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Exploring Institutional Climate Capacity Assessment Indicators of Community-Based Organizations in the Conservation Projects: A Participative Approach

Ravi Sharma[1]† and Vinayak Patil[2]

[1]Symbiosis Institute of International Business, Symbiosis International (Deemed University), Pune-411057, India
[2]Department of Forestry, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, Maharashtra, India
†Corresponding author: Ravi Sharma; ravi.sharma@siib.ac.in; ravisharma_16@yahoo.co.in

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ABSTRACT

The present comprehensive study seeks to evaluate the institutional climate capacity of Community-based Organizations (CBOs) involved in coastal ecotourism conservation projects along the Maharashtra coastal region in India. The primary objective is to understand the community interactions, organizational structures, and adaptive capacities of CBOs in the face of climate change, utilizing an integrated approach through participative and stakeholder interaction. The research methodology employed through the integrated investigated assessment, which includes- focused group discussions (n=06) and a survey of key informants' interviews and community participants (n=143), additionally were added to this set of data combined for a total of 204 respondents, to comprehensively evaluate the institutional climate capacity of the CSOs engaged in coastal ecotourism projects. The findings identify key dimensions influencing CBO-led conservation projects, emphasizing the importance of different actors' interplay and processes reflected through the communities. Notable strengths include effective communication, inclusive planning, and budgetary processes contributing to climate action orientation, emphasizing strengths in communication, inclusive planning, and budgetary processes. Socially excluded groups actively participate, underscoring the significance of their involvement for project success. Integrating socio-cultural factors into climate change planning is highlighted, emphasizing the need for quantitative research in this area. These identified key dimensions influence the CSO's institutional climate capacities.

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INTRODUCTION

Climate change poses a significant threat to human societies and natural ecosystems, presenting challenges extending to social systems. Global attention has been increasing in recent years in adapting to these changes. International efforts, such as the United Nations Framework Convention on Climate Change (UNFCCC), National Adaptation Plans (NAPs), global institutions, and the Intergovernmental Panel on Climate Change (IPCC), have structured frameworks to assess climate impacts and vulnerabilities (Ingram & Hamilton 2014).

Civil society organizations (CSOs), Community-based organizations (CBOs), and Non-Governmental Organizations (NGOs) play crucial roles at local and regional levels in guiding stakeholders on climate actions and policies through grassroots engagement. Their contributions are integrated into governance processes, reviewing policy impacts through action research. CBOs particularly drive environmental governance, including efforts related to climate change and biodiversity conservation (Dupuits 2016). Climate adaptation involves adjusting to the current and anticipated effects of climate change. Institutional participation across various domains is essential for local and regional development, bridging

gaps in climate change response. At both macro and micro levels, institutions like CBOs and NGOs are pivotal in implementing climate awareness at the community level and contributing to achieving sustainable development goals (SDGs) (Patterson 2021). CSOs are key actors in climate action strategies, facing the challenge of effective adaptation within evolving climate governance frameworks (Bhardwaj & Khosla 2021, Patterson 2021). On the other hand, these institutions bridge the gap between local institutions and communities and climate change adaptation at the macro level. These organizations provide an extended organizational arm to society in increasing citizen engagement in public policy problems and creating solutions by providing answers to society development processes, including livelihood and social security net.

CBOs encompass a range of local self-governance bodies, including elected municipal councils, urban local bodies, village councils, self-help groups (SHGs), intermediate governing bodies, and various economic and social NGO associations. Through diverse approaches and action plans, these CBOs and NGOs have effectively mapped out strategies to conserve ecological systems while locally enhancing rural communities' social and economic fabric. Studies are advocated through a focus on protected area networks, assessing the specific strategies NGOs utilize in the planning, adopting, and managing those networks (White et al. 2022). Bridging an organization's connections among the actors or stakeholders at various levels of governance and indigenous knowledge of local communities, including capacity building, improves access to resources and information, thereby building local governance institutions (Berdej & Armitage 2016). It was found that countries have unique ways of producing and using indigenous community knowledge adopted by the different institutional structures involved in their formal and informal practices (Tosun & Howlett 2021). Such institutional structures are crucial and play a dominant role in shaping the responses to strategic and policy issues, including the policies and actions on climate change (Njuguna et al. 2022). The capacity building of these CBOs to address climate change at the grassroots level will provide more meaning in recognizing climate change adaptation and mitigation measures among coastal communities. Therefore, there is a shortage of knowledge enhancement on the climate capacity assessments of these CBOs, which will help in understanding the key challenges and issues these CBOs are facing and addressing the gaps to explore the opportunities for these CBOs to address climate change.

The success and long-term viability of community-based natural resource management initiatives have been mixed, often hindered by challenges in institutional sustainability. To address this, the research employs a participatory approach, using focus group discussions (FGDs) to assess the institutional climate capacity of coastal-forest community-based organizations (CBOs). Drawing on field research with CBO members and communities involved in ecotourism projects, the study aims to identify key factors influencing the ability of these organizations to effectively govern and manage coastal forest resources, highlighting their climate resilience and adaptability capacity. This study will attempt to provide the existing capacity level studies with the CBO communities required for addressing the climate action at the ground level. In addition, what are the specific indicators within the approaches and frameworks implemented for institutional capacity assessments regarding adaptive capacity assessment and risk management through community-based conservation projects; what are the specific existing gaps in the approaches, and how are the CBOs required to address them while dealing with the climate to address at the community level in understanding adaptive capacities towards their goals and priorities would be the key agenda objectives of carrying this study? Specifically, the study examines the role of local institutions, the legitimacy and accountability of management structures, and the interplay between community needs, forest resource dependency, and conservation objectives.

By engaging community stakeholders through the FGDs, the research aims to capture their perspectives, experiences, and insights, allowing for a more comprehensive understanding of the institutional climate and the barriers or enabling factors that shape the capacity of these organizations. The findings of this study will contribute to the growing body of knowledge on community-based natural resource management, providing valuable insights for policymakers, practitioners, and community leaders working to enhance the long-term sustainability of coastal forests.

MATERIALS AND METHODS

Field investigators engaged with coastal forest communities and organizations to map the institutional climate capacity of community-based organizations (CBOs). Organizations involved in coastal ecotourism or environmental conservation projects in mangrove forests were selected. A participative approach combined focused group discussions (FGDs) with iterative surveys to assess CBOs' climate capacity. The surveys, conducted after FGDs, focused on identifying influencing factors and assessing stakeholders' agreement on the climate resilience of community-based ecotourism (CbET) projects. The surveying approach was conducted after the completion of FGDs at the specific areas of the

study. The essential items in the surveying schedule include the following: The assessment focused on basic information about the ecotourism project model, type, and community engagement level. It evaluated the community's climate change adaptive capacity and resilience, gauging opinions on climate impacts and response capabilities using a Likert scale. The assessment categorized indicators into anticipated climate responses, emotional reactions, risk mitigation expectations, readiness for implementation, and overall climate risk management approaches.

The approach of FGDs and surveying yielded descriptive information about the project activities, level of engagements, institutional structure, and the project's outcome relating it to the institutional adaptive capacity of the CBOs.

Sample and Analysis of Data

The study sample consists of ecotourism projects in the Ratnagiri and Sindhudurg districts of the Maharashtra State coastal belt. Five village projects were identified and led by some CBOs, and the community-engaged projects through the self-help groups (SHGs) were the key to the project. The projects are mostly related to the livelihood generation and conservation of mangroves and coastal resources through the involvement of local coastal communities. The three projects were in Sindhudurg district, while two were in Ratnagiri. To characterize the community's perceptions of the CBO's climate capacity, the stakeholders' engagements and interactions were organized through a participative approach, conducting small FGDs at different study area locations. These FGDs were conducted from August 2022 to December 2023, and six small FGD sessions were conducted at the suitable villages.

Along with these FGD Sessions, parallel interviews through the pre-tested questionnaires were implemented to survey the CBO community members, staff, officials, and SHG members individually to mark the agreement on the factors considered for the climate capacity assessment of the study. During the survey with the SHGs and CBO staff members, we used the snowball approach using participants' responses to identify up to three individuals they would consult through their work. This approach helps us better represent community members involved through the project with the CBOs. The details of the community and stakeholder participation in FGDs in the study area are explained in Table 1.

Our sampling included 6 FGD sessions with 61 participants and survey data (n=143), totaling 204 participants. We used basic descriptive coding for analysis and transcribing and coding audio recordings from FGDs. These discussions provided insights into the interactions between the community and CBO members, focusing on CBO structure, engagement, resources, project execution, and climate adaptation strategies. Thematic content analysis was conducted, supported by observational field notes. Emerging themes were categorized by typology, validated through literature and expert opinions, and used to identify key strengths and gaps in climate adaptation. The key themes were divided into motor, niche, basic, and emerging themes, further helping identify institutional climate capacity factors.

RESULTS AND DISCUSSION

Preliminary Identification of Relevant Themes

The literature study and expert validation have identified the key thematic evolution of the various aspects of climate capacity assessments of the organizations based on their work and contribution through community projects. The experts validated the key emerging themes and motor themes, which originated through their project models and community involvements (Fig. 1). The emergent themes identified that the key climate-related issues, like flooding, conservation, etc., were emphasized through the governance approach

Table 1: FGD Participants' details from the study area.

Location of FGD	Key Stakeholders participated	No. of Participants
Anjarle (Ratnagiri)	SHG members, Village council members, Project Specialists from CBOs, Project beneficiaries	23
Songaon & Chiplun (Ratnagiri)	SHG members, Village council members, Project Specialists from CBOs, Project beneficiaries	06
Mithmumbari (Sindhudurg)	Women SHG members, Village council members, Project Specialists from CBOs, Project beneficiaries	17
Achara (Sindhudurg)	Women SHG members, Village council members, Project Specialists from CBOs, Project beneficiaries	07
Mandavi	Women SHG members, Village council members, Project Specialists from CBOs, Project beneficiaries	03
Nivati(Sindhudurg)	Women SHG members, Project Specialists from CBOs, Project beneficiaries	05
Total 06 FDPs		61

and capacity-building initiatives integrated through the CBO-Community project models. This has resulted in better coastal management and decision-making at the community level, enhancing their adaptive capacity and depicting important factors for determining institutional resilience while dealing with climate issues. The other key aspects that CBOs, through their community engagement model, depict showcasing their climate resilience and adaptive capacity were stakeholder engagements, local participation (a participative and institutional mechanism), and climate vulnerability assessment through their project approaches with communities. The NGOs/CBOs/and SHGs at the grassroots levels addressed the risk management of climate hazards and their social consequences.

Factors Defining Institutional Climate Capacity of the CBOs through Community Perceptions

The factors and key criteria under each factor were categorized from the various FGD sessions, qualitative analysis of communities' perceptions, and validation through renowned agencies' publications and published research. The categorization and the factors required for the assessment of climate capacity and resilience of community-based ecotourism projects through the CBOs as identified from the participatory approaches are explained below:

Institutional Climate Capacity Factors

a) Governance and Leadership Mandate: Clear roles, responsibilities, authorities, and public availability of mandates.

b) Organizational Structure: Involves CbET beneficiaries, socio-cultural drivers, knowledge management, objectives, implementation capacity, transparency, legal knowledge, proactive goals, Indigenous knowledge integration, adaptive co-management, and leadership coordination.

c) Information Accessibility: Involves ICT use, best practices dissemination, stakeholder engagement, and access to sectoral funding and public information.

d) Resource Management: Focuses on collaborations, resource allocations, organizational assets, skilled human resources, and stakeholder engagement for context-specific knowledge.

e) Strategic Planning: Includes stakeholder participation, risk assessment, partnerships, feedback, and rule adjustments.

f) Design-Plan Implementation: Enhances spatial planning and climate change mitigation objectives.

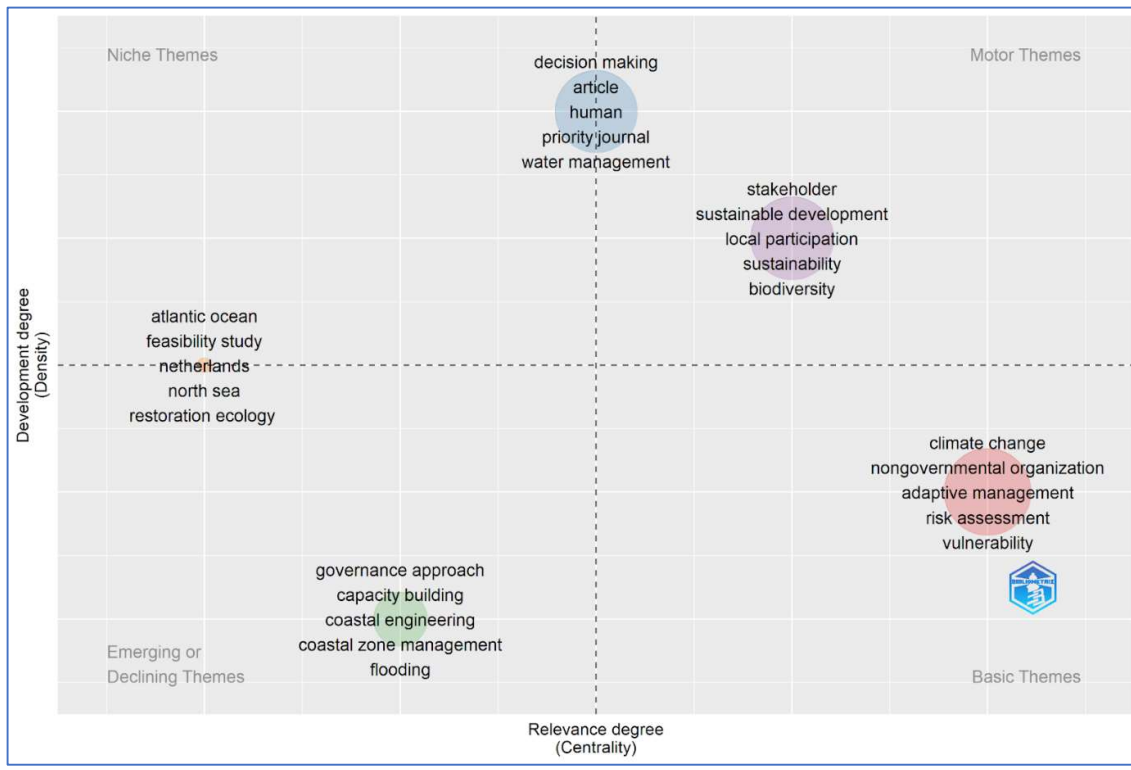

Fig. 1: Key themes showcasing interlinkage of CBOs and Community associations related to climate change factors.

g) Monitoring and Evaluation: Covers policy and project assessments, performance evaluation, social impact, and resilience measures.

h) Knowledge Management: Involves learning, network efficiency, spatiotemporal knowledge, knowledge-based planning, and risk modeling.

The participative approach identified key institutional climate capacity indicators for assessing CBOs, focusing on how stakeholders in coastal ecotourism influence and are influenced by CBOs in formulating plans and processes. These interactions highlight the conditions necessary for climate-resilient ecotourism, enhancing the knowledge and climate resilience of communities and CBOs. The CBOs' processes and engagement with communities reflect their climate capacity, shaping mutual learning and improving institutional capabilities. This interaction-driven learning empowers communities to implement sustainable ecotourism practices, with the resulting actions evaluated to assess the effectiveness and impact of CBOs in addressing identified challenges and opportunities. In the relationship, the interaction of CBO with the communities through an initiative reflects on learning among the staff and community members captured through their perceptions and group interactions. This learning, in turn, empowers the community to take 'actions' by providing them with the knowledge and skills needed to implement sustainable ecotourism practices on the ground. Finally, the actions would lead to the 'performance', which is evaluated as the impact of those actions, ensuring that the project effectively addresses the challenges and opportunities identified, showcasing the strengths or weaknesses of the CBOs.

Inter-component Matrix Interpreting Institutional Climate Capacity Through Community Projects

The FGD interactions with the community SHGs and stakeholders of the community and projects have resulted in the understanding of various situations and actions involved in the processes, including the planning for the project towards conservation and resilience—the cross-interaction matrix translating the relation between learning into actions as illustrated in Table 2.

The inter-relational matrix indicates a strong influence of climate action plans based on planning (L*1) with the actions resulting in their capacity and resilience. The key actions displayed by these institutions working in the CbET reveal enhanced participation among themselves, resulting in knowledge management and capacity building related to conservation, environmental issues, and climate change (L*1- A*2, A*3) and (L*2- A*4). Those SHGs and communities have shown positive and perceptional solid focus on this, which have achieved confidence and maturity in understanding the business of ecotourism and addressing the environmental issues through their ecotourism approach. Such institutions or cooperative groups (Women SHGs) based on their recognition and accolades received in this field. A women's SHGs group from Vengurla reveals that the recognition and interaction with the outside world have brought a lot of courage to deal with environmental issues and spread awareness among the women members in their group on biodiversity and coastal degradation issues. They can now sustain ecotourism and conservation practices because of support, knowledge sharing, and capacity building provided by the Mangrove Foundation and the United Nations Development Programme India (UNDP). The Global Environment Facility funded the UNDP project. The Swamini SHG group has received many accolades and recognition because of their initiative and work at the national and international levels. With the appreciation and support from these agencies, the all-Women SHG group is working on mainstreaming biodiversity in the region and presented the idea of a mangrove safari. Their initiatives have raised awareness among the villagers and the tourists. These groups have received support from various institutions and forest departments in terms of developing capacity and participation at regional and state levels. All such efforts have resulted into an effective coomunication among members and resolution of conflicts among each others.

The other key outcome actions revealed as an indicator of the institutional climate capacity of these community-based organizations (CBOs) focused on the interaction between the quality of resources and its importance in setting realistic targets and assessing stakeholders' needs and their satisfaction from the initiatives [L*3-A*3; L*4-A*5]. The importance of design-plan implementation in relation to resources and knowledge management has been advocated in the previous chapter. The same has been revealed through the participatory approach. The SHGs and other stakeholders indicated that the organizations could set targets consistent with the targets and outcomes to achieve and address the priorities of stakeholders aligned with their objectives of conservation and awareness. The study could not find any relational matrix between the formats of archived data to identify the indicators of knowledge management and planning or assess the needs and satisfaction of the stakeholders engaged with the organization or among the members (L*6- A*1-5= 0). The participant's discussion revealed the difficulty of accessing the existing relevant climate and performance parameters due to its technical nature or lack of coordination. However, no consensus was developed on the same due to a lack of knowledge in the domain. The solution to such gaps can be addressed

Table 2: Cross interaction Matrix between Learnings (L*) and Actions (A*).

	A*1: Monitoring and evaluating climate change work and Implementing results/project	A*2: Participation in knowledge management regarding climate change	A*3: Climate change plan and setting realistic targets	A*4: Providing climate change services and programs	A*5: Assessing stakeholder's needs and satisfaction
L*1: Climate action plan based on scenario planning for management decision	-	The organization has a system for documenting, storing, and disseminating climate change knowledge, which is accessible both externally and internally (1).	-	The extent to which services and programs align with the priorities and make progress against the objectives laid out in the strategic plan (1)	-
L*2: Awareness regarding climate information, mitigation practices, and influencing policy	-	-	-	The organization provides climate change services and programs aligning with the risks and opportunities identified in the strategic plan (1).	-
L*3: Quality of realistic resource requirement	-	-	The targets are set yearly and can be revised, and proper actions are taken if they are not met (1).	-	-
L*4: Mutually beneficial knowledge management	-	-	-	-	There is a transparent process for prioritizing services and programs; services and programs address stakeholders' climate change needs and priorities (1)
L*5: Knowledge of indicators and preventive risk modeling and data management	-	-	The organization consistently sets realistic targets for appropriately chosen climate change quantitative and qualitative indicators (1)	-	-
L*6: Helpful format of the archived data	-	-	-	-	-

Source: Compiled by Authors based on FGD and survey analysis

through a collaborative approach among the institutions and CBOs in developing information and data in prescribed understandable formats for a resilient and informative institutions fo rthe community.

The key inter-relational matrix of the actions as an influence of institutional actions and processes resulting in the learning process of communities further leading to the performance of the CBOs has been illustrated in Table 3. The performance of the CBOs could be an outcome because of the improved situation, resulting in the enhanced capacity level of actors, institutions, and workflow simultaneously. Analyzing performances and actions leads to identifying gaps and issues these CBOs must address to develop their climate capacity and resilience. The crucial performance variables, as revealed through the study, affecting the capacity of the institutions are their capacity to achieve adaptation and mitigation initiatives, employ approaches to ensure maximum and effective participation among the actors involved, capacity to recognize their roles and functions, and clarity on the requirement of data to manage to have the capability of leading to informed management decisions.

The actions taken by the communities, as influenced by various situations and processes factors by the organization's interaction with community members, lead to the performance of the institutions, depicting the strengths and weaknesses of these institutions in addressing the climate change requirements

Table 3: Cross interaction Matrix between Actions (A*) and Performances (P*).

	P*1: Achieving clear and measurable climate change adaptation and mitigation results	P*2: Employing approaches to ensure the participation of other actors	P*3: Recognition of functions and roles	P*4: Intended to clearly and accurately monitor data	P*5: Data leads informed management decisions
A*1: Monitoring and evaluating climate change work and Implementing results/project	The organization generates climate data, information, or analysis, and the generated data satisfies the purpose (1).	-	-	The organization often monitors and evaluates climate change work and results (1)	It is measured consistently over time and has sufficient precision and timeliness to inform management decisions (1).
A*2: Participation in knowledge management regarding climate change	Efforts are made to prioritize needed climate information, data, and analysis; the prioritization matches the organization's stated climate change goals and objectives (1)	The organization employs approaches to ensure the participation of other actors in accomplishing its objectives, particularly on climate change (1)	Local communities and other actors recognize the organization's functions and roles: (1)	-	-
A*3: Climate change plan and setting realistic targets	Performance monitoring data clearly and accurately represents intended results (1)	-	-	-	-
A*4: Providing climate change services and programs	services and programs achieve clear and measurable climate change adaptation and mitigation results (1)	-	Clear timelines, responsibilities, and resources are assigned for the climate change services and programs (1)	Services and programs are based on adequate and appropriate climate information, data, and analysis (1).	-
A*5: Assessing stakeholder's needs and satisfaction	-	-	-	Projects are monitored regularly, and the needs and satisfaction of customers of the organization's climate change services and programs are assessed often (1)	-

Source: Compiled by Authors based on FGD and survey analysis

and their capacity. The performance can be enhanced through the learnings over a period of time. Also, because of the influencing factors, the performance outcomes lead to multiple learning, which cumulatively directly or indirectly leads to the organization's overall performance. It has been found from the discussions that the key learnings that these communities value for their association with the CBOs or as CBOs are in the form of experiential learning through stakeholders' feedback and collaborations. There is no set format for data monitoring and evaluation that generates the input analysis or a formal setup intriguing into the improvement aspects. They also believe that the key umbrella organizations (Nationally & International levels) have skilled resources and staff, providing opportunities to these institutions at the different platforms and recognizing their roles and functions at the broader level. The community participants and local institutions agreed that collaborative strategies and feedback mechanisms among the group members, irrespective of their locations, have helped in identifying different risks and opportunities affecting the community projects. For the monitoring and evaluation of the projects, the level of knowledge regarding resource management and evaluations needs to be established through learning feedback mechanisms and expertise knowledge by the supporting institutions and channels for improved performance. At present, the forest department staff and their livelihood specialists provide the initial support associated with the project for each location and are the only resource for the community group projects.

The key learning or re-learning factors influencing the community values towards the association with the CBOs or reflecting the capabilities of their internal structure are perceived strongly through opportunities provided and recognition at the different levels and platforms. The collaborative effort and internal management decisions are based on experiential learning. Feedback mechanisms (informal & formal) and staff competencies are essential for assessing these institutions' climate capacity.

To sum up the results, it is envisaged that the study identifies the determinants of the value and the capacities of the local CBOs dealing with the conservation projects, determining or reflecting the adaptive capacity of these CBOs in terms of their resilience when dealing with the local communities through the conservation model intervention. This will also provide input for the CBO working with the communities to identify their strengths and opportunities to improve in managing and enhancing their adaptive capacities to deal with climate change through such initiatives. Such results are significant in informing policy and practice at a local, regional, and national level.

CONCLUSION

The study deployed conceptualized dimensions based on the CBO's interaction with the communities in certain situations where there is an interplay of various stakeholders and processes leading to the learning model development. The data was collected through consultative approaches involving CBOs, NGOs, and SHGs, using FGDs and key informant interviews in the conservation project areas. The interpretive stance of this exploratory qualitative framework is helpful for systematically inducing a learning outcome on climate risk mitigation of coastal ecotourism activities/ services provided by the local communities. The perceived community value is an indication of assessing the climate institutional capacity of the CBOs capable of defining their key strengths, weaknesses, and gaps related to climate actions through conservation models. The consequential actions need to be further planned and executed. Within the scope of the present baseline study, the interconnections were explored by collaborating the institutional climate capacity through the perceptions of the community stakeholders engaged with these CBOs. The outcome discusses the awareness, learning dimensions, and adaptive capacities of CBOs about climate change, adaptive capacity, mitigation, and knowledge management. The study outcome accurately reflects the focus on evaluating the institutional climate capacity of CBOs and their role in addressing climate change challenges. It emphasizes the assessment aspect and highlights the importance of understanding the capacity of CBOs in dealing with climate change issues.

The findings presented that the CBOs operating through the conservation-based approaches through the local communities can demonstrate a high level of awareness regarding emerging information on climate change. Community-based institutions can effectively coordinate with internal and external organizations for collaborations, capacity building, and sharing similar mandates. Such collaborations are considered crucial for the success of conservation efforts and enhance the climate resilience of CBOs engaged. Most institutions have established formal mechanisms for inter-organizational coordination, such as task forces, self-help groups, cooperative societies, village management committees, task forces, and capacity-building programs, to pool resources and amplify their impact. The study envisaged the involvement of socially excluded groups in implementing the CBO plan to ensure relevance and effectiveness. By participating in the planning, implementation, and evaluation processes, these groups can play a significant role in the plan's success. The staff and stakeholders are actively involved in developing the mandate/mission, and there are effective communication and coordination mechanisms within the CBOs & CBOs. Overall, the perceived values of the actor processes reflect the strengths and weaknesses of CBOs' institutional climate capacities, which are crucial for capacity building and sustainable conservation efforts.

The synthesized key interaction components highlight an integrated approach to learning and action, informing the design and delivery of experiences that empower communities to take informed actions; learning bridges the gap between understanding community needs and empowering them to implement sustainable practices, with knowledge dissemination and skill-building initiatives by CBOs and agencies like the Maharashtra Mangrove Foundation, Forest Department, UNDP, and Global Environment Facility playing crucial roles. Participation in ecotourism and conservation practices enhances community resilience and recognition, exemplified by the successes of groups like the Swamini Women SHG and Dapoli ELP unit. However, challenges such as technical expertise and resource availability hinder data collection and implementation, emphasizing the need for formalized feedback mechanisms and capacity-building. The performance of CBOs is shaped by the interaction between situations, actors, processes, and learning components, with continuous learning and partnerships contributing to their adaptive capacity in addressing climate change. Understanding community values and capacities informs policy and practice, empowering CBOs

to enhance their effectiveness in managing conservation projects and community engagement.

The findings highlight and determine the adaptive capacity of local CBOs and provide insights for improving their resilience and adaptive capacities in managing climate actions through conservation initiatives. The findings have implications for informing policies and practices at local, regional, and national levels. Additionally, the findings underscore the importance of holistic approaches to learning and action, collaborative partnerships, and continuous capacity-building efforts in fostering community resilience and sustainable environmental practices. These insights serve as valuable inputs for policymakers, practitioners, and funding agencies seeking to support community-based conservation initiatives and address climate change challenges effectively.

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