Impact Report 2024

regenerate Sundarbans

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Fostering collaboration

This report presents the work of the second year of Regenerate Sundarbans. The collaborative initiative brings together organizations, researchers and other stakeholders that are active in the Sundarbans. **Our shared vision is to realize the Sundarbans as a pioneering region for the protection of the environment and the empowerment of local communities.**

Together, we strive to ensure that the Sundarbans are a green and clean ecosystem that provides a safe habitat for people, animals and plants, and serves as a basis for sustainable income opportunities for the local population. Through mutually reinforcing partnerships, we are committed to preserving the unique importance and diversity of the Sundarbans for future generations.

In the second year, cooperation between the various stakeholders was intensified, for example through various online meetings. In October 2024, the first Sundarbans Summit was hosted online, bringing together members of Regenerate Sundarbans, local partner organisations, and interested NGOs. The event provided a platform for exchange and encouraged collaboration to support a sustainable development in the Sundarbans.

This Impact Report is a representation of the progress of the projects conducted by the participating organizations in 2024. It provides information on the different thematic areas and sheds light on valuable insights from the field.

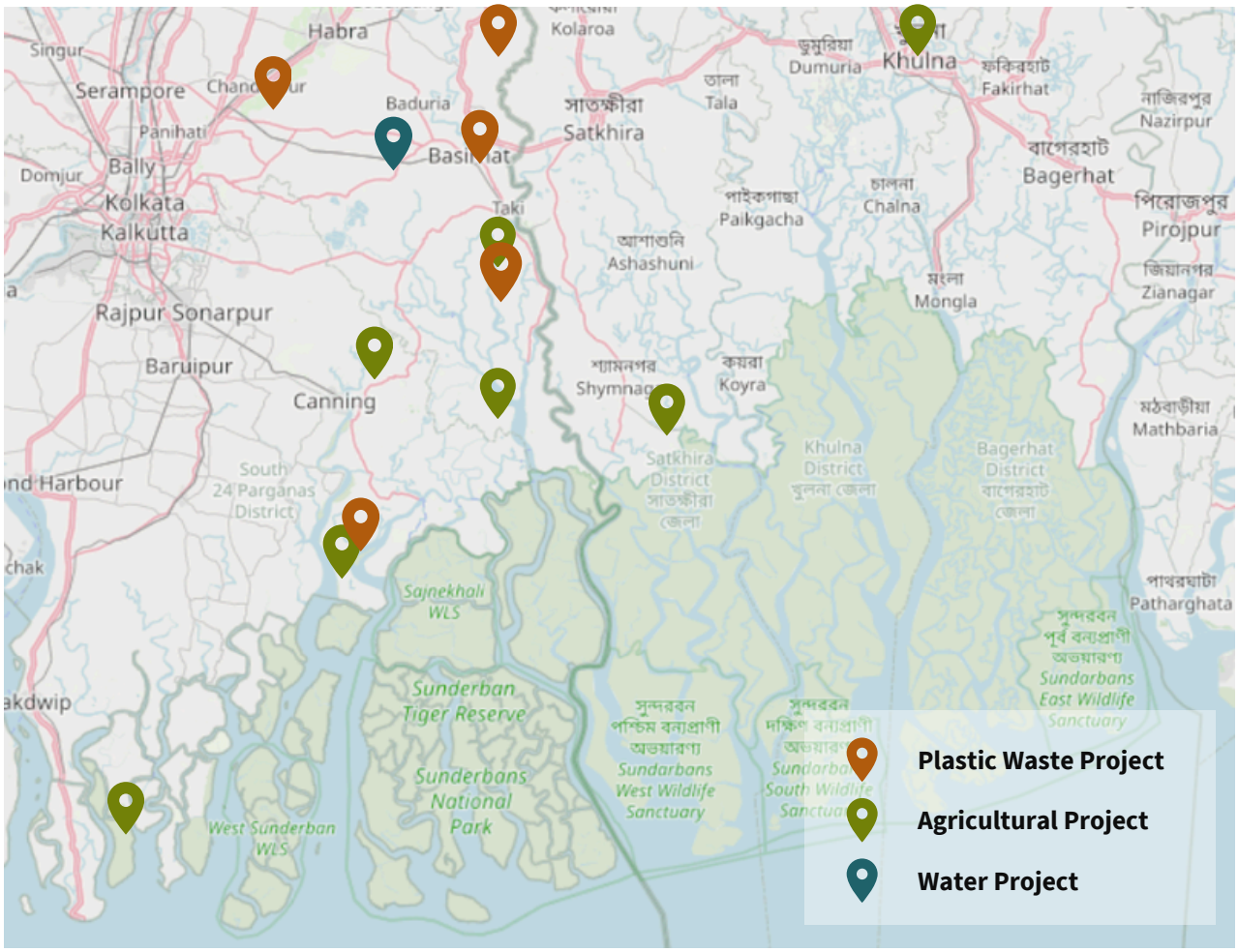
Over the next years, we want to expand our involvement in the Sundarbans and use our resources effectively. In future, we also plan to better pool our financial resources in order to achieve the greatest possible impact. We are always looking for new partners to join our network and work with us for the Sundarbans.

Partners in the Global North

The involved partner organizations in the Global North supported diverse initiatives in the Sundarbans and fostered understanding about the Sundarbans in 2024 with more than 1 million Euro in funding and technical support in the different focus areas:

Our focus areas

The organizations that have come together to form Regenerate Sundarbans are working mainly on the topics of plastic waste, agriculture and water as part of the initiative, but also on the topics of livelihood development and food security. Together, we are addressing some of the most important challenges faced by the population. The project locations are spread across the entire region, as the map shows.



This is why Regenerate Sundarbans is so important

The Sundarbans are unique from various angles: Located in the world's largest delta-region, they are also the world's largest contiguous mangrove forest. Home to a diverse range of flora and fauna, the Sundarbans are a crucial region for biodiversity. At the same time, they are on the Indian side home to more than 5 million inhabitants and the ecosystem forms the basis for the livelihood of many in the region. Like under a magnifying glass, most challenges our world is facing today can be seen in the Sundarbans: the effects of climate change, human-nature-conflict, urbanization and migration as well as various forms of pollution.

Impacting together: Goals and Focus Areas

We know that the challenges in the Sundarbans can only be solved together. That is why organizations from the Global South and the Global North are working together for Regenerate Sundarbans to combine their strengths, knowledge and resources and thus work more efficiently and effectively.
The diagram below provides an overview of the goals that the organizations working on Regenerate Sundarbans have jointly set themselves. The topic of climate change is seen as an overarching theme that is taken into account in all three thematic areas of plastic waste, agriculture and water. There are also other themes that reflect on each of these areas, such as livelihood development, food security or gender equality. The following pages of this report show examples of how the goals of the different areas are already being addressed.

Climate Change

Increasing the resilience of communities in the Sundarbans and adjacent areas in view of the effects of climate change, e.g. by creating safer living conditions, developing resilient income opportunities, addressing associated health risks and increasing disaster preparedness.

Plastic Waste

Develop **waste management infrastructure** in all inhabited blocks of the Sundarbans and adjacent areas, to **reduce environmental pollution.**

Increase environmental awareness among the local communities.

Improve the **living and working conditions** of waste workers.

Agriculture

Promote sustainable agriculture* and raise awareness of the benefits of natural farming methods and the use of traditional varieties.

Make better use of **economic opportunities** and sustainable modern technologies.

**sustainable agriculture implies usage of non-genetically modified seeds, no harmful chemical fertilizers or pesticides, and promotion of local seed varieties*

Water

Enhance **preparedness** of the population for disasters by implementing measures for **sustainable water management.**

Ensure and advocate for **access to safe drinking water and related topics.**

Support **livelihood opportunities** in face of increasing natural calamities.

Climate Change

Climate change affects all areas in which Regenerate Sundarbans' partners operate, and threatens safe living conditions, livelihoods and health. This is why we have chosen to address the issue as an overarching theme of the initiative.

The frequency and intensity of extreme weather events and natural disasters in the Sundarbans is increasing due to climate change. These environmental changes are creating a vicious cycle where the loss of natural resources and livelihoods drives more people to migrate, leaving behind fewer resources and putting additional strain on already vulnerable ecosystems. Some parts of the Sundarbans have already become uninhabitable, and this trend is expected to continue unless immediate action is taken.

The main sources of income in the Sundarbans, agriculture and fisheries, are severely threatened by the effects of climate change. As a result, the livelihoods of many inhabitants are more at risk, threatening their economic stability and food security. Climate change also poses significant health risks. Increased temperatures can lead to heat-related illnesses, while the scarcity of freshwater exacerbates hygiene and health problems, and uncertainty about future conditions can have an impact on mental health.

To counter these threats, the Regenerate Sundarbans initiative integrates the issue of climate change into all projects. The focus lies on building community resilience by creating safer living conditions and income opportunities that are adapted to the increasing threats posed by climate change, while also taking into account the associated health risks.

Our work in 2024

77,300
mangrove seeds and seedlings were planted

13,384
other trees were planted

Insights from the field

Strengthening Climate Resilience

The NGO Karuna Deutschland e.V. has been implementing diverse strategies to enhance climate resilience in the Sundarbans region of Bangladesh and India. The initiatives focus on disaster preparedness, ecosystem restoration, and nature-based solutions to mitigate the impacts of extreme weather events.

Disaster Risk Reduction in Communities
In 400 villages across Bangladesh and India, community members received a Disaster Risk Reduction leadership training to strengthen preparedness and response capabilities. This training played a crucial role in managing the impact of Cyclone Remal in May 2024. Using a cascade training system, more than 800 additional members were empowered to facilitate local preparedness and provide assistance during emergencies.

Restoring Mangroves for Flood Protection
In South 24 Parganas, West Bengal, Karuna undertook mangrove restoration using the Miyawaki method. The initiative revived a degraded mangrove area by planting diverse native species, such as Black Mangrove and Mangrove Date Palm. This approach enhances flood resilience and reduces soil erosion through small-scale protective measures like vegetated embankments.

Nature-Based Solutions: Coastal Protection
Karuna has successfully implemented three innovative nature-based solutions in Bangladesh:

1. Semi-Permeable Dam (Khulna): A four-section T-shaped structure made of brushwood that reduces sediment loss from intertidal waves, fostering mangrove growth and minimizing cyclone-induced sapling mortality.
2. Artificial Mangrove Shelter (Khulna): A 150-ft-long protective barrier that shields a disturbed mangrove forest from water currents and cyclones (picture below).
3. Floating Plantation (Munshiganj): An adaptive farming system that repurposes invasive Eichhornia biomass into floating beds for multistorey organic farming. Crops such as bottle gourd and spinach thrive even in flooded conditions and therefore reduce the reliance on fertilizers while ensuring food security.

Plastic Waste Management

The Sundarbans' mangrove ecosystem and its species are highly endangered by **plastic pollution**. This is why Regenerate Sundarbans supports local organisations that collect and manage plastic waste so that it does not end up in the environment.

A major challenge in managing plastic waste in the Sundarbans is the lack of a solid waste management infrastructure. Currently, waste collection relies on informal waste collectors.
Another key factor contributing to plastic pollution is the local population's low awareness of proper waste disposal and separation. Economic difficulties often force residents to resort to plastic as an affordable material, especially during natural disasters when plastic items can be lifesaving. This dependence, combined with inadequate knowledge of waste management, can lead to improper disposal practices that exacerbate pollution.
As part of Regenerate Sundarbans, a comprehensive waste infrastructure is therefore to be implemented in the region.

At the moment, three organizations are supported that work with waste workers to collect and process plastic waste that would otherwise have ended up in the environment. A new facility opened in 2024 (see picture), with work now taking place in a total of five locations in the Indian Sundarbans.

Through their work, the partners also promote environmental awareness among residents. By improving the living and working conditions of waste collectors and workers, the goal is to create a sustainable and inclusive waste management system. This approach will strengthen the resilience of the community, protect the mangrove ecosystem and contribute to the global fight against plastic pollution.

Our work in 2024

over 1, 500 tons
plastic waste collected and processed

over 260 waste workers
involved and working conditions improved

Insights from the field

Volunteering for the Community

The organization PSJS pursues a community-based approach and involves the so-called “Green Scouts” in its work in the Sundarbans. More and more children and young people are joining the groups and advocating for a sustainable environment.

In order to achieve long-term change, it is important that the entire community is involved. This is the approach taken by the NGO PSJS in the Indian Sundarbans. In addition to their activities, in which they collect and process plastic waste together with volunteers, they have founded the “Green Scouts”.

There are ten groups of around 15 children and teenagers who meet every week. The main aim of PSJS is to create awareness - and not just of the dangers of plastic waste. A PSJS employee, who leads the meetings, regularly provides input on the topic of community and sustainability. These include, for example, the management of plastic waste, the sustainable use of water or the enforcement of children's rights.

Among other things, the Green Scouts have created different overview maps in which they have recorded water sources or disposal options for plastic and other waste. They also raise awareness among those around them, for example their family or farmers from the region, about the dangers of improperly disposed plastic waste.
In this way, they are working together as a community to ensure that the Sundarbans remain a place worth living in for future generations.

Sustainable Agriculture

To ensure the long-term resilience of agriculture in the Sundarbans, there is an urgent need to shift to more sustainable farming practices. Currently, agriculture in the Sundarbans is largely dominated by conventional methods that rely on chemical fertilizers and pesticides. While these practices may increase yields in the short term, they often lead to long-term negative impacts such as soil infertility, water pollution, loss of plant diversity as well as negative effects on the health of consumers.

Since the "Green Revolution", the cultivation of high-yielding crops has prevailed in the Sundarbans, which are often less able to cope with the climatic challenges of the region. As a result, the use of indigenous seed varieties, which are better adapted to local conditions and climate change, has declined. Besides that, farming in the Sundarbans is often not seen as a lucrative profession, which drives seasonal migration to the cities where people seek work in other sectors. To overcome these challenges, the promotion of sustainable agriculture in the Sundarbans is essential.

This includes raising awareness of the benefits of natural farming methods and the use of indigenous seeds.
Sustainable agriculture in this context means avoiding genetically modified seeds, harmful chemical fertilizers and pesticides and instead using indigenous seed varieties as well as environment-friendly farming methods.
Promoting natural farming will strengthen the region's resilience to climate change, protect its biodiversity and support the livelihoods of its inhabitants.

In 2024, around 6,290 farmers were trained in different projects on techniques of sustainable farming. Around 4,680 of them changed to sustainable agriculture.

2 seed-banks, preserving

over 100 rice varieties

pulses, vegetable seeds, spices, flowers and oil seeds

Sustainable Agriculture

Insights from the field

Improving Market Access

Together, SOCEO, Schöck-Familien-Stiftung and local partner NGOs promote sustainable agriculture in the Indian Sundarbans that avoids the use of hazardous fertilizers and pesticides. But sustainability means more than ecological practices – it also requires economic viability.

The so-called "Knowledge Hubs" are places in different locations in West Bengal where beneficiaries can learn about sustainable farming methods and experience them in practice for themselves. An important aspect of the project is the promotion of sustainable agriculture and biodiversity. The farmers grow more than 100 traditional rice varieties that are better adapted to climate change. They are also diversifying their crops by growing different types of vegetables and lentils, making their agricultural systems more resilient.

A farmer produces puffed rice

However, training in sustainable agriculture alone is not enough. Many farmers find it difficult to access markets. For this reason, SOCEO and the Schöck Family Foundation are working with a local partner organization to help 1,800 farmers in West Bengal become social entrepreneurs. Through training in the areas of product processing, marketing, production planning and quality assurance, the farmers can increase the value of their products and thus their income.

Another aim of the project is to increase the number of sales channels that the farmers regularly use. Through the project, the beneficiaries learn how to sell their products for example at local markets, regional fairs or online platforms. In this way, they become more resilient and can sell their products at fair prices.

Rice field in West Bengal

Sustainable Agriculture

Insights from the field

Holistic Agricultural Training

Sign of Hope has been strengthening climate resilience among farmers by promoting agroecological practices. Through training, technical support, and community-based initiatives, the project has improved food security, economic stability, and environmental sustainability, with a focus on women's empowerment and social inclusion.

In 2024, around 1890 farmers received training in hazard-tolerant crops, vermicomposting, compost-making, and various climate-adaptive cultivation techniques, such as sack, crate, and loft farming. The project encouraged the use of indigenous seeds, rainwater harvesting, and organic fertilizers to reduce dependence on chemical inputs. As a result, every household now has a home garden, produces vermicompost and revitalized traditional seed-saving practices.

Economic and Social Empowerment

The initiative also supported self-help groups in establishing micro-enterprises such as beekeeping, crayfish processing, and fruit sapling sales. Collective marketing efforts increased profitability, and farmers gained better access to institutional resources and government programs. Year-round income security was achieved through cropping methods like sack cultivation and raised-bed farming. Besides that, special efforts ensured the inclusion of Adivasi and other marginalized communities in the project activities. Women played a key role in seed conservation, farming decisions, and community leadership, which led to increased confidence and recognition.

Environmental and Health Benefits

Besides the social and economic benefits, the project by Sign of Hope also had positive effects on the environment: The project team promoted biogas, improved cook stoves, and sustainable land-use practices.

Mangrove restoration efforts helped restore biodiversity and strengthen coastal protection. The evaluation of the project shows that the transition to organic farming has improved soil health, reduced medical expenses, and enhanced overall well-being.

Picture: Sign of Hope

Water

Climate change has led to more frequent and intense natural disasters in the Sundarbans. Stronger and more frequent cyclones cause widespread flooding, damaging homes, infrastructure and agricultural land. Rising temperatures contribute to longer periods of drought, which further strain water resources and agricultural productivity. In addition, changing monsoon patterns are disrupting traditional cropping patterns and reducing yields, directly impacting the livelihoods of local communities.

The region also faces critical freshwater shortages as groundwater levels continue to decline. This issue combined with inadequate infrastructure means that many communities do not have reliable sources of clean water.
To solve these problems, strategies must be implemented to ensure access to safe drinking water and improve community preparedness for natural disasters.

In addition, it is crucial to support agriculture in a way that it can withstand the increasing frequency of cyclones and other developments associated with climate change. This can include promoting climate resilient crops, training farmers in sustainable practices and developing early warning systems for natural disasters.

Our work in 2024

47,081 people

had access to safe drinking water through Functional Tap Connection provided under Jal Jeevan Mission and Arsenic Free Water Treatment Plant provided by Gram Panchayats

more than 62,000 people reached

with education (e.g. awareness on hand washing, drinking water, safe cooking habits, menstrual health, water conservation, use of latrine, prevention of water borne diseases)

3,972 people reached

within two years with WASH-advocacy, addressing communities, institutions and politicians

Water

Insights from the field

WASH Education and Advocacy

By combining advocacy for infrastructure improvements with widespread awareness campaigns, German Doctors and its partner Dearah Association for Social and Humanitarian Action (ASHA) have strengthened water security and sanitation in local communities in the Sundarbans.

Over the past two years, nearly 4,000 community members have been engaged in advocacy efforts, leading to tangible improvements in the WASH sector. For example, community members submitted formal requests to their local government, resulting in the installation of 58 new tube wells and 57 arsenic-free water treatment plants in public spaces such as schools and community centers.

Additional infrastructure

Besides that, two community toilets were built in response to local demand. Improved infrastructure also extended to basic amenities such as street lighting, drainage systems, and waste management, which were implemented following requests from children's groups.

In 2024, more than 62,000 people were reached through hygiene awareness campaigns by German Doctors and ASHA. These efforts emphasized practices like proper handwashing techniques, using separate footwear for toilets, keeping household waste at a safe distance, covering food, and maintaining clean water storage.

Improved water testing

To ensure water quality, four testing laboratories were established across the Sundarbans, and the project team gained approval to distribute testing kits through government programs. While the number of households accessing these facilities varies based on demand, the initiative has significantly enhanced local capacity to monitor and maintain water safety.

Picture: Dearah Association for Social and Humanitarian Action

Pilots and Research

Safe Drinking Water in West Bengal

German Doctors has supported its partner organization ASHA in conducting two studies on WASH and water supply in 2024. The results provide insights into the challenges of the topic in various parts of West Bengal.

One of the studies covered 1,300 households across 34 villages in 12 districts of West Bengal. The majority of surveyed households face significant economic hardship: only 3% reported a monthly income above 10,000 INR, while 64% earn less than 6,000 INR per month.
Sanitation remains a critical issue. Over half (55%) of the households rely on unimproved sanitation systems, and 28% still practice open defecation. 55.22% of households reported that they do not regularly wash their hands with soap.

Groundwater is the main source of drinking water for most households. However, more than half of respondents identified March, April, and May as periods of groundwater scarcity. Overall, 71% of households pointed to low groundwater levels as a key obstacle to accessing safe drinking water, and 68% reported having no access to government-provided tap water.

Challenges in Basirhat
The second study was conducted in three villages across ten blocks in the Basirhat Health District, involving 1,632 households. Around 31% relied on private tube wells for drinking water, a source that is often vulnerable to contamination, especially in flood-prone and arsenic-affected regions.
Half of the households used unimproved water sources for cooking.
While the Public Health Engineering Department has established decentralized water-testing laboratories, the study found

several gaps in their usage and effectiveness. Many residents are unaware of these facilities, which are often limited to urban or district centers. Furthermore, the data collected through testing is rarely analyzed, leading to delays in addressing water quality concerns.
Among the surveyed households, 28% reported iron contamination in their drinking water, 16% perceived a threat of arsenic contamination, and 9% lacked access to tap water. In addition, 8% were forced to purchase water in barrels on a daily basis. Low groundwater levels and low water pressure were reported by 21% and 13% of households, respectively.

The findings highlight the need for targeted awareness campaigns, better access to reliable water sources, and enhanced collaboration between communities and government stakeholders. The study outlines specific groups that require further sensitization and identifies key areas where improved communication and coordination with the local government are essential.

Outlook

We look forward to continuing to share ideas, pool resources and create synergies as part of the Regenerate Sundarbans network. On a regular basis, we host online meetings where the organizations present their projects and we evaluate how we can work together on our goals in the different thematic areas.
This report will be published annually to share the progress and impact of the initiative and provide valuable and comparable insights into the work being done in the Sundarbans.

Sundarbans Summit

The network plans to host the second edition of the Sundarbans Summit in October 2025. The online event will serve as a platform for local organizations to present their project ideas. These projects will include a range of initiatives, always focusing on the core themes of Regenerate Sundarbans:

- Climate Change,
- Plastic Waste,
- Agriculture and
- Water.

The aim is to foster partnerships and collaborations that can bring technical expertise, financial resources and innovative solutions to the challenges facing the Sundarbans.

Join our effort!

We are happy to hear from organizations that share our goals and are active in the Sundarbans in India or Bangladesh.
If you are interested in joining Regenerate Sundarbans, please get in touch with us:

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