



POLICY BRIEF 2023/1

Photo: Julian Granados, ZMT

Implementing climate change adaptation projects in local communities: adapting to existing institutions and making them matter

Summary

This policy brief shares the lessons learned by the MIMAC project of the German Cooperation Agency (GIZ) in implementing climate-change adaptation projects in local settings.

We highlight the need to adapt climate-change adaptation measures to the local governance structures and to the socio-economic and environmental context of the participating communities.

Local, traditional knowledge can be harnessed to develop appropriate adaptation tools for local scenarios. For this to occur the communities must be considered agents of change and the adaptation projects must understand and integrate their cosmology into the project structure.

The importance of ensuring a clear dialogue between the involved parties using an understandable- and cultural-appropriate language is also highlighted.

We emphasize the benefits of promoting transparent mechanisms for the adequate distribution of the costs and benefits of adaptation projects in order to ensure equitable results that promote the acceptance and sustainability of projects.

RESULTS

- For climate actions to be successful, local communities (e.g. indigenous peoples) must be seen as agents of change and their participation must be guaranteed.
- The strengthening of local governance systems and of participation mechanisms enhance a sense of communal project ownership, thus contributing to project success.
- Adjusting adaptation projects to the existing institutional and organizational structures of the local scenarios is essential to achieve positive environmental and social results.
- Communities are better prepared to implement climate change adaptation measures when their implications are contextualized to the local setting.
- A transparent dialogue between stakeholders is important to implement climate change adaptation measures.
- The clear distribution of costs and benefits related to adaptation measures is essential to promote a sense of fairness among the participants.

RECOMMENDATIONS

- Contextualize climate change adaptation activities in the vulnerability of local communities
- Adapt national and regional adaptation policies to the worldview of the communities
- Recognize the existing institutional scheme, and frame adaptation projects to this institutional structure.
- Promote the creation of a mechanism that dictates a clear distribution of the benefits and costs associated to the adaptation policies.
- Ensure a transparent dialogue between stakeholders using understandable language and terminology.

CONTEXT

Mangroves provide ecosystem services of local and global importance. They offer tools for mitigating climate change and for adapting to a changing environment. Mangroves protect coastal communities from storms and storm surges; they reduce coastal erosion and function as nurseries for fish, crustaceans, molluscs and refuges for coastal and marine biodiversity. They also sequester carbon up to four times faster than average terrestrial forest areas. Their destruction affects the provision of ecosystem services for local communities and for all.

Mangroves in Colombia are considered national natural heritage and are regarded as strategic ecosystems. Law 2243 of 2022 established a regulatory framework for their protection under the existing legal mechanisms and with the participation of local communities. The Colombian government identified the protection and ecological restoration of strategic ecosystems such as mangroves as a national priority.

The project for the Integrated Management of Marine and Coastal Ecosystems (MIMAC) leads an initiative for the preservation of mangroves in the Bahía Hondita, in the municipality of Uribia, department of La Guajira. The main objective of the MIMAC project is to increase the proportion of Colombia's marine and coastal biodiversity effectively conserved in and around protected areas through sustainable management. This project is implemented by the German Cooperation Agency (GIZ) as part of the International Climate Protection Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and Consumer Protection (BMUV), in conjunction with Colombian and German counterparts. These partners include the Leibniz Center for Tropical Marine Research, the Ministry of Environment and Sustainable Development, the Corporation for the Sustainable Development of La Guajira, and the indigenous communities of Bahía Hondita.

This adaptation project was formulated using the traditional knowledge of the Wayuu indigenous people and integrating their knowledge into the technical process of MIMAC.

The Bahía Hondita is a bay of approximately 3,000 hectares located on the La Guajira Peninsula, in the Colombian Caribbean coast. This bay is home to mangrove forests that are of great ecological importance and vital for the survival of local communities. The mangrove forests of this region are dominated by the species *Rhizophora mangle* and *Avicennia germinans* (Gil-Torres, Fonseca et al. 2009, Ecoversa 2019). These mangroves are small and are one of the few on the planet that thrive in high drought conditions with minimal freshwater influence.

The coastal communities that live around Bahía belong to the indigenous Wayuu ethnic group and are characterized by their high socioeconomic vulnerability, which may be exacerbated by climate change. According to the Colombian Bureau for statistics (DANE), there are about 394,683 indigenous people in the department of La Guajira, with a high proportion of unsatisfied basic needs. The municipality of Uribia has a multidimensional poverty rate of 92.2%, being the highest in the entire country. The main economic activity of the communities is artisanal fishing. 90% of the inhabitants of the communities are dedicated to this activity (Gil Torres et al. (2009). Fish is their main source of protein.

The formulation and implementation of adaptation measures for the Wayuu communities thus takes place in the context of a social, economic, environmental and climatic crisis. Considering the conditions of vulnerability and the impacts of climate change, adaptation actions at the local level are more urgent than ever.

The experience of the MIMAC project showed that adaptation projects are more efficient when they are part of a stable government agenda, when the communities are considered agents of change and when their governance- and participation mechanisms are strengthened in order to guarantee ownership of the measures to be implemented.

Adjusting the climate-change adaptation measures to the existing local institutional and organizational scheme is essential to achieve positive results with said measures. Communities are better prepared to implement adaptation measures when public policies are adapted to the local planning and governance processes and their implications are contextualized to the local scenario.

It is important to understand how these national guidelines can be implemented in local territories, and also understand the mechanisms to scale local experiences towards national public policy.

Governance mechanisms capable of implementing these commitments in the local territory in a fair and participatory manner are necessary.



RESULTS

The experience of the MIMAC project in La Guajira highlighted the importance of adapting environmental management practices and climate change adaptation projects to the communities' own environmental knowledge and to their local institutional and organizational scheme.

During meetings held in 2019-2022 with the communities of Bahía Hondita, the MIMAC team and community leaders discussed the changes in the mangrove forests that the communities have witnessed during the last decades. It was stressed that the mangroves had experienced a strong deterioration in the last 20 years. The severe droughts of recent years and the scarcity of fresh water have increased the salinity of the water in Bahía Hondita. Sediments partially or totally closed some entrance channels to various sections of the bay, thus reducing the water flow. The increase in water salinity and the reduction in water flow have begun to affect the survival rate of mangroves, and various species of fish and reptiles.

The older adults highlighted that cleaning practices were carried out ancestrally to reduce channel sedimentation, but these practices had been neglected in recent times. Such practices helped maintain water flow and the entry of fish and other animals, thus maintaining the biodiversity of the bay and also maintaining a salinity level tolerable for the mangrove forests.

In accordance with their traditional knowledge, the local communities stressed the need to restore the water flow and connectivity of the bay in order to restore damaged mangrove areas and maintain fish populations. They also highlighted the benefits of reforesting mangrove areas that had suffered the most from increased salinization and exploitation.

As a consequence, they proposed adaptation measures based on the continuous cleaning of canals and the reforestation of mangroves in deforested areas. These environmental services were to be accompanied by trainings that would provide them with the tools to offer a sighting tourist service in mangrove areas. These trainings would help diversify their sources of income in the face of climate change.

Based on their traditional knowledge, community members led the process of both depicting the ecological changes of mangrove forests and finding an adequate response to the envisioned challenges.

By acknowledging the existing institutional scheme, and framing adaptation activities within these institutional

structures, it was possible to take advantage of the community's traditional environmental knowledge. This traditional knowledge comes to the fore when the communities are empowered in their decision-making and when the designation of roles and rules are consistent with the existing institutional framework.

It appeared that management practices based on indigenous knowledge enjoy an appropriation process that can lead to positive social and environmental results. These appropriation processes are strengthened with the self-determination of communities and with independent decision-making processes.

The existing organizational scheme generated self-confidence of the communities in their capacities and led to the rules established in the project being observed.

The MIMAC experience showed that, by contextualizing the implications of climate change to the implications it has on their way of life, communities were better prepared to implement the necessary adaptation measures and to accept the costs that these entail. By presenting the challenges of climate change in an understandable vocabulary for the communities and relating the expected changes to the direct implications that the communities will experience, they could also better envision the best way to prepare such scenarios.

Contextualization was also important to accommodate national and regional climate change adaptation policies to the worldview of local communities and to promote their acceptance. The unique characteristics of local communities makes it relevant to translate the objectives generically established and described by the central authorities to the particular needs and opportunities of each community.

The MIMAC experience highlighted also the importance of ensuring a transparent dialogue between all the actors involved in adaptation projects. The receptivity of the communities is essential for the successful implementation of adaptation measures, and the success of environmental projects depends on a cordial understanding between the involved communities and other stakeholders.

The importance of promoting the creation of a mechanism that dictates a clear distribution of the costs and benefits associated with adaptation policies was also highlighted. In the case of MIMAC, the mangrove conservation project was expected to give economic value to nature restoration while providing an additional source of income for the communities of Bahía Hondita. The equitable distribution of costs and benefits was important to ensure the support of the communities and avoid frictions that wear down the project and affect the coexistence of the communities.

POLICY RECOMENDATIONS

Recommendation 1

Contextualize the activities of adaptation to climate change in the vulnerability of the communities to s changes.

Climate change adaptation projects must be able to relate climate change risks and adaptation opportunities to the needs of local communities and their interests. The projects must be able to convey the risks and opportunities in an understandable manner that integrates the environmental and social reality of the communities.

Recommendation 2

Adapt national and regional policies for adaptation to climate change to the worldview of communities.

The adaptation policies dictated by the central government must be adjusted in their conception, in their vocabulary and in their reason for being to the understanding that the communities have of their relationship with nature.

Recommendation 3

Recognize the existing institutional scheme, and frame adaptation activities to this institutional structure

Adaptation projects must be adapted to local governance and administration institutions. Projects

that seek to modify such institutional arrangements are less successful.

Recommendation 4

Promote the creation of a mechanism that dictates a clear distribution of the benefits and costs associated to adaptation policies

The costs and benefits associated with the implementation of adaptation projects must be clearly distributed through a mechanism framed in the communities' own institutions and governance. This in order to promote equity among the participants and favour the acceptability of the project.

Recommendation 5

Ensure a transparent dialogue between the participating actors and interested parties using an appropriate language and terminology.

The dialogue between the participating actors must be constant, and must be carried out using an appropriate vocabulary for the local communities. The use of terminology foreign to their knowledge or their understanding of reality is counterproductive and can lead to misunderstandings.

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ABOUT THIS POLICY BRIEF

This Policy Brief is part of a series aiming to inform policy-makers on the key results of the ZMT research projects and provide recommendations to policymakers based on research results. The series of ZMT Policy Briefs can be found at <https://www.leibniz-zmt.de/en/research/publications/policy-briefs.html>. This publication was commissioned, supervised, and produced by ZMT.

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DISCLAIMER

The policy recommendations made do not necessarily reflect the views of the ZMT or its partners.

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You can find more information about the MIMAC project [here](#)

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