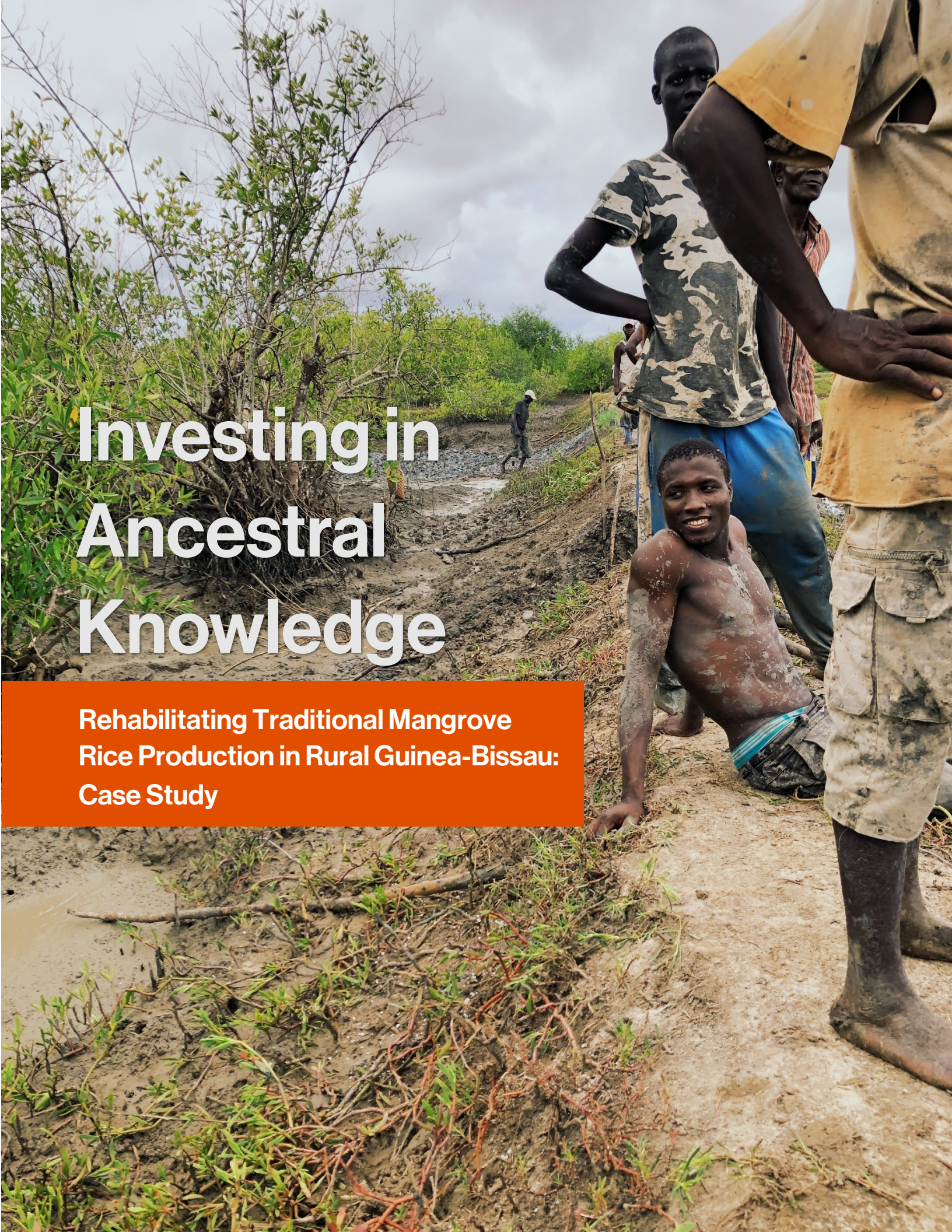

Investing in Ancestral Knowledge

Rehabilitating Traditional Mangrove Rice Production in Rural Guinea-Bissau: Case Study

PADES

Economic Development Project for the Southern Regions

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Project Background

In Guinea-Bissau, IFAD has long been a pioneer of rural transformation, operating during periods of political instability and relative peace. Agriculture is a mainstay of the national economy but has struggled to modernize and diversify despite enormous potential.

Since 2015, a strategic priority of the national government has been achieving self-sufficiency in rice production while increasing its domestic consumption. Eliminating current constraints and structural inadequacies in the sector is essential to optimizing value chains, reducing rural poverty, and combatting food insecurity.

The southern regions of Tombali and Quinara previously benefitted from the Rural Rehabilitation and Community Development (PRRDC) project, which closed in 2013. While drawing on lessons learned, the Economic Development Project for the Southern Regions (PADES) shifted IFAD's focus in the country to critical infrastructure investments and the promotion of rice cultivation. The project, running from 2015 to 2021, is structured around the following three components:

Component 1: Support for rice production, productivity, and complementary activities

Component 2: Support for value-added to production and increased market access

Component 3: Project coordination and management

A key feature of PADES has been the rehabilitation of traditional mangrove rice cultivation, which accounts for 80% of domestic production with an estimated gross productivity of 115,000 tons of paddy.

The present case study conducted in August of 2019 examines the impact of project activities and investments in the neighboring rural communities of Bedanda and Caboxanque in the southern region of Tombali. It draws on available data and the various points of view of involved project stakeholders, including beneficiaries, in-country staff, and local NGOs.

Cover Photo: Young men take a break from adding to the large dyke that prevents saltwater tides from entering their rice fields.

Community Context

Photo: The primary dyke at Bedanda. To the left are cleared mangroves. On the right are rice fields.

Rice cultivation in mangrove swamps differs significantly from that which is practiced in highland regions and lowland fields. The arduous tasks of clearing mangroves and building large dykes to prevent saltwater intrusion must be undertaken by hand, using long-handled wooden plows. Here, thick mud and brackish water render heavy machinery obsolete. Productivity, however, is considerably higher than elsewhere, typically yielding between 1,500 and 3,500kg of paddy per hectare.

In the coastal communities of Caboxanque and Bedanda, where mangrove rice production has been practiced for generations, large swaths of rice fields in cleared mangroves had been left abandoned. Rising ocean tides constantly threatened the structural integrity of old, degraded dykes. Years of recurrent crises contributed to a breakdown in community cohesion and an exodus of rural youth to the capital. This left many family units unable to mobilize the necessary labor for maintaining their portion of the dykes, impacting all the surrounding plots.

Additionally, water levels were traditionally managed using automatic dischargers made from long palm trunks that had been hollowed out by hand. These tended to rot quickly and required changing after every season. Over time, the rice fields became less and less productive, and soil that had undergone a long process of desalinization was severely compromised.

Intervention

Community Mobilization

The first step of the project implementation process was mobilizing principal stakeholders and ensuring community buy-in with the help of local partners. To this end, PADES supported the creation of various committees charged with managing specific aspects of the project intervention. Based on a scale up of the CDIT model used in a previous project, these committees are organized at the local level and led by project beneficiaries chosen by the community at large to represent their interests.

Given the intense labor demands of rehabilitating dykes, Bolanha Management Committees played an especially crucial role in Bedanda and Caboxanque. They ensured all community members took ownership of construction activities and contributed their individual resources throughout the implementation timeline. A series of trainings were held on how to organize and mobilize as an association, how to elaborate formal documents, and how individual contributions ensure sustainability.

Table 1: Community Mobilization Trainings

Community	Trainings	Males	Females	Youth
Bedanda	10	32	23	10
Caboxanque	7	35	19	13
Totals	**17**	**67**	**42**	**23**

Structural Investments

Drawing on the knowledge of project beneficiaries, PADES delivered a tailored response to existing water management issues through targeted structural investments that were implemented and directly managed by the committees established. As outlined in the table below, these investments included: rehabilitating degraded dykes, upgrading automatic water dischargers from palm trunks to PVC tubing, and rehabilitating a stretch of rural road in Caboxanque to increase producers' ability to sustainably bring their rice to market.

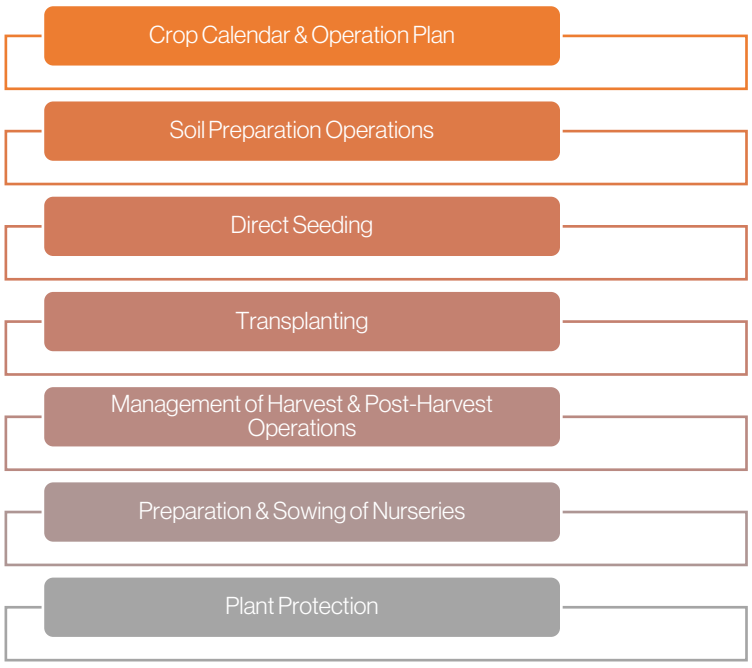
11,7 km of rural road rehabilitated in Caboxanque

Table 2: Structural Investments

Site	Surface Rehabilitated (ha)	Length of Primary Dyke (m)	Number of Tubes		
			PVC 315	PVC 200	PVC 160
Caboxanque	1884	12350	92	88	155
Bedanda	371	6240	18	12	30
Totals	**2255**	**18590**	**110**	**100**	**185**

In addition to structural investments, limits to productivity were also addressed through the provision of high-quality seeds to 10 beneficiaries chosen to become seed-multipliers. They participated in a 7-day training organized by the National Agricultural Research Institute (INPA), the only agricultural research agency in the country. Of those trained, 6 were women and 4 were men.

INPA Training Program



Impact

Methodology: Focus Groups

Over the course of two days, focus groups were conducted and testimonies were gathered from available beneficiaries in both communities. Discussions were facilitated by the project Sociologist, Agronomist, and representatives of the local NGOs, DDS and Cocedecas. Due to heavy rains, many beneficiaries were preparing their fields for planting, while in Bedanda, repairs to the primary dyke continued.

In total, three focus group were held: two with community members in Bedanda and one with members of the Bolanha Management Committee of Caboxanque. Daily schedules, progress on project activities, visible impacts, and challenges encountered were discussed, with an emphasis on significant changes beneficiaries have observed.

From these conversations, the following themes were identified:

Community cohesion and solidarity across interventions.

Sustainable management of activities using the committe model.

Introduction of horticulture as a complementary activity.

A common highlight in all conversations was the communal approach to dyke rehabilitation and the importance of organizing labor and resources through committees. Historically, mangrove rice production has been dominated by the men of the community, given its exceedingly strenuous physical demands. However, given the collective nature of the rehabilitation process, women were able to demonstrate their dynamism in assisting with activities such as the collection and compaction of mud for construction.

Notably, before PADES interventions:

- No specific mechanism for mobilizing and managing community development activities existed.
- Families and individuals had to find and pay others to help repair portions of the dyke.
- Women did not practice horticulture systematically.

Beneficiaries also identified the project innovations they believe contributed most to the successful implementation of project interventions:

- A process for voluntarily offering individual contributions to a collective fund.
- Statutes organizing management committees with specific duties and roles.
- Training women on horticultural activities that occur outside of the rice-growing season.

Enterprising Communities

The Bolanha Management Committees in both communities organized monetary contributions from families as well as contributions of items such as oil and fish. These were used by women to cook meals for laborers at the rehabilitation sites, so that work did not stop in the middle of the day.

Committees themselves were perceived as well organized and highly functioning thanks to recognized roles and responsibilities established in committee statutes. However, having written statutes has also posed a challenge for members who are not literate. Among the women especially, increased literacy training was a key activity they would like to see incorporated in the project.

Furthermore, in Caboxanque, the rehabilitation of the rural road was acknowledged as a major impact on the community. While work was executed by an outside company, the Inter-Village Road Maintenance Committee (CITEP), comprised of individuals who live along the stretch of road, expressed feeling responsibility for the investment and ensuring its durability. One result of the formation of a CITEP has been increased dialogue with the Ministry of Public Works in the region.

Finally, nearly all community members have felt the impact of project interventions in terms of increased rice production during the last growing season. While a challenge has been garnering an accurate estimation of changes in productivity, the table below presents data for the last crop cycle, the first since PADES began activities in the two communities.

Table 3: Mangrove Rice Productivity in Caboxanque and Bedanda

Site	Rehabilitated Area	Productive Area	Yield (t/ha)	Total Production	Reference (t/ha)
Caboxanque	1884	1641,86	2,25	3694,19	1,6
Bedanda	371	115,1	2,43	279,69	1,6

"With the additional money I earned last season, I finished building a house for my family and was able to send four of my children to school this year."

Stories of Change in Caboxanque

Caboxanque has always been known as one of the most productive rice zones in all of Guinea-Bissau. During the dry season, merchants arrive from all over the country to participate in a weekly market and purchase rice directly from producers.

Biom (top left) and his family contributed to the dyke rehabilitation effort. Since then, he has become one of the region's most productive farmers and was chosen as a seed-multiplier. Before the project interventions, he was producing roughly 9 tons of rice on his parcel. This past growing season, his plot produced 16 tons, 11 of which he sold back to the project. The seeds from producers like Biom are recovered by the project team and redistributed to other beneficiaries in the community who did not receive any during the last growing season.

Wilbonhe (bottom left) is the President of the Horticulture Management Committee in Caboxanque. While, she has no rice parcel of her own, she borrows land from neighbors who are occasionally unable to plant during the season. In previous years, 2 tons of rice was the maximum she could produce. This year, however, she managed to sell back 4.5 tons to the project.

"Before the project, my son had to leave the teacher training college, but I sold enough rice last season to pay for him to matriculate again."

Lessons Learned

Following conversations with beneficiaries, country staff and NGO partners identified key lessons learned during project implementation.

Literacy Training

While statutes governing various committees formalized the model within the community, not all members are aware of their stipulations due to high rates of illiteracy. Incorporating and expanding literacy training specific to project objectives is crucial among women especially, given that they are the sole participants in Horticulture Management Committees.

Complementary Activities

Unexpected water management challenges arose in the development of horticultural activities, which should be given special consideration in future projects in coastal areas. When wells were dug close to the designated plots, only saltwater was reached. As such, this increased the labor demands on women, who had to walk greater distances to reach fresh water for their gardens.

Gender Considerations in Community Mobilization

Ensuring that consideration for local gender dynamics is reflected in field activities from the initial stages is critical. Currently, local partners count on only one female community mobilizer in the region, which created challenges in the initial stages of implementation.

Conclusion

In the coastal communities of Caboxanque and Bedanda, mobilizing existing community strengths and resources has been the key driver of success in the massive mangrove rehabilitation effort. PADES's value-added is the ability to capitalize on traditional knowledge while introducing infrastructure improvements that are sustainably managed and tailored to the local context.

While typically a male-dominated enterprise, the creation of dynamic management committees has ensured the inclusion of women and youth in the most vital economic activity in the region. Additionally, the promotion of alternative income-generation activities through the complementary practice of horticulture has offered women a stake in the revitalization of the local economy.

Importantly, both communities now count on responsive mechanisms for dealing with challenges that arise. Continuing to strengthen this capacity and increase dialogue with other stakeholders and local partners will establish the region as an indispensable asset in contributing to the national goal of achieving self-sufficiency in rice production.