

Floristic diversity and natural recruitment of mangrove species in selected mangrove habitats of South Gujarat



Research team at Khambhat, Gujarat, India © GEER

tic diversity; and iii) a socio-economic survey using a rigorous sampling and research design.

Target beneficiaries

Policy makers and local communities.

Outputs

- ▶ A comprehensive survey and mapping of mangroves in South Gujarat.
- ▶ An assessment of the species richness of mangroves in different habitats.
- ▶ The discovery of two mangrove species new to Gujarat (*Bruguiera cylindrica* and *Bruguiera gymnorrhiza*), and abundant populations of two rare mangrove species (*Sonneratia apetala* and *Avicennia officinalis*).
- ▶ The identification of two new mangrove areas (the Purna and Ambika estuaries).
- ▶ An assessment of the status of natural mangrove recruitment in different habitats.
- ▶ The identification of different substrata types preferred by various mangrove species for their regeneration.



Objectives

This Gujarat Ecological Education and Research (GEER) Foundation project set out to assess the floristic diversity, species richness and recruitment rates of mangrove forests in coastal South Gujarat. It also aimed to examine forest substrata to identify the conditions most favoured by mangroves for their natural regeneration, and to assess local people's dependence on mangroves through a social survey.

Background

Gujarat's 1,650-km coastline boasts the largest area of mangroves on India's western coast (936 km², or 22% of the country's total mangrove area). Yet the status of mangrove habitats in southern Gujarat has never been comprehensively surveyed. Though the region's mangroves are some of the most fragmented in India, they are also thought to have the highest potential for successful reforestation.

For these reasons, GEER, with support from MFF, undertook a study with three teams working on: i) a physical survey and mapping of mangroves; ii) a survey of floristic

- ▶ A survey of the dependence of local people on mangroves.
- ▶ A documentary film in English and Gujarati on the mangroves of South Gujarat.

Accomplishments and challenges

The project covered areas that had never been surveyed before, producing important new findings for long-term mangrove conservation and management.

Two species were added to Gujarat's existing species list and need to be included

LOCATION

South Gujarat, India

PRIORITY POWS

- Knowledge for Management
- Capacity Building
- Coastal Governance

DURATION

30 December 2008 to 31 October 2009

MFF GRANT AMOUNT

US\$14,998

in state plantation plans. To this end, the project worked to raise awareness among forest officers, leading to a decision by the Forest Department to establish new mangrove plantations with the newly discovered species in the project's focal areas.

New areas for mangrove regeneration were identified in Navsari and Valsad districts, and the project submitted proposals to the state government urging it to declare the Purna estuary a mangrove biodiversity hot spot. In a continuation of the project, the GEER Foundation is now involved in creating a GIS database and a herbarium.

Challenges

The challenge now lies in working with the Gujarat state government to ensure designation of the Purna estuary as a biodiversity hot spot.

Contributions to cross-cutting themes

Communications

The project documented the socio-economic dependence of local communities on man-

grove forests, and presented its findings to the State-Level Steering Committee for the Conservation of Mangroves and Coral in May 2009. The project also produced a documentary film, *The Lesser Known Mangrove Habitats of South Gujarat*, launched on World Environment Day in 2009 by the Chief Minister of Gujarat.

Gender equality

Both men and women were included in the project's socio-economic survey of local mangrove-dependent communities.

Climate change

By giving authorities the data they need to establish new mangrove plantations, the project has helped to increase coastal resilience to the more frequent extreme weather events predicted under climate change.

Lessons learned

The importance of involving local people in survey work became rapidly apparent – fishers assisted researchers by showing them the locations of key mangrove species.

CONTACT INFORMATION

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