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Capacity Development Needs For Sustainable Management of Marine and Coastal Protected Areas in India: A Cross-sector Assessment

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Summary

To support the capacity development process of stakeholders relevant to conservation and sustainable management of marine and coastal protected areas (MCPAs), the first step is to assess the capacities that already exist and those that are required by specific stakeholders to perform their duties. This paper provides an overview of the methodology and results of a capacity development needs assessment (CNA) study that was undertaken with the aim of identifying the gaps between the desired and existing capacities of key stakeholders *vis-à-vis* sustainable management of MCPAs in India. As the issue of MCPAs involves several stakeholders and sectors, the key to success lies in adopting cross-sectoral approaches. CNA with a cross-sectoral perspective can serve as an instrument for further deepening our collective understanding of the capacity gaps *vis-à-vis* conservation and sustainable management of MCPAs and subsequently support co-creation of effective and efficient solutions for managing these ecosystems. The paper also reflects the main priorities for capacity development in three key sectors, (forest, fisheries and media) and proposes strategic orientation for capacity development in these sectors.

Keywords: *Capacity development; capacity gaps; capacity development needs assessment.*

Introduction

Capacity development is a process through which people, organizations and society as a whole are enabled to shape their development and adapt it to changing conditions and frameworks[1]. In order to trigger sustainable changes in social systems, capacity development measures must address all the levels, *i.e.* the individual, the systems of reference and the systemic level. 'Systems of reference' denotes the individual's immediate sphere of influence and can be an organization, a company, a network or an informal community. 'Systemic level' refers to the enabling environment where the individuals and systems of reference interact and grow.

Capacity development is a long-term, continuing and complex process that depends on the participation and constant interactions between all the concerned stakeholders. Capacity development strategies and approaches require flexibility as the demand for capacity development not only varies enormously between regions and sectors but is also dynamic and changing with time. Therefore, there cannot be a 'one-size-fits-all' solution for capacity development measures and activities. Regular capacity needs assessments; evaluations of demand to ascertain ownership of the impacts; and an adaptive-innovative approach towards implementation of the measures are necessary and need to be considered in a capacity development strategy.

The National Environment Policy (NEP), 2006 of India states that the multi-stakeholder character of environmental issues and continuous developments in the field of environment make it necessary to have a continuing focus on

[1] *http://www.giz.de/en/downloads/giz2012-en-Capacity-WORKS-manual.pdf*

capacity building in all concerned institutions. Coastal and marine biodiversity management is one such issue in India, where supporting key sectors and stakeholders in their capacity development efforts is being considered as one of the key strategies. In view of the multiple uses of coastal areas and keeping in view the conservation of biodiversity, stakeholders who play a major role in the process of establishing and managing MCPAs are not only coming from the environment and forest sectors but also from the fisheries sector (including coastal aquaculture), such as fish workers, fish farmers, , service providers, and fisheries managers and officials.

The issue of sustaining coastal livelihoods while conserving biodiversity cannot be resolved unless and until there are high levels of awareness among all the key stakeholders about the benefits of protected areas as well as the potential challenges that the protected areas may bring in the short-term for enhancing coastal livelihoods. Therefore, in order to facilitate local communities, governments and businesses to make informed decisions and to engage in a dialogue, support from the media community is also critical. The media sector can support awareness and communication through traditional as well as new media forms. The media, specifically the print and electronic media, play a very important role in influencing lives of human beings. As these are the most cost-effective media that reach most households daily, the print media in vernacular languages are the first ones to share what is happening in the world, at the fastest speed.

Capacity Development Needs Assessment

To support the process of development of the capacity of the stakeholders relevant to conservation and sustainable management of MCPAs, the first step is to assess the capacities that already exist and those that are required by specific stakeholders to be able to perform their duties.

The National Training Policy, 2012 of India also envisages a strategic human resource management system that will look at the individual as a vital resource to be valued, motivated, developed and enabled to achieve the ministry/department/ organization's mission and objectives.

This paper provides an overview of the methodology and results of a capacity development needs assessment (CNA) study that was undertaken with the aim of identifying the gap between the desired capacities and existing capacities of key stakeholders *vis-à-vis* sustainable management of MCPAs in India. The paper also reflects the main priorities for capacity development for the three key sectors (forest, fisheries and media) and proposes a strategic orientation for capacity development for sustainable and effective management of MCPAs in India.

Methods

The overall methodological framework was developed on the basis of the guidance for capacity development provided in the GIZ Project Management Tool Capacity WORKS (GIZ, 2011) as well as the Human Capacity Development approach of GIZ[2] and was carried out under the following three broad dimensions of capacity:

- Enabling environment.
- Organizational and networking capacities.
- Individual capacities.

The framework was customized for use in Indian conditions and for key sectors, and comprised tabular formats for stakeholder mapping, capacity gap analysis and potential capacity development measures (Tables 1-5).

Table 1 : Stakeholder mapping matrix

Sector	Stake-holder	Support to conservation of coastal and marine biodiversity	Livelihood dependence on coastal and marine biodiversity/ protected area	Power to influence	Geographical area of influence	Mandate/ responsibility	Relationship with other stakeholders, and the nature of relationship
Forest							
Fisheries							
Media							

[2] *http://www.indo-germanbiodiversity.com/index.php?r=subProject/view&id=4*

Table 2 : Problem and capacity gap analysis matrix

Dimensions of Capacity (one per line)	Function/ purpose	Level of importance	Stake-holders involved	what are the Related problems	Target situation vis- à-vis dimension of capacity	Required	Capacities Existing	Gaps
Enabling environment :								
Policy environment, Legal and regulatory Framework, Consensus on the suitable legal provisions for CMPAs, Research and development Knowledge mangement and Awareness generation measures, Financing instru -ments for CMPAs	Use this column to provide the relative import-ance of the process/frame-work for ensuring success of conservation and management of coastal and marine protected areas	Provide an estimate of the relative level of importance to the function /purpose [Extremely high/high/ medium/ low/very low/ incidental]	Detailed classification of the stakeholder	Problems specific for the process/ stakeholder	What should be achieved through the project in terms of processes/ stakeholder involvement?	-Which capacities exist and where? - Processes -instruments -Resources	Which capacities exist and where? Processes -Instruments -Resources	Which capacities are missing? Processes -Instruments -Resources
Cross-sectoral and cross-stakeholder cooperation :								
Cooperation between State Departments involved in issues relevant to conservation and management of MPAs, Cooperation from the local fishworker and other communities, Cooperation between government bodies and research institutions, Science-policy linkages, Issues relevant to coastal and marine biodiversity protection are discussed in media reports and ther products, Integration of scientific and social cutting edge research into media reports, Integration of local traditional knowledge into media reports								

Dimensions of Capacity (one per line)	Function/ purpose	Level of importance	Stake-holders involved	what are the Related problems	Target situation vis- à-vis dimension of capacity	Required	Capacities Existing	Gaps
Organizations: Training infrastructure for providing induction and refreshers trainings to the CMPA managers and decision-makers, institutes imparting training on biodiversity reporting for media, consortium of journalists working on marine protected areas, facility for exchanging curriculum, training methods, and faculty								
Individuals: e.g. Knowledge and understanding of the young generation on coastal and marine biodiversity and protected areas; Knowledge of coastal marine biodiversity issues, science behind its conservation, and need for MPAs among key stakeholders; Knowledge and skills for efficient management of coastal and marine ecosystems under protection, Knowledge and skills to mainstream coastal and marine biodiversity; ability of media professionals to report on coastal and marine issues; appreciation for conservation of coastal and marine biodiversity and the need and importance of CMPAs								

Table 3 : Matrix for identifying capacity development measures

Target situation vis-à-vis dimension of capacity	Capacity gap	Possible capacity development	Target group	Possible resource organizations/ persons	Expected impact	Expected synergies with existing efforts

The study team consisted of experts drawn from three sectors (forest, fisheries and media) as well as capacity development experts from India and Germany. The first step was an extensive desk review and conceptual analysis to assess the capacity gaps, followed by field visits to collect primary information on capacity needs from key individuals and organizations in the coastal states of India. The field visits were undertaken in the states of Gujarat, Maharashtra, Karnataka and Tamil Nadu to interview stakeholders from the forest, fisheries and media sectors. A number of key forest, fisheries and training Institutes were also visited to receive insights and information. A key aspect of the entire process was an in-depth assessment of the capacity needs of stakeholders with regard to cross-sector and cross-stakeholder cooperation. The results therefore reflect not only the capacity needs of stakeholders in key sectors but also the cross-sector needs of relevant stakeholders.

Preliminary findings from each sector were discussed and reviewed by other sectors at a brainstorming workshop, and capacity gaps vis-à-vis cross-sector cooperation were identified and validated. The CNA concept, approach, methodology and findings were discussed and inputs received at dedicated sessions during the one-week refresher training course for Indian Forest Service (IFS) officers 'Management of Coastal and Marine Biodiversity in India: Challenges and Prospect' held during 20-24 January 2014 at Port Blair, Andaman and Nicobar Islands. The training was organized by the Wildlife Institute of India on behalf of the Ministry of Environment and Forests and was attended by senior IFS officers from the coastal states and UTs of India, including the Andaman and Nicobar Islands, Andhra Pradesh, Gujarat, Karnataka, Maharashtra, Odisha, Pondicherry, Tamil Nadu and West Bengal. The results were further reviewed on the basis of a series of meetings and stakeholder discussions conducted by the study team.

Results and Discussion

Key stakeholders

The key stakeholders for effective and sustainable management of coastal and MPAs in India are the Ministry of Environment and Forests (for providing a conducive legal and policy framework), the governments of the coastal states (which, *inter alia*, include the Forest and Fisheries departments), state biodiversity boards, local fish worker communities and their federations/associations and the regional media. Conservation of coastal and marine biodiversity and management of MCPAs come under the purview of the forest sector. Traditionally, fisheries officials are concerned only with conservation of fishery resources from a perspective of achieving the maximum sustainable yield (MSY).

The existing fisheries-related laws and acts and allocation of business rules at the state or union level do not give much leverage to the fisheries officials for conservation-related activities. However, with the popularization of the concept of an ecosystem approach to fisheries (EAF), fisheries officials are becoming increasingly aware of the conservation needs. On the other hand, for most fish workers, conservation is usually equated to loss of livelihoods and is, therefore, unpopular. However, when consulted and educated properly, fish workers have supported conservation measures. One such example is the seasonal closure of marine fisheriesin all the coastal states and union territories under their Marine Fishing Regulation Acts.

In the media sector (both print and electronic media), the reporters are a key stakeholder in providing crucial support and filling in the serious gaps in creating awareness on the importance of coastal and marine biodiversity and in facilitating consensus. Also critically important are the news gate-keepers (editors, news editors, bureau chiefs).

Problem analysis and identification of capacity gaps

Enabling environment

An enabling legal and policy environment is extremely important for establishment and sustainable management of MCPAs. However, multiplicity of acts and rules dealing with coastal and marine ecosystems, which are not necessarily synchronized, hinders the compliance and enforcement process. This complexity of the legal frameworks and the perceived difficulty in their application in coastal and marine ecosystems is one of the central problem areas for mainstreaming conservation in the production sector. Further, existing laws relating to protected areas and their management primarily aim at protection in the terrestrial landscape; therefore, challenges are being faced in the coastal and marine environments.

The main conflict to be faced by the managers of the MCPAs comes from the local fish worker communities. The existing instruments of protected area management require restrictions/alterations in the fishing practices used by the fish workers in an area, and in some cases no-fishing zones need to be declared to ensure protection of the habitat. This is not a welcome approach for the fish workers as their livelihoods get negatively impacted. However, when consulted and educated properly, fish workers have supported conservation measures. For example, in Chennai, the trawler owners' associations have implemented self-rules putting cap on increase in engine horse power, of fishing vessels and area of fishing. In some other places also, there are tacit agreements within a particular gear-user group (*e.g.* trawlers) or between two gear-user groups on access to fishing grounds.

There is also a perception among such communities that the stakeholder consultation, which is mandatory under the Wildlife Protection Act, 1972 for establishment of protected areas, is not duly followed.

The multiplicity of acts, and often different interpretations cause conflicting views and actions that have caused much harm to the sustainability of coastal protected areas and MPAs. One of the important ways of resolving this conflict is through a common understanding of the legal provisions applicable to the system. Further, non-availability of studies and data on the impacts of sector-policies and activities (ports and harbours, oil drilling, etc) on coastal and marine biodiversity are some of the major gaps in our understanding of coastal and marine ecosystems.

It is now clear that coastal and marine protection essentially is a cross-sector issue involving both the forest and fisheries sectors. However, cross-sector cooperation in management of coastal and marine biodiversity and ecosystem services seems to be the biggest challenge in all the coastal states. Conflict of interests (production versus protection) exist, and gaps in understanding ecosystem services being provided by coastal and marine ecosystems and the impacts of human activities compound the problem. Absence of a common platform for knowledge exchange- on a regular basis- among the key sectors and stakeholders working on the same coastal ecosystems is perceived to be one of the most important factors widening this gap.

Coastal issues in general are regular topics for the media: acquisition of land for big projects, threats to mangroves, illegal reclamation, erosion, ingress of salinity and its impacts on agriculture/horticulture and so on. Also covered is the decline in fish catch or pollution of the coasts because of oil slicks or other threats. Animals-whether flamingos, turtles or fish-make good stories, which have popular appeal, particularly for the electronic media. However, except for a handful of journalists, the media's interest in general in coastal management issues and biodiversity is limited. Usually, some temporary interest is witnessed when environmental meets at the global or national level are held.

Traditional knowledge about sustainable management of coastal and marine ecosystems is also not often brought to knowledge management platforms and decision-making fora, creating serious gaps in our knowledge base.

Further, a lack of sufficient platforms for discussions and dialogue for finding new approaches and better management regimes for MCPAs is perceived as one of the most crucial gaps. Guidelines and tools for strengthening the effectiveness of management of MCPAs is an area that has the potential to strengthen capacities of institutions as well as individuals in the process of development and implementation. Such developments can also bring in positive impacts on the coastal and marine biodiversity that is being protected.

Organizational and Network Capacities

A lack of focus on cross-sector research related to emerging issues such as climate change, invasive species and endangered species management that are of critical importance for sustainable management of coastal and marine ecosystems is another key challenge. Cutting-edge research on developing tools and instruments for facilitating management effectiveness in protected areas is in the nascent stages. Such tools and instruments are available only for terrestrial protected areas, as a result of which there is a gap in achieving sustainability in managing coastal protected areas and MPAs. Insufficient linkages between research institutions and management units of coastal protected areas and MPAs also hinder demand-driven research related to coastal and marine issues. The points of entry are extremely limited for planning and thinking of joint research between government bodies responsible for MCPAs and scientific institutions and experts.

The opportunities for integrating coastal and marine biodiversity and fisheries-related issues are insufficient in the curriculum-of induction as well as refresher trainings-of protected area managers and future decision-makers. Field exposure opportunities to learn about issues relevant to MCPAs and participatory approaches in managing these ecosystems are also limited. Further, limited set of training methods and tools are being used by training institutes in their capacity development measures. This does not allow an inclusive approach, *i.e.* to work upon the knowledge, skill and attitude dimensions. A need to expand the scope of the curriculum, training and learning methods and tools for more inclusive capacity development is perceived.

Very few institutional knowledge-sharing platforms exist for MCPA managers, within India as well as with other

countries. Such fora are necessary for exchanging success and failure in protected area management practices, sharing good practices and learning new skills.

Individual Capacities

When it comes to individual capacities in terms of knowledge, skills and attitudes as well as shared values, limited capacities exist among the key stakeholders vis-à-vis addressing the challenges and problems that coastal and marine biodiversity is facing. In a shifting paradigm, where the protected area management now spans coastal and marine biodiversity apart from the conventionally managed terrestrial resources, it is relevant that the forest sector, responsible for coastal and marine protection, be equipped with the best information about coastal and marine issues, the required technical and leadership skills and the ability to manage the change.

An ability to appreciate the coastal and marine biodiversity, the ecosystem services arising out of it and the need and importance of protecting it among the key stakeholders-especially in the fisheries sector-is as critical as the legal and financial resources. The need and importance of awareness measures and knowledge management strategies often do not get the desired attention and efforts from development projects. Existing efforts to develop awareness are effective, but there is a need to intensify awareness activities and to develop customized packages for bringing together different sectors and stakeholders. The communication and cooperation exist on a random and as-and-when-required basis, which does not lead to a long-term partnership.

The low level of reporting on coastal and marine biodiversity-related issues in the popular media contributes to the maintenance of the poor awareness levels among the key stakeholders about the relevance and need for coastal and marine biodiversity conservation. Reporting on the coastal and marine environment is mostly done by district and local reporters and stringers (non-staff journalists). Their understanding of the cause-and-effect linkages in environment issues is limited by the fact that they are non-specialists. Their challenge is intellectual, emotional, resource-linked and ethical. Especially when covering development-versus-environment issues (such as thermal power plants, ports and oil exploration), journalists find it difficult to access reports. They feel inadequate in understanding and covering the larger picture of which that particular project is a part.

At times journalists find it difficult to understand the linkages between local development and policies at the State and the Centre and at international negotiations. They also have difficulty in getting adequate information for understanding cost-benefit trade-offs. Government officials are reticent, and most scientists are hesitant to speak to journalists. There are no regular avenues for integration of scientific information, traditional knowledge and social dimensions related to coastal and marine biodiversity and ecosystem services in media reports and other products.

In fisheries science, raising awareness of fish workers and other stakeholders was never a priority, and fisheries scientists by and large also lack the skills required for communicating with the media and stakeholders. The main gap identified with respect to fisheries sector is a lack of understanding of the national laws that have a bearing on this sector from an ecosystem perspective. Especially, for fisheries officials, their qualifications for appointment and post-recruitment departmental training programmes do not include familiarization with the acts and laws other than those that are more applicable form the conservation of the resources point of view. There is also a lack of awareness about international binding and non-binding agreements to which India is a party. Therefore, the possible capacity development interventions include development of a curriculum for a refresher course in national and international laws and their larger implications. For sustainability, this curriculum also needs to be adopted in departmental training facilities.

There is also a need to develop networking and leadership capabilities among fishery and forestry officials aiming at intra-departmental, inter-departmental and department-community interactions.

Way Forward

There is a complex interdependence between the three levels of capacity development. The factors favouring or blocking capacity development are often of a systemic kind-meaning that attention needs to be focused on the relationships between the enabling environment and other levels. Capacity development, therefore, cannot be regarded as being restricted to enhancing individual ability; all target levels must be considered and, if necessary, integrated into the approach. A capacity development strategy that focuses solely on training of individuals about conceptual issues without taking into account the specific skills and attitudes required to bring that conceptual information to work or without addressing the organizational environment will probably only achieve short-time effects and will not contribute to sustainable development of capacities in the context it operates (OECD, 2006).

Based on the above results, and the background knowledge about various capacity development approaches (GIZ, 2011a, 2011b and 2013, MoEF 2013), we propose a strategic framework for capacity development towards sustainable management of MCPAs in India (Figure 1). The measures proposed are a mix of interventions for supporting capacities

for an enabling environment, enhanced cross-sector cooperation, strengthening organizational and network capacities and enabling individuals.

As the issue of MCPAs is a multi-stakeholder and multi-sector issue, the only solution lies in adopting cross-sector approaches to finding solutions to the problems. CNA with a cross-sector perspective can serve as an instrument for further deepening our collective understanding of the capacity gaps vis-à-vis conservation and sustainable management of coastal and marine biodiversity and protected areas and subsequently support co-creation of effective and efficient solutions for managing these ecosystems.

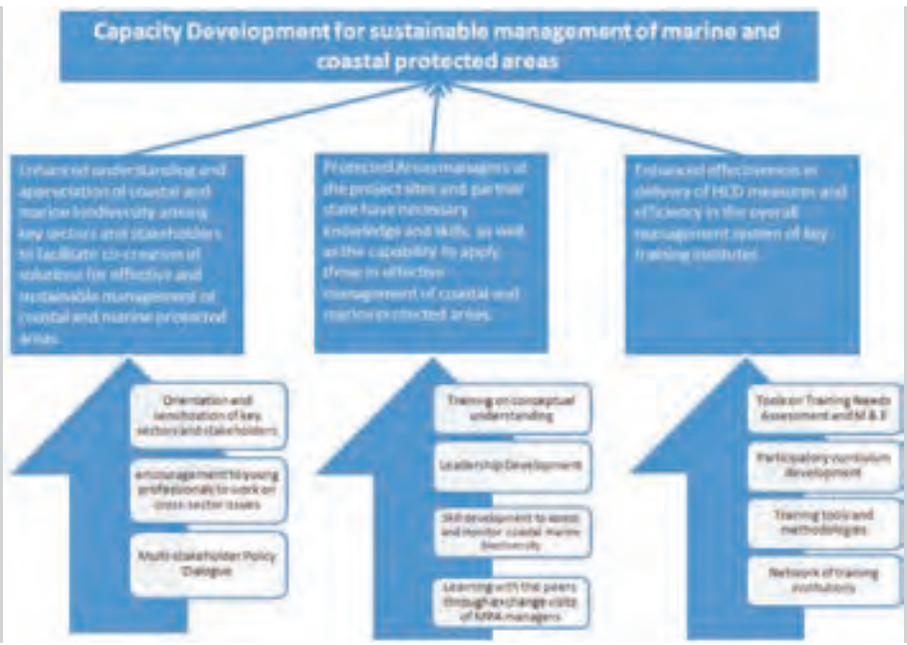

Fig 1 : *Strategic framework for capacity development towards sustainable management of Marine and Coastal Protected Areas in India*

Acknowledgements

This article is based on the results of a study 'Capacity needs assessment *vis-à-vis* coastal and marine protected areas in India', conducted by the Indo-German Biodiversity Programme under the project 'Conservation and Sustainable Management of Existing and Potential Coastal and Marine Protected Areas in India (CMPA)', commissioned by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) and implemented by the Deutsche *Gesellschaft für Internationale Zusammenarbeit* (GIZ) GmbH with the Ministry of Environment, Forests & Climate Change (MoEF).

The authors would like to thank Dr. J.R. Bhatt, Advisor, MoEF, Mr. Edgar Endrukaitis, Director of the Indo- German Biodiversity Programme, and Dr. Michael Vakily, Team Leader of the CMPA Project, for overall guidance and support towards this study. The authors are also thankful to the following experts for their contributions and valuable inputs to the study: Mr. Peter Bank, senior capacity building expert, Ifanos, Germany; Dr. J. A. Johnson, Dr. G. V. Gopi, and Mr. S. Prakash from the Wildlife Institute of India; Mr. Joydeep Gupta, the Third Pole Project; Dr. Deepak Apte, BNHS; Md. Sharif Uddin, BOBP-IGO; and also Dr. Suvarna Raju and Ms. Fahmeeda Hanfee. The authors would like to extend their gratitude to the PCCFs of Gujarat, Maharashtra, Karnataka and Tamilnadu states for their support in facilitating the field visits. We also appreciate the extensive insights and information provided by the experts and organizations contacted during the field interviews.

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