India: Sustainable Coastal Protection and Management Investment Program - Tranche 1

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Sustainable Coastal Protection and Management Investment Program - Tranche 1</th>
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<tbody>
<tr>
<td>Project Number</td>
<td>40156-023</td>
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<tr>
<td>Country</td>
<td>India</td>
</tr>
<tr>
<td>Project Status</td>
<td>Active</td>
</tr>
<tr>
<td>Project Type / Modality of Assistance</td>
<td>Loan</td>
</tr>
<tr>
<td>Source of Funding / Amount</td>
<td>Loan 2679-IND: MFF - Sustainable Coastal Protection and Management Investment Program - Tranche 1&lt;br&gt;Ordinary capital resources US$ 51.56 million</td>
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<tr>
<td>Strategic Agendas</td>
<td>Environmentally sustainable growth&lt;br&gt;Inclusive economic growth</td>
</tr>
<tr>
<td>Drivers of Change</td>
<td>Governance and capacity development</td>
</tr>
<tr>
<td>Sector / Subsector</td>
<td>Agriculture, natural resources and rural development - Water-based natural resources management</td>
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<tr>
<td>Gender Equity and Mainstreaming</td>
<td>Some gender elements</td>
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<tr>
<td>Description</td>
<td>The investment program will address immediate coastal protection needs and coastal instability using environmentally and socially appropriate solutions, with a focus on softer options such as artificial reefs, beach nourishments, and dune management in the states of Goa, Karnataka, and Maharashtra. It will also develop institutional capacities to meet the long-term needs of sustainable coastal protection and management, and support initiatives to increase the participation of the private sector and communities in coastal protection and management. The impact of the investment program will be improved income and reduced poverty of the coastal communities in the subproject areas of the coastal states of Goa, Karnataka, and Maharashtra. The outcome of the investment program will be protected and managed shorelines in the three states, meeting the needs of stakeholders and protecting the environment</td>
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Coastal erosion is responsible for loss of land, houses, infrastructure, and business opportunities; and poses a high risk to human well-being, economic development, and ecological integrity. Every year, 400 hectares of land, 75,000 hectares of crop areas, and 34,000 residential houses and/or industrial establishments are lost or damaged by coastal erosion. The impact will be much more extensive and widespread in the coming years, as the coastline is increasingly subject to a wide range of economic developments, many of which create conflicts and pressures on the already disturbed natural coastal environments. The rural poor coastal communities are the most vulnerable to the impacts of erosion and poor coastal management. Many of the rapidly growing Indian urban areas are also vulnerable to coastal erosion; Mumbai, for example, incurs a cost of about $2.5 million per km on capital works alone to protect some of its prime waterfront property.

The coastal protection strategy in India aims at protecting the land and overall economic growth. Protecting the beach and the environment are relatively new concepts. The most frequently applied methods for coastal protection have been through the use of hard structures, such as seawalls or groins. Long-term plans to manage coastal erosion are available. However, resource constraints result in the measures being undertaken to target the more vulnerable sections of the coasts and as local emergency measures. Such interventions provide mostly land protection. Seawalls and groins continue to be preferred measures though they do not necessarily address the root cause of the problem. As the pressure on the coastal zone keeps expanding because of human-induced activities as well as relative sea level rise, there is an urgent need to find sustainable solutions for coastal protection. Continuing coastal erosion worldwide is leading to the development and installation of innovative techniques for effective and unobtrusive shoreline and near shore control. There are increasing examples of replacement or modification of traditional hard rock protection with softer options such as beach nourishments, dune management, or artificial reefs. The investment program is designed to facilitate the transition to softer solutions, with a focus on environmentally appropriate and sustainable solutions.

The benefits of coastal projection to coastal economies are enormous. Interventions to prevent coastal erosion and protect beaches and adjoining land will benefit port operators and users, fisherfolk, tourism operators, beach users, farmers, and other property owners and local communities living near to or depending on the coast. In addition, the introduction and development of new technologies have lower environmental and social impacts than rock walls, which are the traditional solution to coastal erosion problems in India. When solutions include the construction of artificial reefs, there are benefits for beaches, land and property behind beaches, tourism, and artisanal fisheries since reefs provide a beneficial habitat for fish and other marine species. The introduction of these new technologies for coastal protection leads to solutions that not only protect the coastline from erosion but enhance income-generating opportunities for communities living near the affected areas.

<table>
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<tr>
<th>Impact</th>
<th>Improved income and reduced poverty of the coastal communities in the subproject areas of two coastal states</th>
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<tr>
<th>Project Outcome</th>
<th>Protected and managed shorelines in the two states meeting the needs of stakeholders and the environment</th>
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<tr>
<th>Description of Outcome</th>
<th>The project design and management consultants (PMDC) for both Karnataka and Maharashtra components have been fielded and mobilized in Jan 2012. Consultants actively participated during the inception mission where implementation strategy, schedule and related activities and ADB procedures were discussed. PMUs for both Karnataka and Maharashtra have been established and are now fully operational although staffing is yet to be completed mainly in Maharashtra. The Program Steering Committees (PSCs) have likewise been established by both the states of Karnataka and Maharashtra. Out of 4 originally envisaged civil works contracts in Karnataka, three major works (construction of onshore berms awarded in Feb 2013; construction of offshore reefs awarded in Nov 2014; and rehabilitation of breakwaters in Ullal awarded in July 2014) have been awarded. Construction of breakwaters at Ullal is nearing completion and other two contracts are at various stages of implementation. Remaining one work beach nourishment would be considered by EA, if required, after looking into the impact of other three civil works. Out of two works in Ratnagiri, Maharashtra, one work construction of multipurpose geotextile reef at Mirya bay was awarded in October 2011 and works completed in Jan 2016. Another one civil work beach nourishment at Mirya Bay was awarded in August 2016. Presently the work is under progress. Based on request received from the government and EAs, the revised loan closing date was extended by 30 months from 31 December 2014 to 30 June 2017. The last review Mission was fielded in December 2016 to record the implementation progress for the state of Karnataka. The approval of SCPMIP tranche 2 for project in state of Karnataka is planned in 2017.</th>
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Implementation Progress
Description of Project Outputs

1. Sustainable plans and management for shorelines developed - (i) Participatory shoreline management plans to meet the long term needs for shoreline management for 2 state coastlines prepared and endorsed; (ii) coastal management information system, to support planning and management established; (iii) project management system established and operational, and subprojects for future tranches planned and designed.

2. Coastal Erosion and Instability Reduced - (i) coastal erosion and instability reduced; (ii) community and private sector engaged in coastal protection and management.

3. Enhanced capacity for integrated shoreline planning and development - (i) Enhanced capacity for districts and states to plan, design, and implement shoreline protection and management projects; (ii) Enhanced capacity for state/district agencies, local experts/agencies, local bodies and stakeholders to provide specialist support for planning, modelling, design, checking and review for coastal protection and management; (iii) beaches are managed and maintained by the communities and stakeholders; (iv) SEAs formally mandated to coordinate all coastal protection and management programs.

Status of Implementation Progress (Outputs, Activities, and Issues)

In Karnataka, SMP procedures and 2 SMP plan (for Dakshin Kannada (DK) and Udupi districts) out of 3 coastal districts prepared and approved by PSC. SMP for Uttara Kannada prepared and approval of the state government is awaited.

In Maharashtra Draft SMP procedures (updated) prepared. Pilot plan for one (Sindhudurg) district out of 6 coastal districts prepared and under preparation for remaining 5 districts.

CMIS is fully established in Maharashtra and under establishment in Karnataka.

Staffs are being trained to manage and maintain the system.

Facility administration manual fully operational.

PMDC mobilized in both the states in January 2012. However, PMDC-M self-terminated the contract effective 28 November 2013 due to certain issues. Meanwhile, MMB has recruited a design and supervision consultant from States' budget for planning & preparing feasibility reports for future projects.

For tranche 2 subprojects, Govt of Karnataka has submitted the DPRs to line ministry and secured TAC clearance on 8 July 2016 and after fact finding mission, two civil works package contracts have been awarded.

In Maharashtra prefeasibility studies are yet to be fully taken up.

Tranche 2 for Karnataka is expected to be negotiated in Q2 2017.

Consultations undertaken with stakeholders for increased involvement in coastal planning and management.

In Maharashtra first SMO formed at Mirya Bay site. In Karnataka, both the SMOs (Bengre and Ullal) are formed.

Karanataka explored PPP activities but were not found feasible for inclusion in tranche 2 of SCPMIP.

Opportunities for few non-port related PPP activities are being explored for future projects by Maharashtra.

GOK issued order for setting up CIMU in Karnataka on 21 Feb 2014 with 26 posts. CIMU is has been established vide GO dated 21 May 2015.

In Maharashtra, CIMU formed at head quarter level under chairmanship of CEO, MMB and 10 members from PMU and MMB staff.

Training plans and modules developed in both states which are being implemented.

Training of staff is ongoing, about 60 staffs provided training in preparation of CEO, MMB and 10 members from PMU and MMB staff.

Technical committee established in Karnataka for review and approval of design of coastal infrastructure.

Not yet due formal approval will be required once shoreline management procedures have been tested and plans successfully developed.

Shoreline policy will be finalized after approval of SMPs for all districts which are under preparation.

Notification of policy will be taken up after approval of shoreline planning and management policy.

Geographical Location

Karnataka, Maharashtra, and Goa,

Safeguard Categories

| Environment | A |
| Involuntary Resettlement | C |
| Indigenous Peoples | C |

Summary of Environmental and Social Aspects

Environmental Aspects

Project construction started for all major civil works packages. ADB fielded mission in January 2015 to review safeguard aspects. PMU and contractors have taken/initiated actions on the recommendations and suggestions made by mission in respect of statutory environmental compliance, implementation of EMMPs, environmental documentation and reporting, testing of environmental parameters etc.

Involuntary Resettlement

ADB fielded mission in January 2015 to review safeguard aspects. PMU confirmed that none of the sub-projects had any issues related to the land acquisition and livelihood. The Mission did not come across any issue of significance.
Indigenous Peoples

ADB fielded mission in January 2015 to review safeguard aspects. The PMU also confirmed that the proposed sub-projects did not impact indigenous peoples. The Mission did not come across any issue of significance.

Stakeholder Communication, Participation, and Consultation

During Project Design

Participatory shoreline management plans (SMPs)

SMPs will be prepared to meet long-term shoreline management needs. Participatory and integrated SMPs, with the participation of women, will be produced for the coastlines of the three states. Shoreline plans will address key issues of the coastal processes, shoreline land use, and present proposals for the long-term sustainable management and protection of the shoreline. The plans will also identify potential economic development opportunities in coastal areas.

During Project Implementation

Output 2 comprises (i) reducing coastal erosion and instability using environmentally and socially appropriate solutions, and (ii) community and private sector engagement in coastal erosion and instability reduction.

1. Reducing coastal erosion, salinity and instability. Coastal erosion, salinity and instability will be reduced through economically viable protection works, using environmentally and socially appropriate solutions. Key areas of other coastal protection interventions include (i) navigation inlets and training of river and drain mouths; (ii) natural protection through the development and planting of dunes, and planting of mangrove or other trees for protection or shelter; and (iii) coastal management, including water quality, dredging, and reclamation.

2. Community and private sector engagement. The key components will be (i) training provided to local communities in shoreline management and income-generating activities, and (ii) new initiatives toward income generation of local communities. The states will take steps toward encouraging private sector investments in coastal protection and management, including putting in place enabling policies and guidelines for private sector participation in coastal protection and management as feasible.

Output 3 includes (i) enhanced capacity within districts and states to design and implement projects; (ii) enhanced capacity of local experts and agencies, and government institutes; (iii) improved capacity of communities and stakeholders to manage and maintain beaches; and (iv) mandated SEAs to coordinate coastal infrastructure projects. Such capacity enhancement is crucial to realize the policy and institutional actions of the investment program road map.

1. Enhanced capacity within districts and states. Capacity at district and state levels will be enhanced to prepare and implement participatory SMPs. CIMUs will be established and shoreline management plans will be prepared and updated at 5 yearly intervals. SMPs will form the basis of long-term shoreline protection and management.

2. Enhanced capacity of local experts and agencies and government institutes. The capacity of local experts and agencies, local bodies, and stakeholders will be enhanced to provide specialist support for planning, modeling, design, checking, and review for coastal protection and management.

3. Improved capacity of communities and stakeholders. The mandates and capacities of communities and stakeholders will be improved to manage and maintain the beaches. Locally based community stakeholders and beneficiaries will support project coordination and monitoring during implementation, and management and maintenance of the beaches.

4. Mandated state executing agencies. The states will take all necessary steps to empower the SEAs to coordinate all coastal management programs. Towards this, the capacity of the SEAs will be enhanced. Establishment of a CIMU within the SEAs will support the coordination of the management information system.

Business Opportunities

Consulting Services

Recruitment of Project monitoring and design consultants (PMDC) for Karnataka and Maharashtra were awarded in December 2011. However, PMDC-Maharashtra self-terminated its contract in November 2013.

Procurement

Procurement Maharashtra - Contract for construction of one multipurpose geo-textile reef at Mirya Bay has been awarded in October 2011. Beach Nourishment tender has been awarded in August 2016.

For Karnataka - One contract for construction of 4 inshore berms at Ullal has been awarded in Feb 2013. Contract for rehabilitation of breakwaters at Ullal awarded in July 2014 and construction submerged reefs has been awarded in November 2014.

Responsible Staff

Responsible ADB Officer

Yadav, Rajesh

Responsible ADB Department

South Asia Department

Responsible ADB Division

India Resident Mission

Executing Agencies

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Maharashtra, India

Ports and Inland Waterways Department
OLDPORTMNG@BSNL.IN
Government of Karnataka Old Mangalore Port, Mangalore
Karnataka, India
Timetable

Concept Clearance 22 Sep 2009
Fact Finding 27 Sep 2009 to 14 Oct 2009
MRM 06 Mar 2007
Approval 06 Oct 2010
Last Review Mission -
PDS Creation Date 15 Feb 2010
Last PDS Update 29 Mar 2017

Loan 2679-IND

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<th>Approval</th>
<th>Signing Date</th>
<th>Effectivity Date</th>
<th>Closing</th>
<th>Original</th>
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<td>17 Aug 2011</td>
<td>28 Nov 2011</td>
<td>31 Dec 2014</td>
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Financing Plan

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<th>Total (Amount in US$ million)</th>
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<th>Others</th>
<th>Net Percentage</th>
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<td>Cumulative Contract Awards</td>
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Status of Covenants

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<th>Category</th>
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Request for Information http://www.adb.org/forms/request-information-form?subject=40156-023
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