative proposed economic instruments, e.g., user fees and charges, penalties, etc. in operation 	<ul style="list-style-type: none"> • Site visits and reports by PCU staff; PCU annual reports submitted to and approved by PSC • MPA reports submitted to provincial-level DoF and summarized by PCU in its annual reports • PCU Annual Reports, section on enhancing financial sustainability 	MPA does not allow overuse in seeking to maximize revenues
	Immediate objective 2.4: Participatory co-management and sustainable harvesting strategies involving local communities are demonstrated at Shankou Mangrove Reserve	<ul style="list-style-type: none"> • management plan for reserve, incl. details of permitted activities by VCGs and others in buffer and experimental zones developed • Pilot mangrove afforestation (50-100 ha) • Further identification of alternative sustainable livelihoods 	<ul style="list-style-type: none"> • Site visits and reports by PCU staff; PCU annual reports submitted to and approved by PSC • MPA reports submitted to provincial-level DoF and summarized by PCU in its annual reports • PCU Annual Reports, section on stakeholder participation 	<ul style="list-style-type: none"> None identified
	Immediate objective 2.5: An effective process for	<ul style="list-style-type: none"> • The MPA in Weizhou and Xieyang Islands is established in accordance with Kellerher G, 1999, Guidelines for Marine Protected Areas, IUCN and its experiences summarized for 	<ul style="list-style-type: none"> Project progress reports PCU Annual Reports 	<ul style="list-style-type: none"> Local Government gives approval for establishment

	Description	Verifiable Indicators	Means of Verification	Assumptions/risks
	establishing a new MPA, with international support, is demonstrated at Weizhou Island	<ul style="list-style-type: none"> dissemination; Solid waste and domestic sewage is under good control 		of MPA
	Immediate objective 2.6: Inter-provincial co-operation is demonstrated at Dongshan-Nan'ao migratory channel	<ul style="list-style-type: none"> Inter-provincial action plan for marine habitat protection and recovery prepared and under implementation Obstacles to the migration of marine species such as Chinese white dolphins, sea turtles and Chinese horseshoe crabs are removed. A new regulation for sandy beach conservation for migratory species is developed and submitted for approval The joint committee between two provinces is in good operation and policy and strategic framework is established between the two provinces. An MPA for Chinese horseshoe crab is under preparation for its establishment A marine mammal rescue center is established in Dongshan in put into operation; 	<ul style="list-style-type: none"> Site visits and reports by PCU staff PCU annual reports submitted to and approved by PSC 	<ul style="list-style-type: none"> Political will for inter-provincial co-operation remains strong
Immediate Objective 3 – Implement appropriate tools for conservation and sustainable use at the six sites and promote their broader adaptation across China's South Sea coastal area				
	Immediate objective 3.1: Stakeholders at each site have learned from the demonstrated conservation approaches and are ready to apply the newly acquired capacity to their areas	Studies prepared to analyze and synthesize results of demonstration components Experience/lessons exchanged through cross-site thematic working groups established and in operation Experience/ lessons exchanged through MPA staff exchanges and International staff exchanges with other GEF projects	<ul style="list-style-type: none"> Site visits and reports by PCU staff PCU annual reports submitted to and approved by PSC 	<ul style="list-style-type: none"> Institutional rigidities and other barriers can be overcome
	Immediate objective 3.2: Stakeholders at each site adapt and implement appropriate measures for conservation and sustainable use	<p>At Nanji Islands: (i) Sustainable financing plan developed (ref. Output #6) ; (ii) New investments made in solid waste management and sewage treatment (ref. Output #5); (iii) Participation and alternative sustainable livelihoods for local residents (ref. Output #7)</p> <p>At Sanya: (i) Participation and alternative sustainable livelihoods (ref. Output #7); (ii) Integrated approach to future planning undertaken (ref. Output #4)</p> <p>At Shankou et. al.: (i) Sustainable financing plan for each MPA developed of (ref. Output #6); (ii) Sea area use projects reviewed, approved and adjusted in accordance with marine functional zonation scheme of Guangxi and Beihai City (WI, DR) (ref. Output #4); (iii) Regulatory controls on industrial pollution of MPA developed and implement (WI) (ref. Output #5); (iv) sewage treatment plant and improved solid waste disposal system for island (WI) established by Local Government (ref. Output #5)</p> <p>Dongshan-Nan'ao: (i) migratory species action plan implemented (ref. Outputs #4-7)</p>	<ul style="list-style-type: none"> PCU annual reports submitted to and approved by PSC MPA reports submitted to provincial-level DoF and summarized by PCU in its annual reports 	<ul style="list-style-type: none"> Maintenance and operation costs of new investments can be sustained
	Immediate objective 3.3: Project tools and results are synthesized and disseminated to MPA managers and other relevant officials throughout the wider project area	Best practices guide for establishing and operating MPAs, based on international experience and guidelines, but adapted based on China-specific conditions and, in particular, project experience. developed and disseminated Training course for other MPA managers within the overall site area, utilizing the above guide organized.	<ul style="list-style-type: none"> Site visits and reports by PCU staff PCU annual reports, section on training and information exchange / dissemination 	<ul style="list-style-type: none"> This component will depend on success of most of those which precede it

Annex 3. Terms of Reference

TERMS OF REFERENCE

Final Evaluation of UNDP/GEF Biodiversity Management in Coastal Areas of China's South Sea (SCCBD)

1. Background

China is a "mega-biodiversity" country, having about one-tenth of the total number of species in the world. In terms of coastal and marine biodiversity, the highest levels are found in the tropics and sub-tropics along the South China Sea. However, China's coastal and marine biodiversity is under threat. For the past 15 years, the south-east of China has experienced unprecedented economic growth, social change and population growth. This continues today and is threatening the health of ecosystems which include a significant portion of the world's biodiversity.

Despite this rather bleak overall picture, the nature and intensity of threats are such that many sites that are borne to globally significant biodiversity are still in condition amenable to intervention to sustainably remove the threats. The UNDP/GEF Biodiversity Management in the Coastal Area of China's South Sea (SCCBD) seeks to ensure the long-term conservation and sustainable use of coastal and marine biodiversity along China's South Sea coastline through innovative mechanism of demonstrations and cross-learning among multiple sites. The project will concentrate activities at four demonstration sites within five coastal provinces. The project has three immediate objectives: (i) Strengthen conservation and sustainable use management capacities at four existing Marine Protected Areas, (ii) Develop, test and demonstrate tools, instruments and approaches for addressing the root causes of critical threats to marine biodiversity in China's South Sea coastal areas, and (iii) Implement appropriate tools for conservation and sustainable use at the six sites and promote their broader adoption across China's South Sea coastal area.

Approved by the GEF Council in November, 2004 and signed in March, 2005, the SCCBD project was launched in November 2005. According to Project Document, SCCBD lasts for eight years, the first four years to be supported by GEF and the remaining four years to be completely financed by Government of China. In order to implement the project, State Oceanic Administration of China as the national implementing partner has created project implementation organizations at national and local levels to ensure achievement of the project results.

SCCBD is implemented in partnership with National Oceanic and Atmospheric Administration of the United States (NOAA) as well as Stora Enso who has contributed to marine environment monitoring and restoration of mangroves in coastal areas of project demonstration site in Guangxi. SCCBD was supported by ESRI and other private sector in terms of software and trainings to their application. Implemented through a total of 17 subcontracts, SCCBD has already awarded all subcontracts and a draft of the comprehensive project report detailing the status of marine biodiversity of all projects sites is completed.

2. Description of the Assignment

The purposes of the evaluation are: 1) To review development and policy environment relating to coastal biodiversity conservation over the life of SCCBD, commenting on how these might have affected project performance and assess the extent to which the project remained relevant to the needs of its targets; 2) To perform final assessment of the extent to which SCCBD has successfully accomplished its objectives in terms of activities, outputs and outcomes as defined in the agreed Project Document (logic frame), and assess the likelihood of achieving them upon project completion in 2011; 3) identify implementing agency's institutional strengths and weaknesses; 4) To evaluate the impacts and sustainability of project outcomes.

3. Scope of Services

Under the supervision of UNDP CO in consultation with Implementing Partner of SCCBD, the final evaluation team will accomplish the following tasks:

- 1) **Project design and its relevance** in relation to:
 - a) *Development priorities* at the national level;
 - b) *Stakeholders* – assess if the specific needs were met;
 - c) *Country ownership / drivenness* – participation and commitments of government, local authorities, public services, private sector and communities;
- 2) **Performance** – look at the progress that has been made by the project relative to the achievement of its objective and outcomes;
 - a) *Effectiveness* – extent to which the project has achieved its objectives and the desired outcomes, and the overall contribution of the project to national strategic objectives;
 - b) *Efficiency* – assess efficiency against overall impact of the project for better projection of achievements and benefits resulting from project resources, including an assessment of the different implementation modalities and the cost effectiveness of the utilisation of GEF resources and actual co-financing for the achievement of project results;
 - c) *Timeliness* of results;
- 3) **Management arrangements** focused on project implementation:
 - a) *General implementation and management* – evaluate the adequacy of the project, implementation structure, including the effectiveness of the National Steering Committee and partnership strategy and stakeholder involvement from the aspect of compliance to UNDP/GEF requirements and also from the perspective of “good practice model” that could be used for replication
 - b) *Financial accountability* – extent to which the sound financial management has been an integral part of achieving project results, with particular reference to adequate reporting, identification of problems and adjustment of activities, budgets and inputs
 - c) *Monitoring and evaluation on project level* – assess the adoption of the monitoring and evaluation system during the project implementation and for its sustainable development, focusing to relevance of the performance indicators, that are:
 - Timeliness and quality of inputs;
 - Timeliness and cost-effectiveness of activities undertaken;
 - Ability of the project to utilize efficiently the inputs available to it;

- Quality and quantity of outputs produced;
- Achievement of immediate objectives;
- Factors that have facilitated or deterred the achievement of project objectives.

3) Project impact

- To determine the extent to which the project objectives are expected to be achieved and what are the short-term and long-term impact of the project, including efficiency of the project, cost-effectiveness of the project, impact on MPA management in China, generation of income to local communities, replication and dissemination of project results within and outside project areas; awareness raised of marine biodiversity by the public and decision makers.

4) Replication

To analyze replication potential of the project best practices in country and in the region, and present recommendations and lessons of broader applicability for follow-up and future support of UNDP and/or the Government, highlighting the best and worst practices in addressing issues relating to the evaluation scope.

5) Sustainability of project outcomes

- To analyze the risks and assumptions that are likely to affect the persistence of the project outcomes, including financial resources, socio-political, institutional and environmental risks.

6) Recommendations and lessons learnt

- Success stories;
- Problems in project implementation;
- Lessons learnt;
- Recommendations.

4. The Requested Services and Activities

The team will use the information generated by SCCBD including baseline and information generated by the M&E framework, and seek the necessary contextual information to assess the significance and relevance of the results. Though SCCBD goes across Phase III and Phase IV of the GEF, the final evaluation will use the strategic priorities of biodiversity portfolio in GEF Phase III as benchmark for evaluation.

In order to carry out the evaluation tasks, the team will carry out the following activities during the assignment period:

- 1) Review of background material and preparation of a tentative evaluation plan to be agreed with UNDP CO and PCU of SOA;
- 2) Desk review of documents provided by UNDP CO attached to this TOR;
- 3) Interviews and discussions with relevant stakeholders including:
 - PCU of SOA;
 - UNDP CO;
 - NOAA (through email communications);

- Ministry of Finance;
- Private sector representatives including Stora Enso in Guangxi and ESRI in Beijing;
- Local Project Steering Committee members of the project sites;
- Local beneficiaries including representatives from the beneficiary MPAs in the project, Village Conservation Group in Guangxi, school teachers of Dongshan No.2 Middle School, fishermen in Guangdong and Fujian, township representative in Nanji;
- Subcontractors, including Guangxi Mangrove Center in Guangxi, Third Institute of Oceanography, second Institute of Oceanography, Institute of South China Sea of CAS, etc.

4) Field visits to the four selected demonstration sites. At least visits should be made to Shankou MPA, Sanya MPA, Nanji Island, and one site from Dongshan or Nan'ao.

5) Debriefing at the UNDP CO on the preliminary findings after the meetings and visits with participation of key stakeholders;

6) Preparation and finalisation of evaluation report by incorporating any additional comments from the UNDP CO and SOA.

5. Qualifications

The final evaluation team will consist of an international consultant and a national consultant. All the international and national consultants are expected to have Master's Degree on environmental science or related areas and at least five years of evaluation experiences. In addition, it is desired that the international and national consultants have as many as possible the following qualifications:

- 1) Project development, implementation and evaluation experience;
- 2) Familiarity with natural resources management in particular marine and coastal biodiversity policies;
- 3) Expertise in economic and social development issues;
- 4) Knowledgeable about the relevant policies of the GEF;
- 5) Good communications and writing skills in English;
- 6) Knowledge of MPA management, integrated coastal management, natural resources co-management, integrated planning, etc;
- 7) Knowledge of GEF projects and project requirements;
- 8) Professional experiences in working in China and with Chinese counterparts.

6. Outputs

The consultant team are expected to deliver the following outputs:

- 1) An evaluation report presenting evaluation results of the project and recommendations. The report should be submitted to UNDP CO and PCU/SOA within six weeks from the date when the consultants are contracted. The documents should be submitted in electronic format.
- 2) Presentation of findings to UNDP CO and SCCBD key stakeholders in a wrap-up meeting in UNDP CO.

The findings of the evaluation will be used by Ministry of Finance as the GEF Focal Point in China, SOA as the implementing partner and UNDP to conclude the project.

7. Duration of the Contracts

Three work weeks, including travel time required. The consultant will travel to Beijing, Beihai, Sanya, Nanji Island and Guangdong or Fujian. The consultant will meet with government officials, project participants, and other stakeholders in order to evaluate the project implementation and impact. The travel schedule and logistics will be developed by UNDP in consultation with PCU/SOA.

8. Payment Schedule

30% of the total amount due the consultant will be paid upon signature of the contract for mobilization. The remaining 70% is payable upon acceptance by UNDP of the evaluation report in its final form.

9. Start of the Assignment

As soon as possible

10. Documents to be provided to the consultants:

- Project brief
- Project document;
- Project implementation reports (PIRs);
- Comprehensive report of subcontracts (in Chinese).

11. Final Evaluation Report: Sample Outline

1. Executive summary

- Brief description of project;
- Context and purpose of the evaluation;
- Main conclusions, recommendations and lessons learned;

2. Introduction

- Purpose of the evaluation;
- Key issues addressed;
- Methodology of the evaluation;
- Structure of the evaluation.

3. The project and its development context

- Project start and its duration;
- Problems that the project seeks to address;
- Immediate and development objectives of the project;

-
- Main stakeholders;
 - Results expected.
4. Findings and Conclusions
- 4.1 Project Formulation
- ✓ Implementation
 - ✓ Stakeholder participation
 - ✓ Replication approach
 - ✓ Cost effectiveness
 - ✓ Linkage of the project and other interventions within the sector
 - ✓ Indicators
- 4.2 Project Implementation
- ✓ Delivery
 - ✓ Financial management
 - ✓ Monitoring and evaluation
 - ✓ Execution and implementation modalities
 - ✓ Management by UNDP and other partners
 - ✓ Coordination and operational issues
- 4.3 Results to date
- ✓ Attainment of Objectives
 - ✓ Sustainability
 - ✓ Contribution to upgrading skills at National level
- 5.0 Lessons learned
- 6.0 Conclusions and recommendations, including overall rating of project implementation and the achievement of project outcomes and objective.
- 7.0 Evaluation report Annexes
- Evaluation TORs , Itinerary and list of persons interviewed
 - Summary of field visits, including evaluators findings, issues raised and recommendations by different stakeholders
 - List of documents reviewed
 - Questionnaire used and summary of results if any
 - Comments by stakeholders (only in case of discrepancies with evaluation findings and conclusions)

Annex 4. List of persons interviewed

List of persons met in Beijing

Name	Institution	Position
Dr. Zhang Zhanhai	International Cooperation Department (ICD) of SOA	NPD, Director General
Mr. Liang Fengkui	ICD, SOA	NPM, Division Chief
Ms. Tang Dong Mei	PCU, SOA	Report and Contract Officer
Mr. Wang Feng	PCU, SOA	Project Assistant
Prof. Zhou Qiulin	PCU	Project Implementation Coordinator
Prof. Wen Quan	National Marine Env. Monitoring Center	National Consultant
Mr. Ma Chaode	UNDP	Programme Manager

List of persons met in Pingyang, Nanji, Zhejiang

Name	Institution	Position
Prof. Yang Shengyun	Xiamen University	Prof. and National Consultant
Dr. Du Jianguo	3 rd Institute of Oceanography	Assistant Researcher
Mr. Ruan Biao	Ocean and Fishery Department (OFD) of Zhejiang	Div. Chief
Mr. Yang Jianyi		Deputy Div. Chief
Mr. Zeng Jiangning	2 nd Institute of Oceanography	Associate Professor
Dr. Chen Shaobo	Ocean Aquaculture Institute, Zhejiang	Deputy Director, Prof.
Dr. Liu Guangxu	Zhejiang University	Associate Professor
Dr. Chen Xiao	Zhejiang Mariculture Research Institute	Associate Professor
Mr. Wang Tiegang		Senior Engineer
Mr. Peng Xin		Associate Researcher
Mr. Liu Weicheng		Associate Researcher
Ms. Qian Ruru		Engineer
Ms. Yu Feng		MSc. Student
Mr. Cao Guangzhao	Wenzhou Ecological Demonstration Park	Deputy Director
Mr. Zeng Shangjun	Pingyang County Government	Deputy Governor
Mr. Xie Chi		Deputy Div. Chief
Mr. Fang Mingxiao	Nanji National Marine Natural Reserve Administration	Director General
Mr. Chen Jiyang		Deputy Director
Mr. Hu Daming		Deputy Director
Mr. Cai Houcai		Engineer in Chief
Mr. Zhou Qinglong		Sec. Chief
Mr. Chen Yilei		Div. Chief
Mr. Ma Wenping	Nanji Township Government	Party Secretary
Mr. Lin Ximing		Governor
Mr. You Shengpao	Nanji Island Ocean Env. Monitoring Station	Director
Mr. Chen Chuanzai	Tourism Association, Nanji Islands	President
Ms. Zhu Hainan	Education Bureau of Pingyang County	Sec. Chief
Mr. Wen Zhengqi	Nanji Villa Hotel	Manager
Mr. Ye Weixun	Huokun'ao Village, Nanji Islands	Village leader
Mr. Chen Zhiqin	Dalei Village, Nanji Islands	Village leader
Mr. Lin Jian	Nanji National Marine Natural Res. Admin.	Sec. Chief
Mr. Bai Honglian	Law Enforcement Brigade, Nanji Islands	Deputy Director
Mr. Yang Jiabo	Nanji National Marine Natural Reserve Administration	Div. Chief
Mr. Xie Bingwei		Deputy Div. Chief
Mr. Song Tiancheng		Deputy Div. Chief
Ms. Zheng Pingping		Deputy Div. Chief

Mr. Huang Xidan	Nanji National Marine Natural Reserve Administration	Deputy Div. Chief
Mr. Chen Wandong		Deputy Div. Chief
Ms. Zheng Xiaoqiao		Secretary

List of persons met in Dongshan, Fujian Province

Name	Institution	Position
Prof. Yang Shengyun	Xiamen University	National Consultant,
Prof. Zhang Yusheng	3 rd Institute of Oceanography	National consultant,
Dr. Du Jianguo		Assistant Researcher
Mr. Wang Zhaokai		Local consultant
Dr. Liu Wenhua	Shantou University	Local Consultant
Mr. Wei Pingying	Guangdong Ocean and Fishery Department	Deputy DG
Mr. Liu Siyuan		Div. Chief
Ms. Chen Ling		Sub-Div. Chief
Dr. Zhao Minghui		Deputy Div. Director
Ms Chen Yiqun	Shantou Ocean and Fishery Bureau	Division Chief
Mr. Chen Xiaopeng		Engineer
Mr. Liang Huoming	Fujian Ocean and Fishery Department	Deputy DG
Ms. Lai Xiaoxuan		Deputy Div. Chief
Mr. Li Rongxin		Sub-division Chief
Mr. Chen Bin	Zhangzhou Ocean and Fishery Bureau	Chief Engineer
Mr. Zhao Renqi		Div. chief
Mr. Sheng Mingmu	Dongshan Ocean and Fishery Bureau	Director
Ms. Lv Liyong		Deputy Director
Mr. Liang Bo	Dongshan MPA	Engineer
Mr. Chen Zhangqun		Engineer
Mr. Chen Chunliang	Dongshan Law Enforcement Brigade	Chief
Mr. Xu Liyi	2 nd High School, Dongshan County	Teacher
Mr. Zheng Pingjian	Dongshan Fisher's Association	President
Mr. Huang Wenhui	Maluanwan Beach Administration	Director
Mr. Guo Qingjian	Representative of Aquaculturists	Aquaculturist

List of persons met in Nan'ao, Guangdong

Name	Institution	Position
Dr. Zhang Yusheng	3 rd Institute of Oceanography	National consultant
Dr. Liu Wenhua	Shantou University	Local Consultant
Mr. Liang Bo		Local consultant
Mr. Liang Huoming	Fujian Ocean and Fishery Department	Deputy DG
Ms. Lai Xiaoxuan		Deputy Div. Chief
Mr. Li Rongxin		Sub-division Chief
Mr. Chen Bin	Zhangzhou Ocean and Fishery Bureau	Chief Engineer
Ms. Lv Liyong	Dongshan Ocean and Fishery Bureau	Deputy Director
Mr. Chen Zhangqun	Dongshan MPA	Engineer
Mr. Wei Pingying	Guangdong Ocean and Fishery Department	Deputy DG
Mr. Liu Siyuan		Div. Chief
Ms. Chen Ling		Sub-Div. Chief
Dr. Zhao Minghui		Deputy Div. Director
Ms. Chen Rong	Shantou Ocean and Fishery Bureau	Deputy Director
Mr. Yao Wenbiao		Div. Chief
Ms. Chen Yiqun	Shantou Ocean and Fishery Bureau	Div. chief
Mr. Chen Xiaopeng		Engineer
Mr. Yang Jinyuan		
Mr Huang Fan		
Mr. Huang Junfu	Nan'ao County Government	Vice Governor

Mr. Yang Shunhong	Nan'ao County Ocean and Fishery Bureau	Director
Mr. Ke Shicheng		Deputy Director
Mr. Chen Xiong		Senior Engineer
Mr. You Wenxin	Nan'ao Fishery Law Enforcement Brigade	Deputy Director
Mr. Wu Qingjie	Nanpeng Marine Natural Reserve Administration	Director
Mr. Zhang Zeda		Senior Engineer
Mr. Lin Junmu	Nan'ao County Tourism Bureau	Deputy Director
Mr. Wang Peifeng	Nan'ao County	Fisher
Mr. Wu Qingxiang		Fisher
Mr. Huang Peigui	Nan'ao Buddhism Association	President
Mr. Wu Chunan	Nan'ao County	Fisher

List of persons met in Beihai, Guangxi

Name	Institution	Position
Mr. Yang Xiaoguang	Guangxi Ocean and Fishery Department	Deputy DG
Mr. Jiang Mingxing		Division Chief
Mr. Zhou Haolang	Guangxi Mangrove Research Center(GMRC)	Deputy Director, Associate Professor
Ms. Cao Qingxian	GMRC	Engineer
Mr. Ge Wenbiao		Engineer
Mr. Li Wuzheng	Shankou Mangrove Protection Area	Director
Ms. Wei Jiangling		Assistant
Ms. Xu Haiou	Beihai Volunteer Association	President
Ms. Lv Dandan		Assistant
Mr. Mo Zhucheng	Shankou National Mangrove Reserve	Associate Professor
Mr. Zhang Shaofeng	Guangxi Ocean Monitoring Center	Assistant Engineer
Ms. Liu Juan	Hepu National Dugong Reserve	Engineer
Mr. Ding Ping	Shankou National Mangrove Reserve	Deputy Director
Mr. Wu Yuquan		Assistant Director
Mr. Chen Kai		Div. Chief
Mr. Pang Fupeng		Station Chief
Mr. Zhang Xinde		Deputy Station Chief
Mr. Pang Changgui		Div. Chief
Mr. Xie Jian		Assistant
Mr. Wang Zongxiang		Boat Driver
Mr. Li Qiang		Management staff
Mr. Liu Jinggui	Shankou Village Conservation Group	President
Mr. Xie Xiankun	Shankou Yingbei Primary School	Principal
Mr. Su Jun	Shankou Mangrove Middle School	Principal
Mr. Chen Shijian	Shankou Mangrove Restaurant	Manager
Mr. Mo Huan	Duck Breeder	Farmer
Mr. Li Dao	Duck Breeder	Farmer
Mr. Mo Weimin	Beijie Village, Shankou Township	Village leader
Mr. Li Bin		Villager
Mr. Mo Jirui	Shankou Tourism Boat Service	Team leader
Mr. Su Qianming	Shankou Gaobo Village	Mangrove Ranger
Mr. Yang Yunfang	Shankou Yingluo Village	Mangrove Ranger
Mr. Mo Guanyong	Shankou Beijie Village	Mangrove Ranger
Mr. Xiao Yuanjie	Shankou Shangxin Village, Shatian Township	Mangrove Ranger
Mr. Li Huazhang	Dandou Village, Shatian Township	Mangrove Ranger

List of persons met in Sanya, Hainan Province

Name	Institution	Position
Mr. Liang Fengkui	PCU, SOA	National Project Manager
Prof. Liu Yan	National Consultant	Professor
Mr. Lu Xingwang	PCU, SOA	Assitant
Mr. Liu Zhaowu	Hainan Ocean and Fishery Department	Deputy DG
Mr. Chen Zhonglin		Div. Chief
Mr. Li Jinsong		Engineer
Ms. Yu Xiaojun	Sanya National Coral Reef National Reserve Administration	Director
Mr. Wang Junjie		Deputy Director
Mr. Chen Chunhua	Local Consultant	Engineer
Mr. Duan Deyu	Sanya Ocean and Fishery Bureau	Deputy Director
Mr. Kang Fei		Sec. Chief
Ms. Wang Yuexia	Sanya Luhuitou Swerage Treatment Plant	Manager
Dr. Li Xiubao	South China Sea Institute of Oceanography	Researcher
Mr. Li Yuanchao	Hainan Ocean Development Designing Institute	Engineer
Mr. Chen Shiquan		Engineer
Prof. Chen Hong	Hainan South China Sea Tropical Marine Biology and Disease Institute	Director
Ms. Bian Yuqin	Sanya Blue Ribbon Ocean Protection Association	Director
Mr. Zhao Xu		Staff
Ms. Pu Binmei		Staff
Ms. Zhao Shuying		Staff
Mr. Zeng Qixiang	Sanya Xidao Tourism Company	Manager
Mr. Zhao Jiguang	Sanya Yalongwan Bay Undersea Tourism Company	Manager

Annex 5. Itinerary of field visit

Field visit to the project sites, from 15 to 24 September 2011.

Date	Location	Meetings
15.09	Beijing, SOA headquarters	Meeting with UNDP and PCU
	Beijing to Aojiang (Zhejiang Province)	Travel
16.09	Aojiang (Zhejiang Province)	Presentation and discussions on the project achievements
17.09	Aojiang (Zhejiang Province)	Discussions on the project achievements
	Aojiang to Dongshan (Fujian Province)	Travel
18.09	Dongshan (Fujian Province)	Presentation and discussions on the project achievements
		Site visits: Dongshan No.2 Middle School Biodiversity Exhibition Room and student interviews, Maluan Bay (posters on beach clean-up and removal of aquaculture installations)
19.09	Dongshan to Nan'ao Island (Guangdong Province)	Travel (by boat)
	Nan'ao Island (Guangdong Province)	Site visits: Shantou University Marine Laboratory, Wastewater treatment plant
		Presentation and discussions on the project achievements
20.09		Visit to cultural sites
	Nan'ao to Beihai	Travel (by plane and car)
21.09	Beihai to Shankou (Guangxi Autonomous Region)	Site visits and interviews: Mangrove Nature Reserve Biodiversity Exhibition Room in Beihai Youth Centre
	Shankou (Guangxi Autonomous Region)	Presentation and discussions on the project achievements
22.09	Beihai	Guangxi Mangrove Research Centre Presentation and discussions on the project achievements
		Site visit: Beihai Wetland Park
	Beihai to Sanya (Hainan Province)	Travel
23.09	Sanya (Hainan Province) to Ximaozhou Island	Site visit: Coral propagation installations Wastewater treatment plant
	Sanya	Presentation and discussions on the project achievements
24.09	Yalong Bay	Site visit: Tourism development and operators
	Sanya - Beijing	Travel

Annex 6. Questions to guide interviews

Questions to guide the interviews with local stakeholders for the TE on the basis of the LF indicators

Description	Verifiable Indicators	Additional TE Questions
Overall Objective Sanya To ensure long-term conservation and sustainable use of marine biodiversity in China's South Sea coastal area through the participation and co-operation of, and effective management by, all relevant Governmental and non-Governmental stakeholders	Populations of globally-significant biodiversity at demonstration sites stabilised or growing, and biodiversity conservation capacities improved At the end of the project: - The distribution area of living coral stabilized and extended,	-What is the baseline? - What is the long-term trend of coral coverage as compared to algal coverage? - Ratio dead vs living coral? - Ratio reef complex (live corals – gorgonians – sponges) – algae – non living substrate
	- Indicator species such as parrot fish and grouper, etc reappear;	-What is the baseline? -Fish diversity (nb of species, nb of families, fish abundance, Simpson D index, herbivore fish abundance, abundance and nb of herbivore fish species)
	- Water transparency 1 m deeper	- Other indicators of water quality? Nutrient concentrations? Heavy metals?
Overall Objective Shankou	Survival rate of experimentally planted mangroves over 80%;	
	VCGs organized and operational;	- What is the status of the VCGs? - What are the activities conducted by the VCGs? - What type of agreement have they established with the project? -What is the source of funding for their operations?
	No further destruction of mangrove and mangrove distribution increases as a result of artificial planting;	- Baseline surface area? End of project mangrove surface area? Planted area?
	Restoration of tidal channels and removal of aquaculture facilities to restore over 80% of seagrass bed;	- Baseline surface area of seagrass bed? End of project seagrass meadows surface area? Identification of species? Any change in species occurrence?
	- MPA zoning	- Clear indication of do's and don'ts for resource and sea users - Signs and boards displaying zoning with do's and don'ts
Overall Objective Nanji	Algae and shells in good and healthy state;	- Indicators of resource condition?
Overall Objective Dongshan- Nan'ao	The number of migrating species, especially Chinese white dolphin, horseshoe crab and sea turtles increases; Migrating species tangled on nets or stranded are rescued.	- Is the monitoring conducted yearly or seasonally? - Proportion of stranded animals that are rescued? Indications of survival rate?
Immediate Objective 1: To strengthen the conservation capacities of existing Marine Protected	Site management systems are more comprehensive and effective, and biodiversity in the project sites is sustained. Management plans developed and implemented, encroachment and site degradation levels reduced.	- Target species distribution and abundance, target groups diversity

Description	Verifiable Indicators	Additional TE Questions
Areas within core areas of global biodiversity significance	Partnership conservation programs established. Documented policy revisions and minutes of meetings, etc. from inter-sectoral meetings.	- Clearly defined roles, rights and responsibilities?
Immediate Objective 2: To successfully demonstrate feasible and appropriate approaches to conservation and sustainable use through removal of threats to biodiversity linked to activities in buffer and experimental zones of MPAs and beyond, as necessary	Feasible and appropriate approaches to conservation and sustainable use means established. MPA records on encroachment, socio-economic data on livelihood sources in the site areas.	- Sustainable collection/ harvest levels determined for used resources?
Immediate Objective 3: To ensure that lessons from demonstration exercises are incorporated into work being done at remaining project sites which face similar threats	Public awareness programs established at the sites Partnership conservation programs and public awareness programs in operation.	- What is the objective of the awareness activities? - How to measure progress towards this objective?
	Improved legal framework and sustainable financial framework established for the sustainable development of the Project. Legal and financial improvement recommendations ready for government approval.	- What is the specific enabling framework and financial mechanism for each site?
	Lessons and experiences summarized and assessed. Portfolio of lessons and experiences composed.	- Dissemination documents with best practices and lessons learned for each type of ecosystem / resource
	A monitoring modulus established for assessing the success of biodiversity conservation at the sites. Monitoring modulus established.	- Monitoring protocols for coral reefs, seagrass beds, island, sea turtles, dolphins, horseshoe crabs
Output 1. Conservation capacities strengthened at Nanji Islands	1. A management plan developed to ensure the integration of conservation and development within the MPA. - MPA management plan established and approved for implementation. - EIA process in operation - ICM approach established 2. Strategic adaptation measures for local people to sustainable livelihood established.	- Is the management plan implementing measures that restrict resource users? - Has a socioeconomic impact assessment been conducted for the conservation measures? - Are the beneficiaries of the support for sustainable livelihood the people who bear the opportunity costs related to the adoption of conservation measures?
Output 2. Conservation capacities strengthened at Sanya Coral Reef Reserve	1. Equipment received and in effective use 2. Threats related to direct use measurably and sustainably reduced, coral areas and conditions measurably improved and reef-associated fish populations increasing	-What is the impact of the new equipment on operations? Ex: Increased safety of rangers? More efficient enforcement and apprehension of offenders / poachers? Increased patrolling radius? - Is monitoring more frequent/ regular and more effective? What method is used? Do they use identification plates? How many people have adequate skills to monitor coral reefs? - Is the effectiveness of conservation measures assessed to allow their adaptation? and allow timely interventions to conserve biodiversity? - What is the survival rate of transplanted corals? How many species are transplanted? - Are monitoring data stored in the National Marine Environment Monitoring System database?

Description	Verifiable Indicators	Additional TE Questions
Output 3: Conservation capacities strengthened at Shankou Mangrove Reserve and the Dugong Reserve	<ol style="list-style-type: none"> Inter-sector cooperation framework established between the two reserves. <ul style="list-style-type: none"> MOU and Minutes and recommendations from the cooperation framework. Technical survey and assessment system established in the Mangrove Reserve and put into operation. Assessment of the improvement of the seagrass meadow in the Dugong Reserve 	<ul style="list-style-type: none"> -What are the areas of cooperation between the 2 reserves? - Have they established common monitoring protocols? - Is monitoring more frequent/ regular and more effective? What method is used? How many people have adequate skills to monitor mangroves and seagrass meadows? - Is the effectiveness of conservation measures assessed to allow their adaptation? and allow timely interventions to conserve biodiversity? - Are monitoring data stored in the national database – National Marine Environment Monitoring System?
Output 4 - The use of biodiversity overlays in planning is demonstrated at Nanji Islands	<ol style="list-style-type: none"> GIS-based master planning system is established in Nanji Island. Island Eco-tourism system established and coordinated with biodiversity conservation in the core zone. <ul style="list-style-type: none"> Report about eco-tourism development and its coordination with the conservation in the core zone. 	<ul style="list-style-type: none"> - Do ecotourism operators understand the value of biodiversity and the dependence of their industry on it? - Were they involved in the development of the plan?
Output 5 - Control of land-based sources of pollution is demonstrated at Sanya Coral Reef Reserve	Increased water clarity at 10 monitored locations	- At what frequency? Low & high tide? Seasonal? Rainy season might bring higher sediment load from rivers discharging into the MPA
	Reduced inorganic nutrient concentrations	- Other contaminants measured? Heavy metals typical of contamination by lixiviate? Lead zinc copper?
	Increased live coral coverage	- Coral reef complex vs algae and non-living substrate
Output 6: Public-private partnership through an economic instrument for protected area management is demonstrated at Sanya	<ol style="list-style-type: none"> An economic instrument is arranged between the public and private section for establishing the partnership for coral conservation. <ul style="list-style-type: none"> reports of the operation of the economic instrument 	<ul style="list-style-type: none"> - What is the profitability of this instrument? What are the revenues generated? - Was a business plan prepared? - Assessment of recurrent operational and administrative costs – occasional one-off expenditures (to attend meetings, conferences) – capital investments for infrastructure, major equipment, baseline assessment, training and research
	Patrol of the MPA strengthened.	- What is the impact? Increased compliance? Increased or decreased number of arrests? Decreased occurrence of illegal actions – awareness actions to inform populations of regulations?
Output 7: Participatory management involving local communities is demonstrated at Shankou Mangrove Reserve	Shankou Mangrove Ecosystem Conservation Association, aiming at coordinating the relationship between the MPA and local communities. <ul style="list-style-type: none"> Report of an association in operation Programs of coordination between the MPA and local communities. 	<ul style="list-style-type: none"> - What type of agreement? - How was it developed? - How many community groups? - What are the benefits of the community groups? role? responsibilities? - What resources do they use? - Is the legislative framework enabling the participation of LC in MPA management?
Output 8: Sustainable harvesting strategies are developed and implemented at Shankou	<ol style="list-style-type: none"> Sustainable harvesting means established and alternative identified for the villagers around the reserve. (Technical support and information service are provided for the villagers around the MPA) Proper eco-tourism, eco-aquaculture are developed for creating new job opportunities for the villagers around the MPA. (Ecotourism developed and new job opportunities created.) Resource utilization objectives and modes for reducing impact on the MPA are properly established (Models developed and assessed) 	<ul style="list-style-type: none"> - How were local communities involved in the delineation of the MPA and various zones? - Has a socioeconomic baseline been established? - Is the socioeconomic status of local communities monitored? - Has the establishment of the MPA imposed any restriction on the resource use or access for the local communities? - Are jobs developed in priority for people whose access to resources has been restricted?

Description	Verifiable Indicators	Additional TE Questions
Output 9: Information and project experience is exchanged among project partners at all sites	<ol style="list-style-type: none"> Experiences and lessons are summarized and assessed from each site; <ul style="list-style-type: none"> Minutes and recommendation from annual meeting. Annual meeting is held among sites for experiences and lessons exchange with each site as the sponsor (Summaries of experiences and lessons) <p>At the conclusion of the Project, findings are identified for further removal of threats in buffer and experimental zones (recommendations for further implementing the project interventions)</p>	At each site, what are the main lessons/ best practices learnt from other sites that were adapted and implemented?
Output 11: Demonstration components are carefully monitored and evaluated	<ol style="list-style-type: none"> Portfolio of demonstration modulus is established and assessed. Annual monitoring and evaluation program is established and carried out. 	
Output 12: Continue threat reduction in buffer and experimental zones	<ol style="list-style-type: none"> An assessment model is established for the Project and assessed. Second round of management cycle initiated to sustain the project. 	

Questions to guide the interviews with project partners on management issues

Section of the report	Questions	Source of information
PROJECT FORMULATION		
Purpose of the terminal evaluation Project start and its duration	According to the project document, the project should end in Dec 2012, has the end date been changed? Why is the TE taking place at this time?	UNDP Program manager
Project Design		
National ownership	Project consistency with national development, environmental and biodiversity strategies and action plans	China's biodiversity strategy and environmental / other development action plans
Stakeholder participation in design stages	Have the partners and beneficiaries been consulted during the project preparatory phase?	UNDP Program manager SOA Representative Local authorities and partners
UNDP comparative advantage as Implementing Agency	On what basis are biodiversity projects implemented by UNDP or by UNEP?	UNDP Program manager
Linkages between the project and other interventions in the sector	What is the relationship / coordination / communication between SCCBD and the South China Sea Project implemented by UNEP and governments in Vietnam, Indonesia, Thailand, Philippines, Malaysia, Cambodia – that also focuses on corals, mangroves and seagrasses Are there other projects that collaborate or complement the SCCBD intervention?	UNDP Program manager Project coordination
PROJECT IMPLEMENTATION		
Implementation approach		
Use of the logical framework as a management tool during implementation	Was the LF used during the course of the project to monitor the results, assess the risks/assumptions?	Project coordination Local coordination units
	How was the work plan developed?	Project coordination

Section of the report	Questions	Source of information
	Were partners involved in the development or validation of the work plan?	Local coordination units
Adaptive management reflected in work plan development	Was the work plan revised / adapted according to the results of the monitoring / evaluation of the results?	Project coordination
Monitoring and evaluation		
Project steering committee	Was the PSC helpful to solve critical issues during the project implementation?	Project coordination
Quarterly progress reports	How were the different units coordinated for the monitoring of results, preparation of the quarterly and annual reports? How many reports (narrative and financial)/ formats had to be submitted? To whom?	Project coordination Local coordination units
Annual monitoring and reporting	How frequently were LF result indicators measured?	Project coordination Local coordination units
Definition of appropriate indicators	Have the indicators been changed / modified during the project?	Project coordination
	Did UNDP or GEF provide support / advice to identify appropriate indicators?	Project coordination
National ownership	Has the project contributed to develop or support regulation and policy framework?	UNDP Program manager
	Is the country adopting new regulations or policies that further the project objectives?	SOA Representative
Stakeholder participation		
Local resource users' and partners participation in project implementation and decision making	Were they involved and how?	Project coordinator Local coordination units
Mechanisms for information dissemination in project implementation	Did the project develop a communication strategy? How was communication established throughout the project structure and with partners?	Project coordinator Local coordination units
Financial planning, expenditure statement and efficiency		
Financing plan and actual contributions	Ask for table	Project accountant
	If there are discrepancies between pledged and paid amounts, are there specific explanations?	Project accountant Project coordinator
	Did the project have a leverage effect to mobilize additional contributions from other partners?	Project accountant
Expenditure statement per outcome and co-financing source from November 2005 to June 2011	Ask for table	Project accountant
	Were there major budget revisions? Based on PSC decisions?	Project accountant Project coordinator
	If there are major discrepancies between budget and actual amounts, are there specific explanations?	Project accountant Project coordinator
Local communities in-kind contribution	Is it possible to estimate the local communities contribution in the various interventions for the total duration of the project?	Project accountant / Project coordinator
Cost of main achievements under each outcome	Ask for tables	Project accountant
Planning for sustainability	Did the project develop a sustainability strategy? Or an exit strategy?	Project coordinator
	What are the institutional arrangements and financial mechanisms in place to ensure the sustainability of the project results?	Project coordinator
Execution and implementation modalities		
Implementation issues	Mechanisms for coordination among all actors / partners	Project coordinator
Financial management	Management with UNDP and coordination with the project units	Project coordinator Local coordination units

