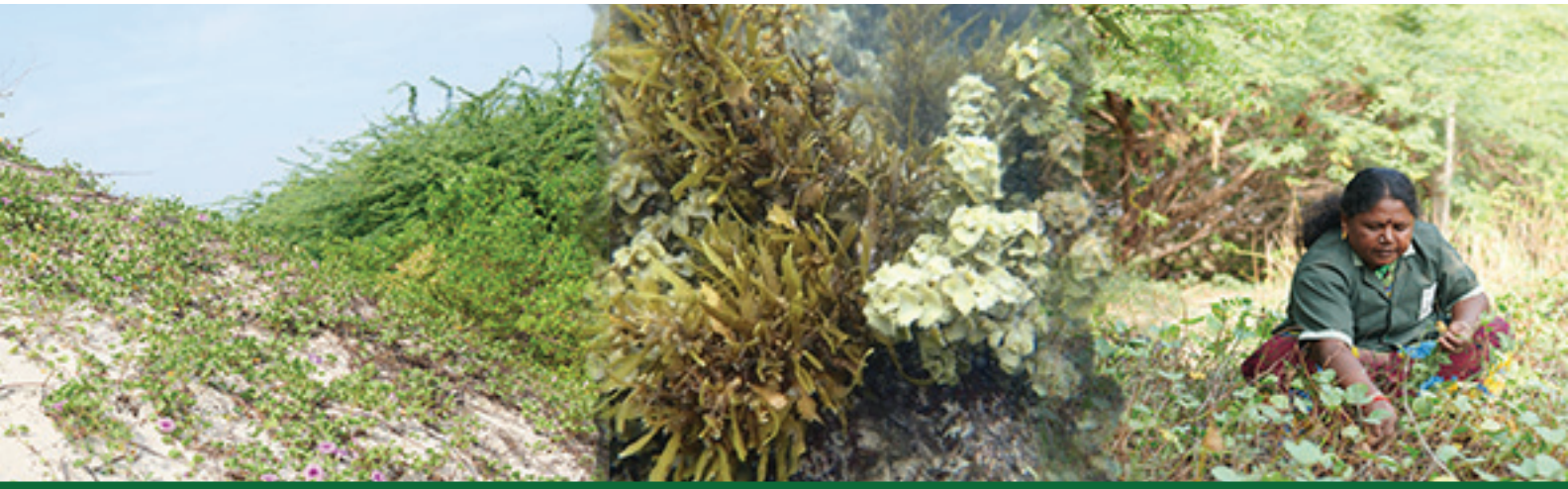
SGP The GEF Small Grants Programme

gef UNDP



Community-Led Biodiversity Restoration in Coastal India: Local Actions Creating Global Impact

Insights from GEF Small Grants Programme (SGP) India OP 7

teri The Energy and Resources Institute
Creating Innovative Solutions for a Sustainable Future

CSD Council for Social Development

Table of Contents

About the Booklet

This booklet documents how community-led initiatives across coastal and coastal-linked regions of India are contributing to biodiversity restoration, ecosystem resilience, and sustainable livelihoods under the Global Environment Facility Small Grants Programme (GEF-SGP) India Operational Phase-7 (OP7).

The GEF-SGP OP7 in India is being executed by the Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India, and implemented by the United Nations Development Programme (UNDP). The Energy and Resources Institute (TERI) serves as the national host institution for the programme in India.

Prepared in the context of the International Day for Biological Diversity 2026 themed "Acting Locally for Global Impact," the booklet highlights how local action can contribute meaningfully to global biodiversity goals under the Kunming–Montreal Global Biodiversity Framework (KMGBF).

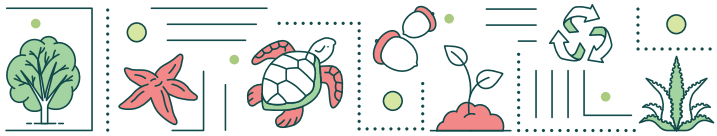
The publication presents eight case studies from Tamil Nadu and Maharashtra covering diverse restoration approaches, including artificial reef restoration, ghost gear management, sand dune restoration, seaweed cultivation, sacred grove conservation, agro-biodiversity restoration, watershed management, and indigenous crop conservation. Together, these experiences demonstrate how communities are restoring ecosystems while strengthening livelihoods, climate resilience, women's participation, and local stewardship.

What makes this booklet unique is its focus on the intersection of biodiversity conservation, community participation, and global policy frameworks. Rather than viewing biodiversity restoration only as a technical or ecological process, the booklet highlights the important role of local communities, traditional ecological knowledge, women's leadership, and grassroots institutions in achieving sustainable restoration outcomes.

The booklet is intended for policymakers, government agencies, practitioners, civil society organizations, researchers, development professionals, and community institutions working on biodiversity conservation, coastal resilience, climate adaptation, and sustainable development.

By documenting grounded experiences from India's coastal landscapes, the booklet aims to provide practical insights and evidence on how community-led action can help operationalize the KMGBF on the ground while contributing to the broader vision of "living in harmony with nature."

Dr. Susmita Mitra, Team Lead, Knowledge Partner, SGP-India (OP7), CSD
Mr. Manish Kumar Pandey, National Coordinator, SGP OP 7, TERI
Ms. Asha L Giriyan, Regional Coordinator, Indian Coastal Region (ICR), TERI
Ms. Aradhana Goyal Programme Associate, SGP OP7, TERI



Executive Summary

Biodiversity loss, ecosystem degradation, climate change, and pollution are increasingly threatening ecological security and livelihoods across coastal India. Coastal and marine ecosystems such as coral reefs, wetlands, sand dunes, seagrass beds, forests, and traditional agricultural systems are under growing pressure from habitat degradation, unsustainable resource use, and climate-related risks. At the same time, millions of people—particularly fishers, farmers, women, and local communities—depend directly on these ecosystems for food security, livelihoods, and resilience.

This booklet documents eight community-led biodiversity restoration initiatives supported under the Global Environment Facility Small Grants Programme (GEF-SGP) India Operational Phase-7 (OP7). The case studies from Tamil Nadu and Maharashtra demonstrate how local communities are restoring ecosystems, reducing pollution, conserving biodiversity, strengthening sustainable livelihoods, and contributing to the implementation of the Kunming–Montreal Global Biodiversity Framework (KMGBF).

The initiatives cover diverse restoration pathways including artificial reef restoration, ghost gear management, sand dune restoration, seaweed cultivation, sacred grove conservation, agro-biodiversity restoration, watershed management, and indigenous crop conservation. Together, these experiences demonstrate that biodiversity restoration becomes more sustainable and scalable when communities become active participants and custodians of ecosystems.

The booklet highlights that biodiversity restoration is not only an ecological process, but also a socio-economic and institutional process that strengthens livelihoods, resilience, women's participation, traditional knowledge systems, and local governance.

FROM LOCAL ACTION TO GLOBAL IMPACT

Community-led Biodiversity Restoration for a Resilient Future

GLOBAL IMPACT
Strengthens global biodiversity, climate resilience and sustainable development.

5 CONTRIBUTION TO KMGBF GOALS AND TARGETS
Local actions collectively contribute to the Implementation of the Kunming–Montreal Global Biodiversity Framework (KMGBF) and the 2050 Vision *"Living in harmony with nature"*.

4 CLIMATE AND COMMUNITY RESILIENCE
Healthy ecosystems reduce disaster risks, adapt to climate change and build stronger, more resilient coastal communities.

RESILIENT FUTURES
Ecosystem health and community capacity create long-term resilience to climate and environmental threats.

SUSTAINABLE LIVELIHOODS
Healthy ecosystems support incomes, food security and inclusive local economies.

3 LIVELIHOOD SECURITY AND INCLUSION
Restoration activities enhance fisheries, agriculture, eco-enterprises and food security, creating inclusive and sustainable livelihoods.

2 ECOSYSTEM RESTORATION
Restoration of forests, wetlands, mangroves, reefs, dunes, watersheds and biodiversity improves ecosystem functions and biodiversity.

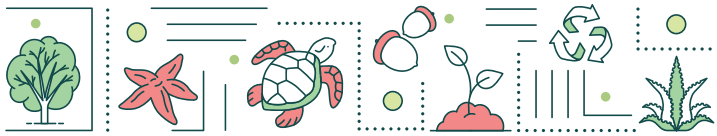
HEALTHY ECOSYSTEMS
Restored ecosystems provide clean water, healthy soils, biodiversity and ecosystem services that sustain life.

1 COMMUNITY
Local people come together, value nature, share traditional knowledge, plan, act and steward their natural resources.

LOCAL ACTION
Community leadership and collective action are the foundation of every successful restoration initiative.

When communities lead, ecosystems thrive, livelihoods improve, resilience grows, and global biodiversity goals are achieved.

Act locally. Restore nature. Create global impact.



Key Policy Messages and Contribution to KMGBF Targets

Key Policy Messages

Community ownership improves restoration sustainability

Projects achieved stronger and longer-lasting outcomes when communities actively participated in planning, implementation, monitoring, and stewardship.

Women-led restoration strengthens resilience

Women's participation improved livelihood diversification, collective action, ecological stewardship, and community resilience across several initiatives.

Restoration and livelihoods must be integrated

Linking biodiversity restoration with fisheries, agriculture, food security, and income generation strengthened community engagement and long-term sustainability.

Traditional ecological knowledge improves restoration outcomes

Combining scientific approaches with Indigenous and local ecological knowledge helped develop context-specific and culturally grounded restoration practices.

Small grants can generate scalable impacts

Relatively small-scale community grants created meaningful ecological, livelihood, and institutional outcomes with strong replication potential.

Partnerships and institutional convergence are critical

Collaboration among communities, NGOs, government agencies, research institutions, and local bodies strengthened implementation and sustainability.

Contribution to KMGBF Targets

KMGBF Target	Examples from Case Studies
Target 2: Ecosystem Restoration	Artificial reefs, sand dunes, sacred groves, watershed restoration
Target 7: Pollution Reduction	Ghost gear management
Target 8: Climate Resilience	Sand dune and watershed restoration
Target 10: Sustainable Use	Seaweed cultivation, fisheries, agro-biodiversity
Target 13: Genetic Diversity	Indigenous crops and seed conservation
Target 22: Community Participation	Community-led restoration initiatives
Target 23: Gender Equality	Women-led seaweed cultivation and SHGs

1. Introduction

1.1 The Global Context: Biodiversity Crisis

Biodiversity—the variety of life on Earth including plants, animals, microorganisms, and ecosystems—is essential for human well-being and sustainable development. Healthy ecosystems provide food, clean water, medicine, fertile soil, climate regulation, and livelihood opportunities. Coastal ecosystems such as coral reefs, mangroves, seagrass meadows, wetlands, and sand dunes also protect shorelines from erosion, cyclones, and floods while supporting fisheries and local economies.

However, biodiversity across the world is declining rapidly due to habitat destruction, pollution, climate change, overexploitation of natural resources, and unsustainable development practices (IPBES, 2019). Coastal ecosystems are among the most vulnerable. Coral reefs are bleaching, marine habitats are shrinking, and pollution from plastics and abandoned fishing gear is damaging marine biodiversity.

The impacts of biodiversity loss are not limited to the environment alone. They directly affect food security, livelihoods, water availability, climate resilience, and disaster vulnerability. Coastal communities, especially small-scale fishers, women, Indigenous peoples, and marginalized groups, are often the worst affected because their lives and livelihoods are closely linked with natural ecosystems.

There is now growing recognition that biodiversity conservation cannot succeed through government action alone. Communities possess valuable traditional ecological knowledge and stewardship practices that can contribute significantly to ecosystem restoration and sustainable management. Across the world, community-led initiatives are restoring degraded ecosystems, reducing pollution, reviving traditional conservation systems, and promoting sustainable livelihoods (IPBES, 2019; CBD, 2022).

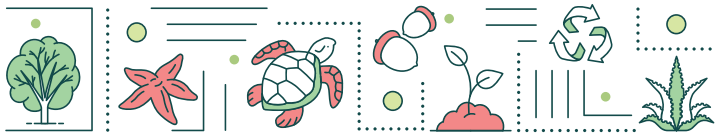
1.2 International Day for Biological Diversity 2026

The International Day for Biological Diversity (IDB), observed annually on 22 May, was established by the United Nations to raise awareness about biodiversity conservation and encourage collective action.

The theme for the International Day for Biological Diversity 2026 is **"Acting Locally for Global Impact."** The theme highlights the importance of local action in achieving global biodiversity goals. It recognizes that biodiversity conservation becomes most effective when communities actively participate in protecting and restoring ecosystems.

The 2026 campaign also promotes a "whole-of-society" approach involving Indigenous peoples, local communities, women, youth, civil society organizations, local governments, and the private sector. It emphasizes that biodiversity conservation cannot succeed through top-down policies alone and that local stewardship and community participation are essential for long-term ecological sustainability.

For India, the 2026 theme is particularly relevant because biodiversity and community livelihoods are deeply interconnected, especially in coastal regions where millions of people depend directly on marine and coastal ecosystems for food, income, and resilience. India's fisheries sector supports more than 30 million livelihoods, while ecosystems such as mangroves, coral reefs, seagrass beds, and wetlands play a critical role in fisheries, shoreline protection, and climate resilience (Government of India, 2024). However, these



ecosystems are increasingly threatened by climate change, pollution, habitat degradation, and unsustainable resource use. In response, communities across India's coastal regions are restoring degraded ecosystems, reviving traditional ecological practices, reducing pollution, and strengthening local institutions for sustainable natural resource management. These locally driven efforts are becoming increasingly important for achieving both biodiversity conservation and resilient coastal development.

1.3 The Kunming–Montreal Global Biodiversity Framework (KMGBF)

The Kunming–Montreal Global Biodiversity Framework (KMGBF), adopted under the Convention on Biological Diversity (CBD) in 2022, provides a global roadmap for halting and reversing biodiversity loss and achieving the 2050 vision of "living in harmony with nature" (CBD, 2022).

The Framework includes four broad goals and 23 action-oriented targets to be achieved by 2030 (see ANNEXURE). Several of these targets are particularly relevant to community-led biodiversity restoration:

- **Target 2** focuses on restoring degraded terrestrial, inland water, coastal, and marine ecosystems;
- **Target 7** aims to reduce pollution affecting biodiversity;
- **Target 10** promotes sustainable management of fisheries, agriculture, aquaculture, and forestry;
- **Targets 21, 22, and 23** emphasize knowledge sharing, inclusive participation, and gender equality.

A major strength of the KMGBF is its recognition that biodiversity conservation must involve communities, local institutions, women, and Indigenous peoples. The Framework highlights ecosystem restoration, sustainable livelihoods, participatory governance, and traditional ecological knowledge as important pathways for biodiversity conservation.

The International Day for Biological Diversity 2026 theme, "Acting Locally for Global Impact," directly reflects the philosophy of the KMGBF—that global biodiversity goals can only be achieved through inclusive and locally driven action.

1.4 What is Community-led Biodiversity Restoration?

Community-led biodiversity restoration refers to processes in which local communities actively participate in conserving, restoring, and sustainably managing ecosystems and biological resources (CBD, 2022).

The approach recognizes that ecosystems and communities are closely interconnected. Coastal ecosystems such as coral reefs, mangroves, seagrass meadows, wetlands, and sand dunes support livelihoods, food systems, cultural traditions, and climate resilience for millions of people. When these ecosystems degrade, communities face ecological, social, and economic challenges. Conversely, when communities become active participants in restoration, ecological recovery becomes more sustainable and inclusive.

Community-led restoration goes beyond simply restoring habitats. It also involves strengthening local institutions, reviving traditional ecological knowledge, improving sustainable livelihoods, and rebuilding relationships between people and nature.

In coastal regions, community-led biodiversity restoration can take many forms depending on local ecological conditions and livelihood needs. These efforts may involve restoring marine and coastal habitats, reducing pollution and ecosystem degradation, promoting sustainable fisheries and nature-based livelihoods, conserving

traditional ecological landscapes, and protecting locally important plant and species diversity. Such approaches often combine ecosystem restoration with community participation, traditional ecological knowledge, and sustainable resource management to strengthen both biodiversity conservation and local resilience.

Women and Indigenous communities often play important roles in these processes through local knowledge, stewardship practices, and community leadership.

1.5 GEF-SGP India OP7: A Platform for Local Action

The Global Environment Facility Small Grants Programme (GEF-SGP) empowers communities and civil society organizations to protect the environment while improving lives. Established in 1992 during the Rio Earth Summit, the programme reflects the vision of sustainable development through its guiding motto: "Think Globally, Act Locally."

GEF-SGP supports community-driven initiatives that address global environmental challenges such as biodiversity loss, climate change, land degradation, and pollution while simultaneously strengthening livelihoods and local resilience. The programme serves as an important support system for locally led solutions that combine environmental sustainability with social and economic well-being.

In India, the GEF-SGP has been operational since 2000 and has supported a wide range of initiatives across diverse ecological regions and communities. The programme promotes participatory approaches that place local communities, civil society organizations, women's groups, Indigenous peoples, and grassroots institutions at the centre of environmental action.

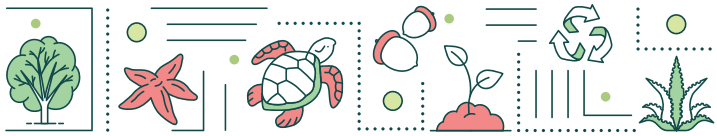
The SGP India Operational Phase-7 (OP-7) is being implemented with the support of the Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India, in partnership with the United Nations Development Programme (UNDP). The programme is coordinated by The Energy and Resources Institute (TERI), which serves as the National Host Institution (NHI).

A major focus of OP-7 has been biodiversity conservation, ecosystem restoration, climate resilience, and sustainable livelihoods through community-led approaches. In coastal India, the programme has supported initiatives related to marine and coastal ecosystem restoration, pollution reduction, sustainable fisheries, agro-biodiversity conservation, and community-based natural resource management. Across these initiatives, local communities, women, youth groups, fishers, farmers, and grassroots institutions have emerged as important actors in biodiversity restoration and environmental stewardship.

The initiatives documented in this booklet demonstrate how relatively small-scale community interventions can generate meaningful ecological and social impacts while contributing directly to global biodiversity goals under the KMGBF.

1.6 Linking Local Actions to KMGBF Targets

The initiatives documented in this booklet demonstrate how community-led biodiversity restoration contributes directly to several targets of the KMGBF, particularly those related to ecosystem restoration, sustainable use, pollution reduction, gender inclusion, and participatory governance. The pathways through which these projects contribute to KMGBF targets are discussed further in Chapter 4.



2. Methodology: Capturing Change through Case Study Approach

2.1 Why Case Study Method?

Community-led biodiversity restoration is closely linked with local ecological, social, economic, and cultural conditions. Understanding such initiatives therefore requires approaches that can capture both measurable outcomes and community experiences. In this booklet, the case study method has been used to document and analyse biodiversity restoration initiatives supported under the GEF-SGP-India OP7.

The case study method is particularly useful for understanding real-life interventions within complex socio-ecological systems. Coastal ecosystems are influenced by multiple interconnected factors such as biodiversity degradation, climate change, livelihood pressures, pollution, governance systems, and traditional ecological practices. Quantitative indicators alone often cannot capture these interconnected dimensions. Case studies help explain not only what changed, but also how and why change occurred.

Another advantage of the case study approach is its ability to generate context-specific learning. Biodiversity restoration initiatives vary depending on ecosystem type, geography, community practices, and local challenges. For example, restoring sand dunes requires different approaches than managing ghost gear pollution or conserving agro-biodiversity. Case studies help document these local realities while also identifying broader lessons and pathways for replication.

The method also allows integration of qualitative and quantitative evidence. Quantitative data such as restored area, households reached, biodiversity improvements, or livelihood gains provide measurable evidence of outcomes. At the same time, qualitative insights related to community participation, local leadership, women's involvement, institutional strengthening, and traditional knowledge help explain the processes behind restoration efforts.

Importantly, the case study approach adopted in this booklet goes beyond documenting project activities. It seeks to understand how community participation, ecological restoration, local knowledge, and institutional processes interact to create environmental and social change. In this way, the booklet presents community-led biodiversity restoration not as isolated projects, but as broader socio-ecological processes that offer lessons for policy and practice.

2.2 Approach Used in This Booklet

This booklet adopts a qualitative, evidence-based, and narrative-oriented approach to document community-led biodiversity restoration initiatives implemented under GEF-SGP India OP7. The approach combines ecological, social, and institutional perspectives to understand how local communities are contributing to biodiversity conservation while strengthening resilience and sustainable livelihoods.

The booklet includes eight community-led initiatives supported under GEF-SGP India OP7 that focus on biodiversity conservation and restoration across coastal and coastal-linked ecosystems. Together, these

initiatives represent diverse approaches to ecosystem restoration, sustainable livelihoods, pollution reduction, community participation, and traditional ecological stewardship. Although the projects differ in ecological focus and geographical context, they collectively demonstrate how local communities are contributing to biodiversity conservation and resilience building through locally driven action. The case studies include:

1. Artificial reef restoration;
2. Ghost gear management;
3. Sand dune restoration;
4. Sustainable seaweed cultivation;
5. Sacred grove conservation;
6. Agro-biodiversity restoration;
7. Watershed and biodiversity conservation;
8. Conservation of indigenous crops and food systems.

Although the initiatives differ in ecological focus, they share several common features. First, all projects use participatory and community-centred approaches. Second, they combine biodiversity conservation with livelihood improvement and resilience building. Third, they demonstrate how local action can contribute to broader biodiversity goals under the KMGBF.

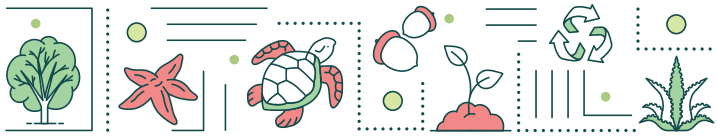
The booklet focuses particularly on coastal and coastal-linked ecosystems because these ecosystems are among the most productive yet vulnerable in the world. India's coastline supports diverse ecosystems such as mangroves, coral reefs, estuaries, seagrass beds, wetlands, and sand dunes that provide important ecological services and livelihood support to millions of people. However, these ecosystems face increasing pressures from pollution, climate change, habitat degradation, overexploitation, and unsustainable development activities. At the same time, coastal communities possess rich ecological knowledge and long-standing stewardship traditions that are important for biodiversity conservation, restoration, and sustainable resource management (Government of India, 2009; NCSCM, 2024).

2.3 Data Sources

The booklet is based on multiple sources of qualitative and quantitative information collected from project documents, field evidence, stakeholder interactions, and programme records. Using different sources helped ensure that the case studies are evidence-based, grounded in local realities, and reflective of both ecological and social outcomes.

The primary source of information consisted of project reports and case study documents prepared under GEF-SGP India OP7. These documents provided information on project objectives, restoration activities, implementation processes, ecological outcomes, livelihood impacts, beneficiary groups, and lessons learned.

Field reports and monitoring records were also used to understand restoration processes, community participation, institutional arrangements, and local ecological conditions. In several cases, field observations helped capture local experiences and environmental changes that may not be fully reflected in formal reports.



Stakeholder interactions formed another important source of information. Inputs from community members, women's groups, fishers, farmers, local leaders, implementing NGOs, and project teams helped capture local perspectives, traditional ecological knowledge, and community experiences related to biodiversity restoration.

Special attention was given to understanding Indigenous and traditional ecological knowledge embedded within restoration practices. Local knowledge related to fisheries, native species, ecosystem management, seasonal cycles, and sustainable harvesting formed an important component of several initiatives.

Secondary literature related to biodiversity restoration, community-based conservation, coastal resilience, and the KMGBF was also reviewed to place the case studies within a broader policy and environmental context.

The booklet does not aim to provide statistically representative findings. Instead, it seeks to generate grounded insights and practical lessons on how community-led biodiversity restoration is being implemented across diverse coastal contexts in India.

2.4 Structure of Each Case Story

To maintain consistency and readability, all case studies follow a common narrative structure. The structure is designed to present restoration initiatives in a clear, engaging, and evidence-based manner while highlighting both ecological and social dimensions of change.

Each case study begins by introducing the people and communities involved in the restoration process. This is followed by a discussion of the ecological and livelihood challenges faced by the community before the intervention.

The next section explains the restoration initiative itself, including the activities undertaken, community participation, and local restoration strategies. This is followed by an analysis of the ecological, social, and livelihood changes resulting from the intervention.

Each case study also highlights the relevance of the initiative to the KMGBF and concludes with key lessons emerging from the experience.

Each case broadly follows five elements:

1. **Who** – the people and communities involved;
2. **Challenge** – the ecological and social problem addressed;
3. **Intervention** – the restoration activities undertaken;
4. **Change** – the ecological and livelihood outcomes achieved;
5. **Future** – lessons, sustainability, and replication potential.

This structure helps make the case studies accessible to policymakers, practitioners, NGOs, researchers, and community stakeholders.

2.5 Analytical Lens

Although the case studies focus on different ecosystems and restoration approaches, all of them are analysed using a common socio-ecological lens to identify broader lessons and pathways related to community-led biodiversity restoration.

The analysis focuses on five key dimensions:

1. **Biodiversity and Ecological Outcomes** – including habitat restoration, biodiversity enhancement, pollution reduction, ecosystem recovery, and sustainable resource management;
2. **Livelihood and Resilience Impacts** – including improvements in fisheries, agriculture, incomes, food security, and climate resilience;
3. **Gender and Community Participation** – examining the role of women, youth groups, local institutions, and marginalized communities in restoration processes;
4. **Traditional Ecological Knowledge** – understanding how local and Indigenous knowledge systems contribute to restoration and sustainable ecosystem management;
5. **Scalability and Sustainability** – assessing how community ownership, institutional support, partnerships, and livelihood linkages can strengthen long-term sustainability and wider replication.

Together, these dimensions help position community-led biodiversity restoration as an integrated socio-ecological process that strengthens ecosystems, livelihoods, institutions, and community resilience.

3. Community-Led Success Stories

The following case studies highlight how local communities across coastal India are restoring biodiversity, strengthening livelihoods, and building resilience under the Global Environment Facility Small Grants Programme (GEF-SGP) India Operational Phase 7 (OP7). Together, these initiatives show how local action can generate meaningful environmental and social change while contributing to global biodiversity goals.

The stories cover marine, coastal, and agro-ecological landscapes and reflect diverse pathways of community-led biodiversity restoration. Although each initiative addresses different ecological and livelihood challenges, all of them demonstrate the importance of community participation, local knowledge, women's leadership, and sustainable resource management.

S. No.	Project Theme	Implementing Organization	State
1	Artificial reefs and marine habitat restoration	Participatory Learning Action Network and Training Trust (PLANT)	Tamil Nadu
2	Marine pollution reduction and ghost gear management	M.S. Swaminathan Research Foundation (MSSRF)	Tamil Nadu
3	Sand dune and coastal ecosystem restoration	Arulagam	Tamil Nadu
4	Women-led seaweed cultivation and blue livelihoods	Amrita Vishwa Vidyapeetham	Tamil Nadu
5	Sacred grove and cultural landscape conservation	Society for People Education and Economic Development Trust (SPEED Trust)	Tamil Nadu
6	Agro-biodiversity and sustainable farming systems	Covenant Centre for Development (CCD)	Tamil Nadu
7	Watershed restoration and ecosystem resilience	Rural Communes	Maharashtra
8	Indigenous crops and traditional food systems	BAIF Development Research Foundation	Maharashtra

3.1 Reef for Fish Forever: Community-led Artificial Reef Restoration in Ramanathapuram, Tamil Nadu

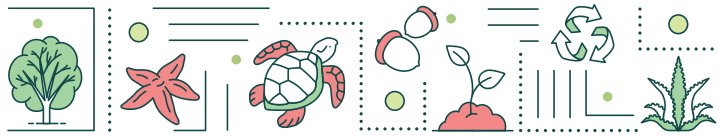
Restoring Fish Habitats and Coastal Livelihoods

Fishing communities along the Gulf of Mannar coast have depended on the sea for generations. However, declining fish catches, damaged marine habitats, destructive fishing practices, and climate pressures gradually began affecting both marine biodiversity and local livelihoods. Fishers had to travel farther into deeper waters while earning less, making fishing increasingly uncertain for many families.

To address these challenges, the Participatory Learning Action Network and Training Trust (PLANT) implemented a community-led artificial reef restoration initiative under GEF-SGP India OP7.

"Earlier, we had to go much farther into the sea to catch fish. Now fish have started returning closer to our villages,"

- Local fisherman



Intervention

The project combined scientific guidance with local ecological knowledge to restore marine habitats and improve fish productivity. Fishers, women, and youth participated in identifying reef locations, deploying artificial reefs, and monitoring marine biodiversity.

A total of 300 artificial reefs were deployed across key fishing zones in the Gulf of Mannar region to create breeding and shelter habitats for marine species.

Biodiversity Outcomes

» Lobster colonization in artificial reefs
» Improved marine habitats and breeding grounds for fish species;
» Enhanced marine biodiversity and ecosystem productivity;
» Reduced pressure on degraded coral reef ecosystems;
» Strengthened marine ecosystem resilience.

Livelihood and Social Outcomes

» Fish catches reportedly increased to 3,000–5,000 kg monthly;
» Around 5,000 fishing families benefited directly or indirectly;
» Women-led fish marketing groups strengthened local incomes;
» Youth participated in ecological awareness and monitoring activities.

Impact Snapshot

Indicator	Achievement
Area of marine habitats under improved practices (Ha)	316
No. of direct project beneficiaries	600
Artificial reefs deployed	300 reef units
Key biodiversity outcome	Improved fish breeding and marine habitats

KMGBF Link

» Target 2: Ecosystem Restoration;
» Target 10: Sustainable Fisheries and Sustainable Use;
» Target 22: Community Participation.

Lessons Learned

» Marine restoration becomes more sustainable when fishing communities actively participate in planning and monitoring;
» Combining scientific approaches with local ecological knowledge improves restoration outcomes;
» Biodiversity restoration can directly support fisheries recovery and livelihood resilience.

Building community awareness for collective action towards ecosystem conservation

Deploying artificial reefs to revive marine biodiversity and sustain coastal livelihoods

Healthy marine ecosystems leading to improved fish catch and coastal livelihoods

Local action gaining global recognition for advancing biodiversity and community resilience

3.2 Tackling Ghost Gears: Community-led Marine Pollution Reduction in Ramanathapuram, Tamil Nadu

Turning Marine Waste into Community Action

Abandoned fishing nets, commonly known as "ghost gears," had become a major threat to marine biodiversity along the Ramanathapuram coast. These discarded nets continued trapping fish, turtles, and other marine organisms long after being abandoned, damaging fragile marine ecosystems and affecting fisheries productivity.

Local fishing communities had observed the growing problem for years, but awareness regarding its long-term ecological impacts remained limited.

To address this issue, the M.S. Swaminathan Research Foundation launched a community-led ghost gear management initiative that combined marine conservation, awareness generation, and livelihood opportunities.

"Earlier, we saw abandoned nets simply as waste.
Now we understand how they affect marine life
and our future,"

- A fisherwoman involved in recycling activities

Intervention

The project combined community awareness, participatory mapping of ghost gear hotspots, retrieval operations, and recycling-based livelihood activities.

Fishers contributed local knowledge to identify areas where ghost nets accumulated. Clean-up and retrieval operations were conducted along shorelines and coastal waters with support from communities and local authorities.

Biodiversity Outcomes

» Coastal and marine habitats cleaned and restored;
» Reduced risks of entanglement for marine species;
» Improved ecological conditions in coastal ecosystems;
» Reduced marine pollution impacts on biodiversity.

Livelihood and Social Outcomes

» Around 1,158 households benefited through awareness and recycling activities;
» Women's groups participated in recycling and upcycling enterprises;
» Increased awareness regarding sustainable fishing and marine conservation;
» Strengthened community stewardship of coastal ecosystems.

Impact Snapshot

Indicator	Achievement
Area of marine habitats under improved practices (Ha)	429.7
No. of Direct project beneficiaries	850
Coastal terrain cleaned	141.8 hectares
Seawater restored	0.54 km^2

KMGBF Link

» Target 7: Pollution Reduction;

» Target 10: Sustainable Fisheries;

» Target 22: Community Participation.

Lessons Learned

» Marine pollution management requires strong community awareness and participation;

» Behaviour change is critical for reducing long-term ecological damage;

» Linking conservation with local livelihoods strengthens community engagement.

Communities joining hands to reduce shoreline pollution and restore coastal ecosystems

Communities diving together to protect oceans and restore marine ecosystems

Diving beneath the surface to protect marine life and ocean health

Empowering women entrepreneurs to weave livelihoods, equality, and resilience together

3.3 Restoring Coastal Resilience: Sand Dune Restoration in Rameswaram Island

Bringing Back Nature's Coastal Barriers

The sand dunes of Rameswaram Island once protected coastal communities from erosion, storms, and saline intrusion. Over time, vegetation loss, climate pressures, and human disturbances weakened these fragile ecosystems, making nearby communities more vulnerable.

Native coastal vegetation that once stabilized the dunes gradually disappeared, reducing both ecological stability and natural disaster protection.

To restore these landscapes, Arulagam implemented a community-led sand dune restoration initiative that combined ecological restoration with climate resilience.

"This land was becoming barren. Now we are seeing native plants return and the dunes becoming stronger again"

- A local participant

Intervention

The project used scientific assessments and community participation to identify degraded dune systems and restoration priorities. A community nursery known as the “Neythal” nursery raised more than 70,000 native coastal plants for restoration work.

Community members, women, and youth participated in planting, monitoring, and awareness activities.

Biodiversity Outcomes

» Around 53.1 hectares of sand dune ecosystems restored;
» Native coastal vegetation re-established;
» Improved coastal ecosystem stability and biodiversity;
» Enhanced protection against erosion and saline intrusion.

Livelihood and Social Outcomes

» More than 4,000 households indirectly benefited;
» Women and youth gained livelihood opportunities through nursery and restoration activities;
» Increased awareness regarding coastal ecosystem conservation.

Impact Snapshot

Indicator	Achievement
Area of land restored (Ha)	53.1
Beneficiaries (total)	4,026 households
Area under improved land management	20 hectares
Native saplings raised	70,000+

KMGBF Link

» Target 2: Ecosystem Restoration;
» Target 8: Climate Change and Biodiversity;
» Target 22: Community Participation.

Lessons Learned

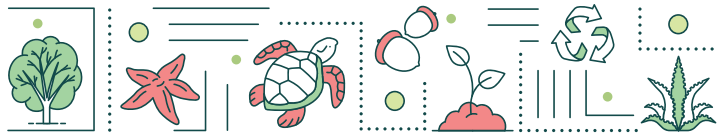
» Restoring native vegetation strengthens both biodiversity and disaster resilience;
» Community stewardship is important for long-term ecosystem protection;
» Nature-based solutions can support climate adaptation in vulnerable coastal regions.

Restoring sand dunes to strengthen coastal resilience and biodiversity

Conserving biodiversity to keep fragile ecosystems alive and thriving

Women nurturing nurseries and plantations for a greener, more resilient future

Every species matters in sustaining the balance of biodiversity



3.4 Blue is the New Pink: Women-led Seaweed Cultivation and Marine Restoration

Women Leading Marine Restoration

In coastal Ramanathapuram, women have long contributed to fisheries-based livelihoods, although their role often remained invisible. At the same time, marine ecosystems including seagrass meadows were facing increasing stress from biodiversity degradation and unsustainable practices.

Amrita Vishwa Vidyapeetham launched a women-led seaweed cultivation and marine restoration initiative that combined livelihood generation with ecosystem conservation.

"Seaweed farming has improved our income and confidence. We are helping both our families and the environment,"

- a woman participant

Intervention

Women received training on seaweed cultivation, marine ecosystem conservation, entrepreneurship, and sustainable marine practices. The initiative also promoted seagrass restoration and integrated marine farming approaches.

Biodiversity Outcomes

- Marine ecosystems and seagrass habitats restored and conserved;
- Sustainable marine cultivation systems promoted;
- Improved marine ecosystem functioning and biodiversity.

Livelihood and Social Outcomes

- More than 2,000 people benefited through training and awareness;
- Women-led enterprises generated additional income;
- Increased participation of women in local environmental decision-making;
- Improved livelihood diversification and resilience.

Impact Snapshot

Indicator	Achievement
Area of marine ecosystems restored and conserved (Ha)	107
No. of Direct project beneficiaries	102 households
Indirect beneficiaries	500 households
Community members trained/engaged	2,000+

KMGBF Link

» Target 2: Ecosystem Restoration;
» Target 10: Sustainable Use;
» Target 23: Gender Equality.

Lessons Learned

» Women-centred restoration approaches strengthen both conservation and livelihoods;
» Sustainable marine enterprises can support long-term biodiversity protection;
» Women's leadership improves community participation and stewardship.

Woman learning how to swim for safe seaweed cultivation

Women during seaweed cultivation training

Marine biodiversity in the project area

Celebrating community-led seagrass restoration on World Biodiversity Day

3.5 Restoring Sacred Landscapes: Coastal Sacred Grove Conservation in Tamil Nadu

Protecting Biodiversity Through Cultural Traditions

Sacred groves along Tamil Nadu's coast preserve important biodiversity and cultural heritage. However, many of these ecosystems were increasingly threatened by land-use change, ecological degradation, and declining traditional stewardship practices.

The Society for People Education and Economic Development Trust (SPEED Trust) implemented a community-led sacred grove restoration initiative to revive these ecologically important landscapes.

"Our sacred groves are not just places of worship—they are living spaces of biodiversity, water, and community heritage. Restoring them means protecting both nature and culture for future generations"

— Community member

Intervention

The project focused on restoring degraded sacred groves, planting native species, conserving water bodies, and strengthening local stewardship systems.

Women, youth groups, local institutions, and Panchayati Raj Institutions participated in restoration and conservation activities.

Biodiversity Outcomes

» More than 22,000 indigenous trees planted and conserved;

» Green cover and water bodies restored;

» Biodiversity in Tropical Dry Evergreen Forest ecosystems strengthened.

Livelihood and Social Outcomes

» Employment generated through restoration activities;

» Women and marginalized communities actively participated;

» Cultural stewardship and environmental awareness strengthened.

Impact Snapshot

Indicator	Achievement
Area of land restored through water body restoration (Ha)	20.54
No. of Direct project beneficiaries	1303
Indigenous trees planted	22,340
Water bodies restored	10

KMGBF Link

» Target 2: Ecosystem Restoration;

» Target 3: Conservation;

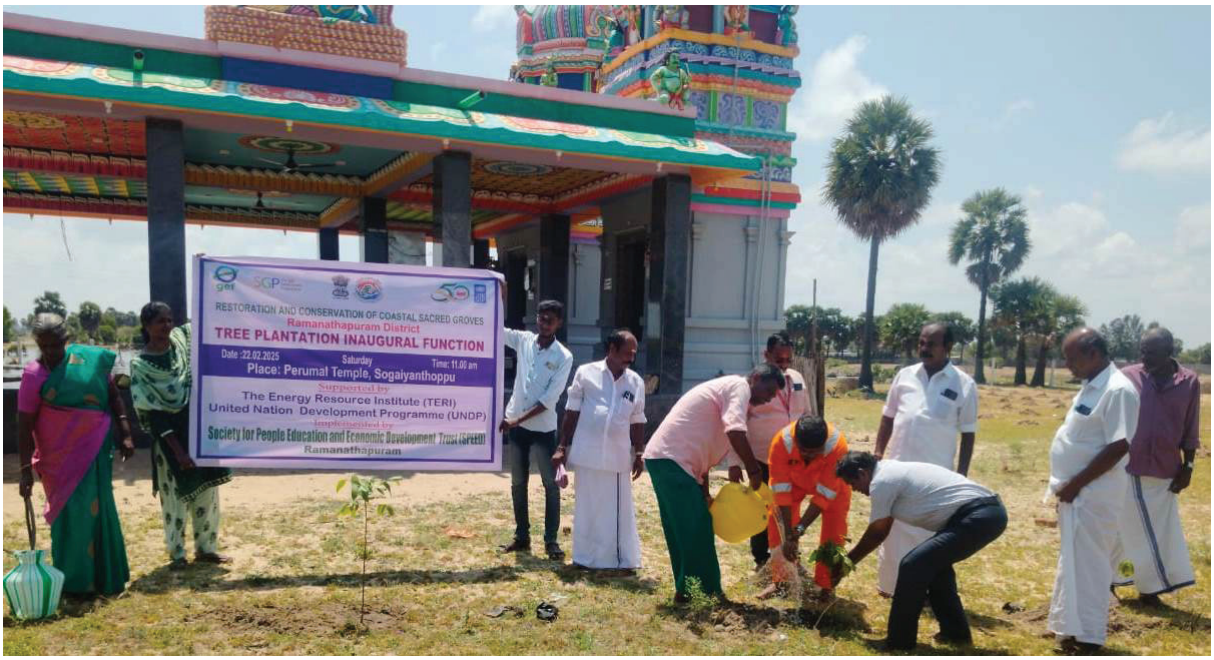
» Target 22: Community Participation.

Lessons Learned

» Traditional cultural systems can support biodiversity conservation;

» Community institutions are important for long-term ecosystem stewardship;

» Cultural identity can strengthen local conservation efforts.



Reviving sacred groves to protect culture, biodiversity, and community heritage

Nurturing native species today for a biodiverse tomorrow

Women leading the way in restoring biodiversity and nurturing resilient landscapes

Restoring coastal biodiversity to protect ecosystems, livelihoods, and shoreline resilience

3.6 Agro-biodiversity Restoration and Climate-resilient Farming in Tamil Nadu

Reviving Soil, Crops, and Rural Resilience

In rainfed farming regions of Tamil Nadu, land degradation, declining soil fertility, and climate variability were increasingly affecting agricultural biodiversity and rural livelihoods.

To address these challenges, the Covenant Centre for Development (CCD) implemented a community-led agro-biodiversity restoration initiative focused on sustainable farming and ecosystem restoration.

"We realized that protecting soil, water, and traditional farming practices is not only good for agriculture, but also important for biodiversity and the future of our villages."

— Farmer associated with the agro-biodiversity restoration initiative

Intervention

The project promoted soil and water conservation, agroforestry, climate-resilient farming practices, and sustainable agriculture approaches.

Farmer groups participated in training, demonstration activities, and community learning processes.

Biodiversity Outcomes

» Degraded land restored and vegetation cover improved;
» Agro-biodiversity strengthened through sustainable farming practices;
» Soil health improved through organic methods.

Livelihood and Social Outcomes

» Around 500 farming households benefited;
» Crop productivity reportedly increased;
» Improved climate resilience and reduced migration pressures.

Impact Snapshot

Indicator	Achievement
Area of landscapes under improved practices (Ha)	228
No. of Direct project beneficiaries	500
Degraded land restored	700 acres
Increase in crop yields and income	20–25%

KMGBF Link

» Target 10: Sustainable Agriculture;

» Target 2: Ecosystem Restoration.

Lessons Learned

» Sustainable agriculture can strengthen biodiversity and food security together;

» Community learning supports long-term adoption of ecological farming practices;

» Agro-biodiversity conservation improves climate resilience.

Communities restoring ecosystems, rebuilding resilience from the ground up

Harvesting every drop to restore watersheds and rural resilience

Sustainable agriculture nurturing healthy soils, resilient farms, and secure futures

Agro-biodiversity conserving traditional crops, cultures, and climate resilience

3.7 Watershed Restoration and Biodiversity Conservation in Maharashtra

Restoring Water, Land, and Livelihoods

Water scarcity, land degradation, and biodiversity loss were affecting agriculture and rural livelihoods in vulnerable regions of Maharashtra.

Rural Communes implemented a community-led watershed restoration initiative integrating soil conservation, water management, and biodiversity restoration.

"When water returned to our land, farming improved, trees started growing again, and the village became more resilient. Restoring nature also restored our confidence."

— Community member

Intervention

The project promoted watershed management, soil and water conservation, ecosystem restoration, and livelihood strengthening through participatory approaches.

Village communities participated in planning, implementation, and monitoring activities.

Biodiversity Outcomes

» Large areas of degraded land restored;
» Improved vegetation and ecosystem health;
» Better water conservation and soil stability.

Livelihood and Social Outcomes

» Increased agricultural productivity and incomes;
» Women's groups strengthened local participation;
» Improved livelihood resilience and resource security.

Impact Snapshot

Indicator	Achievement
Area of land restored (Ha)	819.48
Area under improved land-use and management practices (Ha)	82.5
No. of Direct project beneficiaries	2210
Increase in additional income	15–20%

KMGBF Link

» Target 2: Ecosystem Restoration;
» Target 10: Sustainable Land Use;
» Target 23: Gender Equality.

Lessons Learned

» Integrated watershed management supports both biodiversity and livelihoods;
» Community participation strengthens long-term ecosystem management;
» Women's involvement improves local stewardship and resilience.

Communities leading biodiversity restoration and vegetation revival for a greener future

Restoring watersheds, reviving landscapes and livelihoods

When women lead water security, communities move closer to equality and resilience

Sustainable land use restoring ecosystems, water, and rural resilience

3.8 Conserving Indigenous Crops and Wild Foods in Coastal Maharashtra

Protecting Traditional Food and Farming Systems

Traditional crop varieties and wild food systems in Sindhudurg district were gradually disappearing due to changing farming practices and erosion of traditional knowledge.

BAIF Development Research Foundation implemented a community-led initiative to conserve indigenous crops and strengthen local food systems.

"Our traditional seeds and local foods are part of our identity. By conserving them, we are protecting biodiversity, improving nutrition, and securing the future of our farming communities."

— Farmer and community member

Intervention

The project promoted seed conservation, biodiversity-friendly farming, nutrition gardens, and community seed systems.

Farmers and women's groups participated in conserving traditional crop varieties and strengthening sustainable food practices.

Biodiversity Outcomes

» Indigenous crop diversity conserved;

» Sustainable agricultural practices promoted;

» Forest and agricultural biodiversity strengthened.

Livelihood and Social Outcomes

» More than 600 households benefited;

» Women-led seed systems strengthened local livelihoods;

» Reduced farming input costs and improved food security.

Impact Snapshot

Indicator	Achievement
Area of land under improved practices (Ha)	135
Land restored (Ha)	18.4
Beneficiaries (total)	699
Increase in farm incomes	₹52.8 lakh

KMGBF Link

» Target 10: Sustainable Agriculture;

» Target 13: Genetic Diversity;

» Target 22: Community Participation.

Lessons Learned

» Conserving indigenous crops strengthens biodiversity, nutrition, and resilience;

» Community seed systems support long-term sustainability;

» Traditional knowledge remains important for resilient food systems.

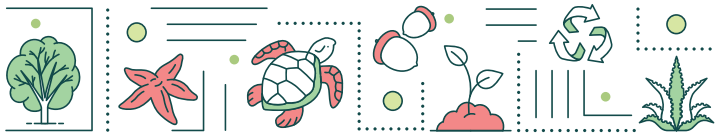
These case studies collectively demonstrate how community-led initiatives across coastal India are contributing to biodiversity restoration, livelihood resilience, and sustainable ecosystem management. The following chapter brings together the key lessons and broader pathways emerging from these experiences.

Biwla Storage Technology: Weaving Indigenous Wisdom into Climate-Resilient Food Security

Saving traditional seeds, sustaining biodiversity and community resilience

Nature's tiny powerhouse — Zanthoxylum dry fruits rich in antioxidants and traditional healing value

Women custodians reviving indigenous crops, restoring biodiversity with pride



4. From Local Action to Global Impact: Pathways Of Community-Led Biodiversity Restoration

The eight case studies presented in this booklet demonstrate that biodiversity restoration is most effective when local communities become active stewards of ecosystems. Across coastal and coastal-linked landscapes, communities restored degraded habitats, strengthened sustainable livelihoods, revived traditional ecological practices, and built local institutions for long-term environmental stewardship.

Although the initiatives focused on different ecosystems and restoration approaches, several common lessons emerged. Together, these experiences show that community-led biodiversity restoration is not only an environmental process, but also a socio-economic and institutional process that strengthens resilience, participation, and sustainable development.

This chapter synthesizes the key pathways, lessons, and policy insights emerging from the case studies.

4.1 Pathways: How Communities are Restoring Biodiversity

The case studies in this booklet show that communities are restoring biodiversity in different ways depending on local ecological conditions, livelihood needs, and traditional practices. Although the restoration approaches differ across locations, several common patterns emerge.

Some initiatives focused on restoring degraded ecosystems directly, while others combined biodiversity conservation with livelihood improvement, climate resilience, or community institution building. Together, these experiences demonstrate that biodiversity restoration is not only about protecting nature, but also about strengthening livelihoods, local knowledge systems, and community resilience.

Restoring Ecosystems and Habitats

Several projects focused on restoring damaged ecosystems and improving ecological health.

For example, artificial reef deployment in Tamil Nadu helped restore marine habitats and improve fish breeding grounds. Sand dune restoration strengthened coastal ecosystems and helped reduce vulnerability to erosion and climate risks. Sacred grove restoration revived degraded patches of Tropical Dry Evergreen Forest ecosystems and improved local biodiversity. Watershed restoration activities improved soil, water, and vegetation systems in vulnerable rural landscapes.

Similarly, ghost gear removal initiatives reduced marine pollution and helped restore coastal and marine habitats affected by abandoned fishing nets.

These initiatives demonstrate that community-led restoration can improve ecosystem functions while also supporting fisheries, water conservation, shoreline protection, and climate resilience.

Linking Biodiversity Restoration with Livelihoods

Many projects combined biodiversity conservation with livelihood improvement. This was important because communities are more likely to participate in restoration activities when conservation efforts also improve their incomes, food security, or resilience.

Seaweed cultivation created alternative livelihood opportunities for coastal women while also supporting marine ecosystem restoration. Agro-biodiversity restoration improved soil health, crop productivity, and climate-resilient farming systems. Indigenous crop conservation strengthened food security and protected traditional seed diversity.

The case studies show that biodiversity conservation and livelihood security are closely interconnected. Sustainable livelihood opportunities can reduce pressure on natural resources and encourage long-term community stewardship of ecosystems.

Strengthening Community Institutions and Participation

Another important lesson emerging from the case studies is the importance of community participation and local institutions.

Many projects created or strengthened village committees, women's groups, farmer collectives, youth groups, and self-help groups to support restoration activities. These institutions helped communities participate in planning, monitoring, decision-making, and long-term management.

Women played particularly important roles across several initiatives. In some projects, women led seaweed enterprises, nursery raising, seed conservation, and restoration activities. Youth groups also supported ecological monitoring, awareness generation, and conservation efforts.

The projects demonstrate that biodiversity restoration becomes more sustainable when communities themselves become active custodians of ecosystems.

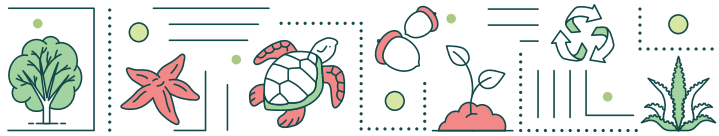
How Communities are Restoring Biodiversity

Restoration Approach	Examples from Case Studies	Key Outcomes
Ecosystem and habitat restoration	Artificial reefs, sand dunes, sacred groves	Habitat recovery and biodiversity enhancement
Pollution reduction and ecosystem recovery	Ghost gear management	Reduced marine pollution and healthier coastal ecosystems
Biodiversity-linked livelihoods	Seaweed cultivation, indigenous crops, agro-biodiversity	Improved incomes, food security, and resilience
Soil and water conservation	Watershed restoration, agroforestry	Improved ecosystem health and climate resilience
Community institutions and participation	SHGs, village committees, farmer groups	Stronger local stewardship and sustainability


SOCIO-ECOLOGICAL RESTORATION MODEL
Building resilient ecosystems, strong livelihoods and empowered communities
1. ECOSYSTEMS
Healthy ecosystems provide resources, regulate climate, protect coasts and support biodiversity.
ECOSYSTEM BENEFITS
• Clean water
• Healthy soils
• Biodiversity conservation
• Climate regulation
• Disaster protection
2. LIVELIHOODS
Restored ecosystems strengthen fisheries, agriculture, resources and create sustainable income opportunities.
LIVELIHOOD OUTCOMES
• Increased income
• Food and nutrition security
• Reduced vulnerability
• Local enterprise development
3. WOMEN AND SOCIAL INCLUSION
Women, youth and marginalized groups lead, participate and benefit equally.
INCLUSION OUTCOMES
• Gender equality
• Youth engagement
• Strengthened social cohesion
• Equitable benefit sharing
4. INSTITUTIONS
Strong local institutions and partnerships ensure participation, transparency and long-term stewardship.
INSTITUTIONAL ENABLERS
• Community groups & SHGs
• Local committees
• Government convergence
• Partnerships & networks
• Monitoring & accountability
5. TRADITIONAL KNOWLEDGE
Indigenous and local knowledge guides sustainable use and restoration practices.
KNOWLEDGE STRENGTHS
• Indigenous wisdom
• Local innovations
• Experiences across generations
• Culturally appropriate solutions
6. RESILIENCE
Ecosystem health, livelihood security and social inclusion build resilient communities able to adapt and thrive.
RESILIENCE OUTCOMES
• Climate resilience
• Disaster preparedness
• Sustainable resource management
• Long-term well-being
COMMUNITY-LED BIODIVERSITY RESTORATION
People and nature restoring together for a sustainable future
COLLECTIVE IMPACT
HEALTHY ECOSYSTEMS
SUSTAINABLE LIVELIHOODS
BIODIVERSITY CONSERVATION
INCLUSIVE COMMUNITIES
RESILIENT FUTURE
Local stewardship today, a thriving planet tomorrow.

Cross-case Synthesis of Community-led Biodiversity Restoration Initiatives

Project	Ecological Outcome	Livelihood Outcome	Gender Role	Traditional Knowledge	Scaling Potential
Artificial reef restoration (PLANT)	Improved marine habitats and fish breeding grounds	Increased fish catch and fisheries income	Women participated in fish marketing	Fishers identified reef deployment zones using local marine knowledge	High potential for replication across coastal fishing regions
Ghost gear management (MSSRF)	Reduced marine pollution and habitat degradation	Recycling and awareness-linked livelihood opportunities	Women involved in recycling and awareness activities	Fishers identified ghost gear accumulation hotspots	Can be integrated into coastal waste management programmes
Sand dune restoration (Arulagam)	Restored dune ecosystems and native vegetation	Nursery-based livelihood opportunities	Women and youth engaged in restoration activities	Local understanding of native coastal vegetation supported restoration	Suitable for climate adaptation and coastal resilience programmes
Seaweed cultivation (Amrita Vishwa Vidyapeetham)	Improved marine ecosystem conservation and seagrass restoration	Women-led seaweed enterprises strengthened incomes	Women played central leadership role	Traditional marine knowledge supported sustainable cultivation	Strong potential under blue economy initiatives
Sacred grove conservation (SPEED Trust)	Restored sacred groves and water bodies	Local employment generated through restoration	Women and marginalized groups actively participated	Cultural and traditional stewardship systems guided restoration	Can support community-based biodiversity governance models
Agro-biodiversity restoration (CCD)	Improved soil health and agro-biodiversity	Increased crop productivity and climate resilience	Community participation in sustainable farming	Traditional farming practices supported ecological restoration	High relevance for climate-resilient agriculture programmes
Watershed restoration (Rural Communes)	Improved vegetation cover, soil stability, and water systems	Enhanced agricultural productivity and resilience	Women's groups strengthened local participation	Local knowledge supported watershed planning	Replicable in drought-prone and degraded landscapes
Indigenous crops and food systems (BAIF)	Conserved indigenous crop diversity and forest biodiversity	Improved food security and reduced farming costs	Women-led seed systems strengthened livelihoods	Indigenous seed conservation and food knowledge revived	Strong potential for nutrition-sensitive agriculture and biodiversity programmes



Across the case studies, biodiversity restoration was most effective when ecological restoration was linked with livelihoods, community participation, women's leadership, and traditional ecological knowledge. The initiatives demonstrate that locally grounded restoration approaches can simultaneously strengthen biodiversity conservation, resilience, and sustainable development.

4.2 What Works in Community-led Biodiversity Restoration

Across the case studies, five major success factors emerged.

Community Ownership

Projects achieved stronger outcomes when communities participated in planning, implementation, monitoring, and maintenance. Local ownership improved accountability, sustainability, and ecological stewardship.

Women's Leadership

Women played transformative roles in seaweed cultivation, sacred grove restoration, seed conservation, and community mobilization. Women's participation strengthened collective action, livelihood diversification, and long-term sustainability.

Several initiatives also demonstrated that biodiversity restoration can create new opportunities for women-led enterprises and leadership.

Blending Science and Traditional Knowledge

Many projects successfully combined scientific approaches with Indigenous and local ecological knowledge.

Fishers contributed knowledge on marine ecosystems and reef locations; farmers preserved traditional crop varieties and soil management practices; communities guided sacred grove restoration using cultural and ecological knowledge.

This integration improved ecological relevance and strengthened community acceptance of restoration interventions.

Livelihood-linked Conservation

The projects clearly demonstrate that conservation efforts become more sustainable when linked with livelihood security.

Communities were more willing to participate in ecosystem restoration when interventions improved fisheries, farming productivity, incomes, water availability, or food security.

Partnerships and Institutional Support

Partnerships among NGOs, government departments, research institutions, local communities, and self-help groups strengthened implementation and scaling potential.

Programmes such as MGNREGA, local watershed schemes, biodiversity boards, and climate initiatives also supported convergence and sustainability.

Key Enablers of Successful Restoration

Enabler	Contribution
Community participation	Strengthened ownership and sustainability
Women's leadership	Improved inclusion and resilience
Traditional knowledge	Enhanced local relevance
Livelihood linkages	Increased community motivation
Institutional partnerships	Supported scaling and convergence

4.3 Contribution to the KMGBF Targets

The case studies strongly align with the Kunming–Montreal Global Biodiversity Framework (KMGBF) and demonstrate how local action contributes to global biodiversity goals.

The projects contributed directly to:

» ecosystem restoration,

» pollution reduction,

» sustainable fisheries and agriculture,

» conservation of genetic diversity,

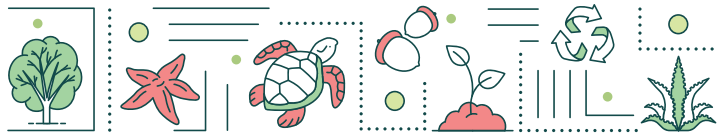
» gender inclusion,

» and participatory governance.

Together, the initiatives reflect the core principle of the International Day for Biological Diversity 2026 theme: "Acting Locally for Global Impact."

Linkages between Case Studies and KMGBF Targets

KMGBF Target	Relevant Case Studies
Target 2: Ecosystem Restoration	Artificial reefs, sand dunes, sacred groves, watershed restoration
Target 7: Pollution Reduction	Ghost gear management
Target 8: Climate Resilience	Sand dunes, watershed restoration
Target 10: Sustainable Use	Seaweed cultivation, agro-biodiversity, fisheries
Target 13: Genetic Diversity	Indigenous crops and seed conservation
Target 22: Community Participation	All case studies
Target 23: Gender Equality	Seaweed cultivation, sacred groves, SHGs



4.4 Challenges and Gaps

Despite important achievements, the case studies also highlight several challenges.

Climate and Environmental Risks

Extreme weather events, coastal erosion, salinity intrusion, changing rainfall patterns, and marine ecosystem degradation continue to threaten restoration gains.

Financial and Market Constraints

Several community enterprises face challenges related to market access, long-term financing, and value-chain development.

Institutional and Governance Challenges

Sustaining local institutions beyond project timelines remains difficult without continued support, convergence, and policy integration.

Capacity and Technical Gaps

Communities often require continuous technical support, ecological monitoring, and capacity-building for long-term sustainability.

4.5 Policy Recommendations

The case studies offer important lessons for policymakers, practitioners, and development agencies.

For Government

» Promote community-led ecosystem restoration within coastal and biodiversity programmes;
» Strengthen convergence between biodiversity, climate, livelihood, and rural development schemes;
» Support decentralized biodiversity governance and local institutions.

For NGOs and Civil Society

» Strengthen long-term community capacity-building and ecological awareness;
» Promote women-led and youth-led biodiversity initiatives;
» Facilitate knowledge-sharing and peer learning across regions.

For Research Institutions

» Support participatory monitoring, restoration science, and documentation of Indigenous knowledge;
» Develop locally adapted restoration models and biodiversity indicators.

For Communities

» Strengthen collective institutions for ecosystem stewardship;

» Promote sustainable resource use and traditional ecological practices.

For the Private Sector

» Support biodiversity restoration through CSR, green enterprises, and sustainable value chains;

» Invest in community-based blue and green economy initiatives.

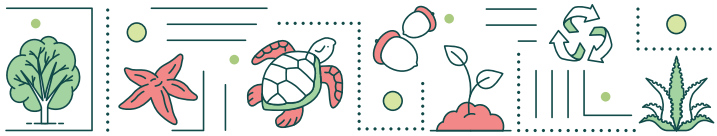
4.6 Conclusion: Local Communities as Drivers of Biodiversity Restoration

The experiences documented in this booklet demonstrate that local communities are not merely beneficiaries of biodiversity conservation programmes—they are central actors in ecological restoration and sustainable development.

From artificial reefs and ghost gear management to sacred groves, watershed restoration, and indigenous crop conservation, the initiatives show how local action can contribute directly to global biodiversity goals while strengthening livelihoods and resilience.

As the world moves toward the implementation of the Kunming–Montreal Global Biodiversity Framework and the 2050 vision of "living in harmony with nature," community-led restoration offers an important pathway for achieving inclusive, resilient, and sustainable biodiversity conservation.

The message emerging from these case studies is clear: when communities lead restoration, local action can create lasting global impact.



References

CBD. (2022). *Kunming-Montreal Global Biodiversity Framework.* Convention on Biological Diversity. https://prod.drupal.www.infra.cbd.int/sites/default/files/2022-12/221222-CBD-PressRelease-COP15-Final.pdf

Government of India. (2024). *India's marine fisheries sector supports over 30 million livelihoods.* Press Information Bureau, Ministry of Fisheries, Animal Husbandry and Dairying. https://pib.gov.in/PressReleasePage.aspx?PRID=2192114

Government of India. (2009). *India's fourth national report to the Convention on Biological Diversity*. Ministry of Environment and Forests, Government of India. https://moef.gov.in/uploads/2018/04/India_Fourth_National_Report-FINAL_2.pdf

IPBES. (2019). *Global assessment report on biodiversity and ecosystem services*. Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. https://files.ipbes.net/ipbes-web-prod-public-files/inline/files/ipbes_global_assessment_report_summary_for_policymakers.pdf

NCSCM. (2024). *Annual report 2023–2024*. National Centre for Sustainable Coastal Management. https://ncscm.res.in/wp-content/uploads/2025/03/14_NCSCM_Annual-Report_2023-2024.pdf

United Nations. (2026). *International Day for Biological Diversity 2026: Acting locally for global impact.* United Nations Convention on Biological Diversity. https://www.cbd.int/ibd/2026

Annexure

Kunming–Montreal Global Biodiversity Framework (KMGBF): Goals and Targets

The Kunming–Montreal Global Biodiversity Framework (KMGBF), adopted under the Convention on Biological Diversity (CBD) in 2022, provides a global roadmap for halting and reversing biodiversity loss by 2030 and achieving the 2050 vision of "living in harmony with nature" (CBD, 2022).

The Framework includes four global goals for 2050 and 23 action-oriented targets for 2030.

A. Four Global Goals of the KMGBF

Goal	Focus Area
Goal A	Restore, maintain, and enhance ecosystems, species, and genetic diversity
Goal B	Ensure sustainable use and management of biodiversity and ecosystem services
Goal C	Ensure fair and equitable sharing of benefits from genetic resources
Goal D	Strengthen finance, capacity building, technology transfer, and implementation support

B. Twenty-three Global Targets for 2030

Target	Focus Area
Target 1	Integrated biodiversity-inclusive spatial planning
Target 2	Restore degraded ecosystems
Target 3	Conserve 30% of land, inland waters, and oceans ("30x30")
Target 4	Halt species extinction and recover threatened species
Target 5	Ensure sustainable and legal use of wild species
Target 6	Reduce impacts of invasive alien species
Target 7	Reduce pollution risks to biodiversity
Target 8	Minimize impacts of climate change on biodiversity
Target 9	Promote sustainable management and use of wild species
Target 10	Sustainable agriculture, aquaculture, fisheries, and forestry
Target 11	Restore and maintain ecosystem services
Target 12	Increase biodiversity in urban areas
Target 13	Fair sharing of benefits from genetic resources
Target 14	Integrate biodiversity into policies and planning
Target 15	Encourage businesses to reduce biodiversity impacts
Target 16	Promote sustainable consumption and reduce waste
Target 17	Strengthen biosafety and biotechnology governance
Target 18	Reform harmful incentives and subsidies
Target 19	Mobilize biodiversity finance
Target 20	Strengthen capacity building and technology transfer
Target 21	Ensure access to biodiversity-related knowledge
Target 22	Ensure participation of Indigenous peoples, women, and youth
Target 23	Promote gender equality in biodiversity governance

Small Grants Programme (India)
National Host Institution: The Energy and Resources Institute (TERI)
Address: 6C, Darbari Seth Block, IHC Complex, Lodhi Road, New Delhi - 110003
Tel: (+91 11) 2468 2100, 7110 2100 | Email: sgpindia@teri.res.in |
Website: www.sgp-india.org
Twitter- https://x.com/sgp_op7_india
Linkedin- https://www.linkedin.com/company/sgpin-op7/
Instagram- https://www.instagram.com/sgp_op7_india/
Facebook- https://www.facebook.com/SGPOP7India#
YouTube- https://www.youtube.com/@smallgrantsprogrammeindia