

Ex-post evaluation

Biodiversity conservation in coastal areas, Mauritania

Title	Protection of biodiversity in coastal areas in Mauritania				
Sector and CRS code	41030 Biodiversity				
BMZ number	2010 67 230				
Commissioned by	BMZ				
Recipient and executing agency	Ministry of Economic Affairs and Development (MAED) / BACoMaB and the management teams of the Banc d'Arguin and Diawling parks				
FC financing volume and instrument	EUR 25.6 million as a grant				
Project duration	2011-2022	Reporting year	2025	Year of random sample	2024

Project objectives and implementation

The objective at the outcome level was to achieve a sustainable improvement in protected area management. At impact level, the objective was to preserve biodiversity and fish stocks in the Banc d'Arguin (PNBA) and Diawling (PND) nature reserves. The programme consisted of two main components: capitalising the BACoMaB nature conservation fund and financing infrastructure in the PNBA and PND.

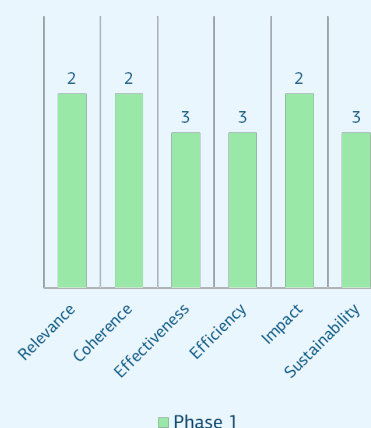
Key findings

The project was moderately successful. The following aspects were decisive for the appraisal:

- Both protected areas are of outstanding importance for the conservation of biodiversity and the economy of Mauritania.
- The rehabilitation of the hydraulic infrastructure was of fundamental importance for the protective function of the PND, the fishing opportunities for the population and the overarching biodiversity objectives.
- The project was implemented in close cooperation with German TC and other donors.
- The outcome and impact targets set were largely achieved.
- Some of the financed building infrastructure and equipment is hardly used and not maintained. Some of the rehabilitated dykes were damaged during the implementation phase by port construction work. This impairs effectiveness, production efficiency and sustainability.
- Gold and gas extraction, overfishing and climate change pose significant sustainability risks. However, given the strong economic incentives for preserving fish stocks and the BACoMaB providing a permanent source of funding for the protected areas, it can be assumed that the effects will be predominantly sustainable.

Overall rating

moderately successful (3)



1: very successful – 6: completely unsuccessful

Conclusions

- The combination of investments in park infrastructure and the capitalisation of a nature conservation fund is a promising approach to protected area promotion, as it meets acute investment needs and at the same time creates a sustainable source of funding for the operating costs of protected areas.
- In order to increase the longevity of capital goods, it should be checked whether the beneficiaries have suitable storage facilities and workshops for the adequate protection of sensitive parts and any repairs that may be necessary.

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Imprint

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List of abbreviations

AFD	Agence Française de Développement
PCR	Final completion report
BACoMaB	Banc d'Arguin, and Coastal and Marine Biodiversity Trust Fund Limited
BP	British Petrol
GDP	Gross domestic product
BMZ	Federal Ministry for Economic Cooperation and Development
DAC	Development Assistance Committee
EPE	Ex-post evaluation
EUR	Euro
FC	Financial cooperation
FC E	FC Evaluation
FFEM	Fonds Français pour l'Environnement Mondial
FIBA	Fondation Internationale du Banc d'Arguin
GIZ	German Society for International Cooperation
HDI	Human Development Index
IUCN	International Union for Conservation of Nature
MAED	Ministère des Affaires Economiques et du Développement
MAVA	Nature conservation foundation established in 1994 by Swiss Dr Luc Hoffmann
MP	Module proposal
MRO	Mauritanian ouguiya
OECD	Organisation for Economic Co-operation and Development
PA	Project appraisal
PES	Payment for Ecosystem Services
PNBA	Parc National du Banc d'Arguin
PND	Parc National du Diawling
PP	Project proposal
TC	Technical cooperation
USD	US dollar

Overview

General conditions and classification of the project

The coastal zone of Mauritania encompasses one of the world's most fish-rich waters. Its shallow waters are important ecosystems for the reproduction and growth of young fish and form the basis for the abundance of fish. The coastal areas are also used by around 2 million migratory birds, including many vulnerable species. Around one third of this coastal region has been protected since 1976 with the establishment of the Banc d'Arguin National Park (PNBA). The PNBA is the most important breeding site for waterbirds on the Atlantic coast (IUCN, 2020). It stretches over more than 180 km and covers an area of 12,000 km², consisting of almost equal parts of marine areas (5,400 km²) and land areas (6,600 km²). The PNBA has been a Ramsar protected area since 1982 and a UNESCO World Heritage Site since 1989.¹

In south-western Mauritania, the Parc National Diawling (PND) is the country's second most important national park: the PND covers an area of 156 km². In addition, there is a 300 km² peripheral zone with sand dunes and a mangrove belt. Together with the Djoudj National Park in Senegal, the PND has formed a cross-border UNESCO biosphere reserve since 2005. Due to its international importance for waterfowl and migratory birds, the PND is also designated as a Ramsar site.

In 2009, the BACoMaB (*Banc d'Arguin and Coastal and Marine Biodiversity Trust Fund Limited*) nature conservation fund was established. Its objectives are to protect Mauritania's biodiversity and ecosystems in the long term by providing reliable financing for the running costs of the protected areas and to promote the management of the protected areas and environmental education. The BACoMaB is an trust fund under English law with limited liability, which is not subject to taxation due to its non-profit status. Payments are made into the *endowment* fund for an indefinite period and are to be maintained by the BACoMaB on a permanent basis. Financing in line with BACoMaB's objectives is provided from the returns generated by the fund capital invested on the capital market.

The project evaluated here in its entirety was reviewed in September 2011, with an originally planned duration of three years (2012–14). A request for additional funding in the amount of EUR 10 million followed in November 2014, and another in the amount of EUR 3.5 million in 2018. The total duration was from 2012 to 2022. The project consisted of two components: investments in the park infrastructure of the PNBA and PND (infrastructure component) and the capitalisation and financial support of the BACoMaB (capitalisation component). The infrastructure measures were completed in 2019, and the final inspection took place three years later at the time of the PCR, an accompanying measure for further technical support for the BACoMaB was in preparation, which is why the PCR only referred to the infrastructure components. However, as the capitalisation of the BACoMaB targeted within the project has been fully achieved, this component is nevertheless taken into account in the evaluation. The aforementioned accompanying measure to support the BACoMaB is still being implemented.

Brief description

The project financed infrastructure measures in the ecologically significant national parks of Banc d'Arguin (PNBA) and Diawling (PND) with the aim of strengthening the management of the protected areas. In addition, FC funds were paid into the capital stock of the conservation fund "Banc d'Arguin, and Coastal and Marine Biodiversity Trust Fund Limited" (BACoMaB). These endowments are invested on the capital market. The returns are used to finance part of the operating costs of the protected areas and other activities in the field of coastal and marine protection. The project was implemented by PNBA, PND and BACoMaB.

The target group of the project was the population living from fishing within and on the fringes of the supported parks. Due to the enormous importance of fishing for the national budget, the entire population of Mauritania indirectly benefits from the project. The entire world population also benefits from the positive climate effects and the preservation of biodiversity. The project was executed by BACoMaB and the directorates of PNBA and PND.

¹ The Ramsar Convention is an international agreement for the protection of wetlands of international importance, particularly as habitats for waterfowl and wading birds.

Breakdown of total costs

The planned and actual figures refer to the sum of the initial commitment (EUR 12 million) and the two increases (EUR 10 million and EUR 3.5 million). The planned costs were revised upwards in 2014. Mauritania's own contribution includes grants for BACoMaB from EU funds, which are part of the fisheries agreement between the EU and Mauritania.

	Plan	Actual
Investment costs (total) in EUR million	30,7	29,71
Own contribution in EUR million	5,2	4,07
External funding in EUR million	25,5	25,64
of which BMZ funds in EUR million	25,5	25,64

Table 1 : Breakdown of costs

Map of the project region

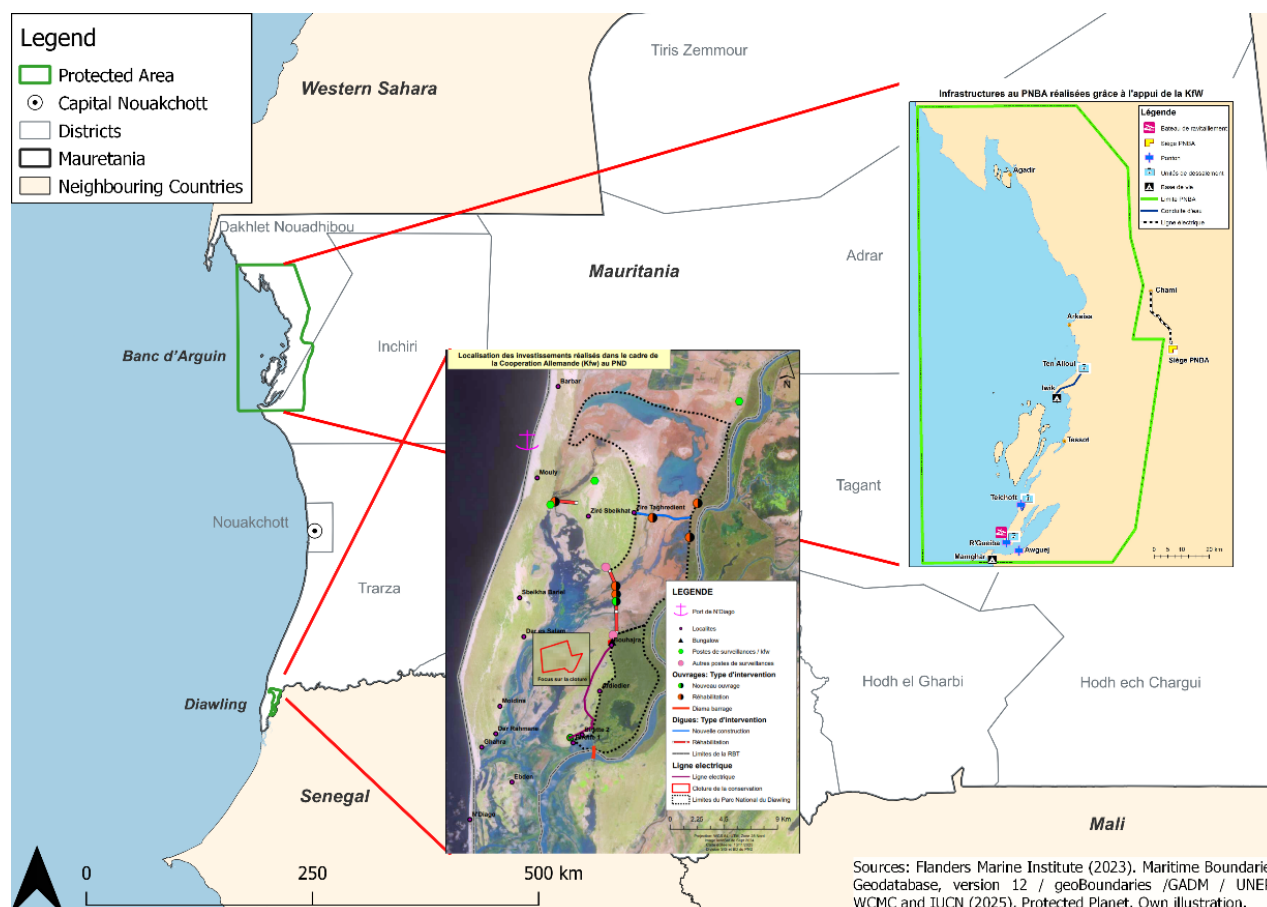


Figure 1: Map of Mauritania with detailed maps of the two protected areas receiving funding

Project-specific strengths and weaknesses of the project

The strengths include in particular:

- High relevance: Both protected areas are unique in their own way and are of outstanding importance for the conservation of biodiversity and the economy of Mauritania. Recent scientific findings on the actual extent of seagrass beds in the PNBA and increased attention to climate and species protection have further increased the relevance of the project since it was appraised.
- Complementary measures: The combination of investments in park infrastructure and the capitalisation of BACoMaB as a long-term financing mechanism makes a lot of sense conceptually and increases the effectiveness and sustainability of the measures.
- Coherent integration of the project into the overall portfolio in Mauritania: Coastal protection, fisheries monitoring, marine research and, most recently, the promotion of value chains/employment in fisheries complement each other very well. The FC portfolio promotes the protection of resources and their sustainability while addressing the drivers of over-exploitation.
- The rehabilitation of the hydraulic infrastructure in the PND was particularly relevant and successful. It is of central importance for the management of the complex flooding regime with fresh and salt water. The infrastructure is well maintained. It has a clearly positive effect on the conservation and restoration of biodiversity and the availability of natural resources for use by the local population.

The weaknesses include in particular:

- There were considerable delays in the tendering and construction phases of the infrastructure component. This led to a significant increase in consultancy costs.
- Some of the financed building infrastructure and equipment is hardly used and not maintained. Some of the rehabilitated dykes were damaged during the implementation phase by port construction work near the PND. The damage has not yet been repaired. There is therefore a considerable sustainability risk for some of the investments made.
- Although the water desalination plants are highly valued by the local population, their maintenance is a constant and cost-intensive challenge for the PNBA management. Dependence on the selected technology provider makes it difficult to procure spare parts quickly and carry out professional maintenance. Frequent outages reduce its impact on the local population and require alternative ways of bringing water to the communities.
- Expensive and, in some cases, sensitive equipment (desalination plants, solar systems, motorboat) was procured and installed, but no workshop/storage room for spare parts and repairs was provided. As a result, valuable material lies in the sand and is exposed to the harsh coastal elements.
- The original design of the hydraulic infrastructure included another weir in the north of the PND. This was not built as part of the cost-related restructuring, which in retrospect proved to be a serious mistake. Rice farmers have since cultivated fields in this region, built their own dam and prevented the water from draining away. This significantly endangers/disrupts the ecosystem functions in this area of the park and the Chat T'Boul nature reserve.
- The two infrastructure sub-components and the BACoMaB funding were designed in isolation from each other and implemented by different agencies. The project lacked a coordinating/governance framework to link these components with each other and with other park management funding (e.g. from TC). At the time of conception, there was no Ministry of the Environment that could have taken on this role. This lack of a liaison office left room for misunderstandings and conflicts.

General conclusions/lessons learned

- The combination of investments in park infrastructure and the capitalisation of a nature conservation fund is a promising approach to protected area promotion, as it covers acute investment needs while securing a permanent source of financing to cover the running costs of the protected areas.
- In addition to capitalising the endowment of a nature conservation fund, the establishment of sinking funds is also a good idea. These are spent over a certain period of time and allow the fund to react flexibly to low interest rate phases and exceptional financing needs of the beneficiaries.
- In order to increase the longevity of capital goods, it should be checked in advance whether suitable storage facilities and workshops exist for the adequate protection of sensitive parts and any repairs that may be necessary. In the case of maintenance-intensive facilities, such as drinking water treatment plants, it is advisable to use suppliers from the region/country in order to avoid long delivery times, or alternatively to purchase spare parts.

- When financing infrastructure measures in protected areas, it should be ensured that the partners have the necessary technical know-how, personnel, budget and responsibility for professional maintenance.
- If, for development policy reasons, infrastructure measures are to be constructed by national companies, this should be taken into account realistically in the scheduling and calculation of consulting costs. Experience from this and many other projects implemented in comparable contexts shows that the use of local companies often results in significantly longer tendering and construction phases than planned and budgeted.
- Information on operating costs and annual income (nominal and real) is essential for the appraisal of the efficiency and effectiveness of nature conservation funds. For reasons of transparency, the FC should request this information from the nature conservation funds it supports and include it in its own reporting.
- To ensure good management of protected areas, it is not only infrastructure and financing that are important, but also a well-trained and sustainable personnel structure, without which management activities cannot take place. This applies in particular to target group-oriented activities in the field. Incentives for this should be given greater consideration in the design of nature conservation projects.

Assessment according to OECD DAC criteria

Relevance

1. Alignment with policies and priorities

The PNBA is one of the areas with the richest bird and fish populations in the world. Together with the PND and the Chat T'Boul nature reserve, it forms an ecosystem of global importance for biodiversity. The extensive seagrass beds of the Banc d'Arguin are also important CO_2 sinks. Estimates suggest that around a quarter of Mauritania's national fish stocks originate from the Banc d'Arguin (Guénette et al., 2014). If only the fish stocks near the coast are taken into account, up to 50% originate from the PNBA. The protection and preservation of the PNBA and PND is therefore highly relevant from an economic, ecological and climate policy perspective. In view of the steadily growing importance of climate protection in general and CO_2 storage in marine ecosystems ("blue carbon") in particular, the relevance of the project is even greater today than it was at the time of the PA.

Although Mauritanian policy pays attention to environmental and resource protection, the issue is not a high priority in view of widespread poverty and major economic and social challenges. Nevertheless, the protection of the two national parks is in Mauritania's interest and important for its development opportunities. The project contributed to the implementation of the National Environmental Action Plan (PANE 2, 2012-2016) and to the achievement of the objectives of the National Poverty Reduction Strategy (2011-2015) in the areas of climate protection and biodiversity conservation. Both Mauritania's coastal protection strategy and its biodiversity strategy build heavily on the experiences gained in the supported parks and expand on them. The level of ambition and technical quality of both strategies has increased over the course of the project.

Another strategic framework is provided by the BMZ's Africa Strategy, published in 2023. Its aim is to support Africa in a "just transition", including approaches to the protection, use and restoration of ecosystems. By supporting marine protected areas and the conservation of natural resources, the project contributes to sustainable development in Mauritania and thus also to the achievement of the UN's 2030 Agenda sustainability goals, the goals of the Paris Climate Agreement and the BMZ's cross-cutting theme of climate protection. The project also directly serves German and European interests: the protection of the Mauritanian coast is important for European fishing. In addition, the PNBA is an important destination for migratory birds from the German Wadden Sea due to its central location on the so-called "East Atlantic Flyway".

2. Alignment with the needs and capacities of stakeholders and beneficiaries

The project's target group was the Mauritanian population that benefits from high government revenues from the fisheries sector, and in particular the estimated 66,000 people directly employed in Mauritania's fisheries sector and their families. In the year the project was reviewed, fishing accounted for around 25% of government revenues and 6% of GDP, according to the MV. The target group also includes the population living in and around the protected areas. The Imraguen population (approx. 2,000 people) lives within the PNBA, where they fish using traditional methods. The population in the PND and its peripheral areas lives from fishing and agriculture.

Due to the local population's high dependence on fish as a resource, measures that contribute to the protection and preservation of fishing grounds are fundamentally in their interest. However, the protective measures also mean restricting fishing activities to traditional methods (e.g. no motorboats, no fine nets) and certain species. In the wake of growing commercialisation of the trade, the Imraguen were already pushing for greater fish extraction from the ecosystem at the time of the PA. At the same time, they were and are involved in monitoring the Banc d'Arguin against external fishermen who fish illegally in the PNBA and endanger the ecological balance.

The PND is also important for the reproduction of fish stocks,² but the focus here is on restoring and preserving the ecosystem as an important refuge for migratory birds. Accordingly, resource conservation in the PND is associated with higher opportunity costs for the local population, especially since the protected areas were very well suited for rice production. Precisely because of these conflicting goals, the module proposal (MP) rightly emphasised the relevance of involving the local population in the conservation concept, but did not explain in detail how exactly this should be achieved with the help of the planned services and measures. Despite restrictions on use in both parks, the local population benefits greatly from the natural resources and has exclusive access to them.

The project envisaged the construction of administration and monitoring buildings and the expansion of the road network within the PNBA. In addition, the hydraulic infrastructure in the PND (dykes, dams, intake structures and locks) and its access routes were to be rehabilitated in order to restore and secure important ecosystem functions. At the same time, the aim was to secure the nature-based livelihoods and sources of income of the local population and improve their access to social infrastructure

² The PND could become even more economically important in this regard if the new port in N'Diogo is developed into a fishing port.

facilities. Where technically feasible, the construction work was to be carried out in a labour-intensive manner in order to create temporary income opportunities for the local population.

The project also pursued the secondary goal of promoting gender equality. The processing and marketing of fish is an important source of income for many women in the project region. In this respect, the project indirectly contributes to preserving their jobs and ensuring food security.

The infrastructure measures were implemented by the park administrations of the PNBA and PND. The measures were selected based on the needs of the two national parks. BACoMaB, the implementing agency for the capitalisation measure, was in the start-up phase at the time of the PA. The technical support provided during this critical phase and the increase in fixed assets were in its interest and of high relevance.

3. Appropriateness of design

The core problem on the Mauritanian coast is the overfishing of fishing grounds, which was threatened with further deterioration due to the increase in fishermen illegally entering the protected areas with motorised boats, as well as the insufficient funding of the protected areas. The protected areas receive annual allocations from the national budget, but these fluctuate and are insufficient to cover personnel costs, other operating costs and investments in the dilapidated infrastructure. Due to low visitor numbers, the protected areas do not generate any significant income from tourism. Furthermore, infrastructure projects (port construction and raw material extraction), increasing marine pollution from waste, wind and water erosion of the dunes, and the consequences of climate change pose a serious threat to the coastal landscape and its biodiversity.

The planned construction and rehabilitation measures in the protected areas were primarily intended to strengthen the monitoring capabilities of park staff and improve the Imraguen's access to public services. In the PNBA, the construction of a new main administration building within the park was intended to strengthen the local presence and reduce operating costs through lower transport and personnel costs.

The PND is a 'restored' ecosystem, as it existed before the construction of the Diama Dam on the Senegal River in 1986. After the dam was built, dykes and sluices were constructed along the Senegal River to simulate the original hydrology of the lower river delta and thus restore and maintain the central ecosystem functions.³ The project aimed to rehabilitate dyke systems and intake structures in need of renovation and to draw up management and maintenance plans for the rehabilitated structures in order to maintain the ecosystem characteristics.

With the technical and financial support of BACoMaB, the structural problem of insufficient funding for the operation of the PNBA and PND was to be addressed. By increasing the capital stock, the financial basis for generating capital income was to be created, which would be used to finance the operating costs of the protected areas in the long term.

The chain of effects can be described as follows: investments in monitoring, administrative and road infrastructure enable park management to carry out patrols and other protection measures (including co-management measures with local communities) more frequently and effectively and facilitate public services such as water supply and transport. The investment income from BACoMaB covers part of the operating costs.⁴ Together, these measures enable a sustainable improvement in the management of protected areas (outcome target). This preserves biodiversity and, in particular, protects fish stocks in the long term (impact target). The narrative of the impact chain is plausible, but its operationalisation in the impact matrix was incomplete and, in some cases, incorrect.

The combination of investments in infrastructure and the establishment of a long-term financing instrument is suitable for solving the core problem (overfishing due to insufficient financing of protected areas). However, the components were implemented in a rather isolated manner. In retrospect, the question arises as to whether the project could have worked even harder to promote close cooperation between PNBA, PND and BACoMaB and to clearly define the roles, tasks and obligations of the various actors. At that time, there was no Ministry of the Environment that could have taken on this role. This lack of a liaison office left room for misunderstandings and conflicts between the park administration and BACoMaB.

It should be noted critically that at the time of the appraisal, there was no concept for acquiring further funds to achieve the BACoMaB's capitalisation target. Furthermore, no details were provided on how the operating costs to be financed were precisely defined and which expenses would be covered by this. The effort and costs involved in setting up BACoMaB as an institution were also significantly underestimated, while the income prospects were overestimated (see efficiency). However, it should be noted in the project's favour that these conceptual weaknesses are common to many nature conservation funds and that, at the time of the project audit, there was no comprehensive empirical data available on the costs involved in setting up comparable funds.

³ Thanks to the infrastructure, it is possible to simulate the natural seasonal flooding regime. Between November and June, the inland plains of the PND are drained, and between July and October they are flooded.

⁴ The project documents do not specify which operating costs this should cover.

4. Adaptability – response to change

Due to unfavourable developments on the capital market, the returns achieved by BACoMaB in the first few years after its establishment fell significantly short of expectations. The same applies to further payments into the capital stock. In addition, it became apparent that the institutional development of BACoMaB is and will continue to be more time-consuming and cost-intensive than planned by PA. It also became apparent early on that the costs for infrastructure measures would be higher than planned, partly due to low supplier interest. Two increases in 2014 and 2018 totalling EUR 13.5 million were intended to cover some of the additional requirements (see efficiency).

A performance evaluation of BACoMaB also identified a number of weaknesses. To address these, an FC accompanying measure was designed to provide additional technical support to BACoMaB. This is currently still being implemented.

At the beginning of 2015, Maurisbank, based in Mauritania, had to file for insolvency. Both PNBA and PND had set up accounts there for their contingency funds. As a result, a total of approximately EUR 317,000 was lost, which was not initially reimbursed by the Mauritanian government and ultimately had a negative impact on the project budget. In 2024, the amount was finally reimbursed and benefited the protected areas.

Rating summary of relevance: **successful (2)**

The support provided to the PNBA and PND is of great importance for species and climate protection. Today, its relevance is even greater than at the time of the appraisal. The project was tailored to the needs of the relevant stakeholders. In retrospect, the combination of investment measures in the protected areas and the parallel establishment of a long-term financing instrument for the protected areas has also proven to be a sensible approach to addressing the core problems. Weaknesses in the operationalisation of the impact logic and an overly optimistic assessment of the performance development of BACoMaB reduce the relevance of the project. Overall, however, it largely meets expectations and is therefore appraised as successful

Coherence

5. Internal coherence

The BMZ country strategy for Mauritania is currently being revised. In the 2018-2024 version, which is still in force, "environmental policy, protection and sustainability in the management of natural resources" is one of three priorities of bilateral development cooperation. The project fits in well with this priority and the BMZ's core strategy of "preserving our natural resources".

The project was part of the development cooperation programme "Climate-relevant resource management in Mauritania" and was in line with its objectives.⁵ The programme comprised the FC measures "Fisheries monitoring to protect resource reproduction" and "Protection of biodiversity in coastal areas" as well as the TC measures "Natural resource management" and "Increasing capacity for adaptation to climate change in rural areas". As part of the above-mentioned FC measures, the FC has been supporting the Mauritanian authorities for many years in monitoring fishing in the Exclusive Economic Zone (EEZ) and stock monitoring, and in this context also finances investments in the PNBA, such as radar monitoring stations and the expansion of the protection fleet. The establishment and expansion of the fisheries monitoring system has created an important prerequisite for the protection and sustainability of fishery resources. This results in direct synergies with the project under consideration here. Important synergies also arose in particular in conjunction with the TC, which supported the establishment of BACoMaB, especially in the preparation of the necessary manuals for its operational activities. Furthermore, the TC supported the two national parks in the development and implementation of their development and management plans and in their eligibility for BACoMaB funding. The measure was consistent with international norms and standards, in particular the Paris Climate Agreement, the International Convention on Biological Diversity and the Global Biodiversity Framework adopted in 2022.

6. External coherence

The institutional architecture for coastal protection in Mauritania is asymmetrical for historical reasons. The PNBA reports directly to the Prime Minister, while the PND reports to the Ministry of the Environment. The Ministry of the Environment was only established after PA and, as in most countries, has a small budget and little political influence. De facto, it did not play an important role in the implementation of the project. For a long time, there was no uniform, comprehensive strategy for coastal protection. The Ministry did not coordinate the measures of various donors during the implementation phase of the project. The only noteworthy donor coordination took place via BACoMaB, whose international visibility has increased in recent years.

⁵ This was: "The preservation of biodiversity, the sustainability of resource management and their utilisation for employment promotion and food security are improved, taking into account the effects of climate change."

Germany is currently the largest bilateral donor in the environmental sector. Other important financiers are the EU, the World Bank, the AFD and the MAVA Foundation. Due to the World Heritage status of the PNBA and the biosphere reserve around the PND, there is also a close relationship between the PNBA, PND and UNESCO and IUCN. During the implementation phase, there were no signs of inconsistencies between the funding activities of the various financiers.

Of immediate relevance to the project under consideration here is the financial and technical support provided by the French development cooperation through AFD and FFEM for BACoMaB. There was also cooperation based on division of labour with the MAVA Foundation⁶, which is currently the second largest financier of BACoMaB and played a key role in its establishment and development.

In 2021, a new fisheries agreement was concluded between the EU and Mauritania, granting the EU access to Mauritanian waters with an annual catch of 287,000 tonnes.⁷ The EU pays EUR 57.5 million annually for this, as well as additional sector budget support of EUR 16.5 million over the five-year term of the agreement. Part of these funds is earmarked for the protection of marine biodiversity, research and fisheries monitoring. Both protected areas receive annual grants from the budget support. BACoMaB has also received two grants from EU funds (instead of the annual allocations envisaged in the PA), most recently in 2025. In addition, the EU supports the improvement of ocean governance, the promotion of a blue economy and the protection of marine ecosystems through the WASOP (West Africa Sustainable Ocean Programme) regional programme. Despite this support and the high relevance of the agreement for the Mauritanian budget, the EU's commitment can be appraised as ambivalent from the perspective of the project's objectives. According to the IUCN, EU fishing fleets also contribute to the problem of overfishing and thus jeopardise the ecological objectives of the project (IUCN, 2025). However, the lack of transparency in the fishing activities of other countries (including China, Turkey and Russia), most of which are not subject to any regulatory agreement, is considered even more problematic.

Rating summary of coherence: **successful (2)**

Thanks to a complementary design to the wider FC portfolio and synergies realised between TC and FC, internal coherence is high. Despite a lack of formal donor coordination on the part of the Mauritanian government, the project was coherent with the measures of other international actors. Overall, we appraise coherence as successful.

Effectiveness

7. Achievement of objectives

The objective at the outcome level was: The management of the Mauritanian protected areas PNBA and PND has been sustainably improved.

The following indicators were used to measure the outcome objective:

Indicator	Status at time of review	Target value at EPE (review)	Actual value at project completion (2022)	Actual value at EPE
(1) Implementation of management plans	No information	At least 80% of the measures specified in the management plans are implemented.	No information	PNBA: Insufficient data PND: 86% Target value partially achieved
(2) Use of the financed infrastructure in the protected areas	n.a.	Qualitative appraisal.	No information	PNBA: Only parts are used intensively. PND: High use. Target value partially achieved
(3) Functionality of the BACoMaB	Under development	BACoMaB has an appropriate governance structure and all the standard tools required for its operational work.	BACoMaB is functional.	Target value achieved

⁶ The MAVA Foundation was dissolved in 2022.

⁷ The first fisheries agreement between the EU and Mauritania was concluded in 1987.

(4) Annual support provided by BACoMaB for coastal protection measures (as a percentage of capital stock).	0 %	Support payments correspond to at least 1.4% of capital stock.	Not achieved	average annual payment of 500,000 or 1.65% of capital stock EUR between 2014 and 2024.
Target value achieved				

Table 2 : Outcome target achievement

Source: BACoMaB annual reports, PNBA and PND management plans, external evaluation of BACoMaB.

When the outcome matrix was originally designed, no indicators were formulated to measure management effectiveness. Neither the PNBA nor the PND use the Management Effectiveness Tracking Tool (METT) developed by the IUCN or comparable approaches.

Indicator 1 – Management plans: Despite its size and importance, the PNBA's data is insufficient and, in some cases, opaque. The PNBA has a current management plan for 2025 to 2029. The current plan is significantly more informative than previous plans. It contains information on changes in fauna and flora, as well as a detailed list of planned activities for the years 2025-29 and associated budget estimates. Previous plans, on the other hand, contained neither meaningful data on costs and financing nor on activities and achieved effects. Thus, they allow little conclusion to be drawn about the development of management effectiveness over time.⁸ Accordingly, the achievement of indicator 1 for the PNBA cannot be quantified. In its current status report on World Heritage sites, the IUCN makes an appraisal of the PNBA's conservation and management efforts as satisfactory ("some concern") (IUCN, 2025). The IUCN sees strengths in the legislative, institutional and financial framework of the PNBA. However, the IUCN expresses serious concern about the increasingly commercial fishing within the PNBA, the violation of existing rules on fishing techniques and the hunting of sharks and rays, as well as the greatly increased threat outside the park from overfishing, oil extraction, gold mining and the construction of further infrastructure (see sustainability). One of the PNBA's strengths remains its "surveillance participative" approach – the involvement of the Imraguen in monitoring fishing activities as part of the protected area management. However, local communities have recently expressed dissatisfaction with the lack of tangible benefits from park management and the precarious health care situation in the park (IUCN, 2025). Several parties have criticised the lack of/decline in co-governance activities with the local population, which would allow goals, usage rules, restrictions and privileges to be kept alive and also agreed upon with younger fishermen coming of age.

The PND has a current management plan for the period 2023-27, which sets out the strategic priorities and associated activities as well as the required budgets for the coming years (PND, 2022). The plan includes a transparent appraisal of the implementation of the previous management plan. The main focus of management activities is on the proper operation and maintenance of the hydraulic infrastructure, which is central to maintaining the ecosystem, followed by measures in the area of protection management. In the period 2018-22, 36 of the 80 planned measures were fully implemented and 33 were partially implemented. Taking into account the partially implemented measures, this would result in an implementation rate of 86%. Overall, in the opinion of the evaluation team, the PND has achieved a remarkable consolidation and professionalisation of protected area management, with good and transparent documentation of its activities.

The achievement of the target for **indicator 2** is discussed in section 8 (Contribution to the achievement of objectives).

Indicators 3 and 4 – Functionality and disbursements of the BACoMaB:⁹ An external evaluation conducted in 2021 on behalf of French development cooperation certifies that the BACoMaB has a functional governance structure that complies with international standards for nature conservation funds (Landreau, 2021). According to the evaluation, it has the standard instruments (administrative, accounting and distribution procedures, business plan, annual work plans and budgets, investment strategy and a strategic plan) necessary for its operational work (ibid.).¹⁰ Indicator 4 is therefore considered to be fulfilled. Existing deficits and potential for improvement were identified in an FC-funded organisational and performance audit and are being addressed in the accompanying measures currently underway.

BACoMaB's assets are invested on the capital market and generate income that is used to fulfil its objectives (preserving biodiversity), cover administrative costs and build up reserves. The investment strategy has been adjusted several times in recent years to reflect the current capital market situation. Like many nature conservation funds, BACoMaB pursued a conservative investment strategy in order to secure the preservation of its (nominal) capital stock while at the same time realising moderate return opportunities. The nominal return achieved in the period 2012-2024 averaged 2.66%, while the real return was 0.5%.¹¹

⁸ Although PNBA has been collecting data on 21 indicators in the areas of "protection of natural heritage", "socio-economic development" and "administration" since 2016, these are not publicly available and were not made available to the evaluation team. There are no synthesis reports providing a comprehensive picture of the development of these indicators.

⁹ Unfortunately, no time series data are available for the coverage ratio of the operating costs of the protected areas.

¹⁰ Annual reports and further information are published by BACoMaB on its website (<https://bacomab.org/>).

¹¹ The return figures were taken from the annual reports for 2024, 2023, 2022, 2021 and 2020 (overview for the period 2012-2020). The average values were significantly higher before the start of the Covid-19 pandemic and the outbreak of war in Ukraine (nominal 3.65%, real 2.57%). In 2022, BACoMaB lost 10% of its nominal value. The real loss was as high as 18.4%.

The evaluation team does not have comprehensive comparative data from other perpetual environmental funds for this period. However, comparisons are possible for the period 2013-18 at least. The average real return of 29 environmental funds was 1.4% (CFA, 2020), while that of BACoMaB was 2.01%. BACoMaB has therefore performed above average in international comparison at times. Due to a lack of available comparative data, it is not possible to make statements about the relative performance over the last six years.

Since 2014, BACoMaB has been using its generated income to finance measures to protect and conserve biodiversity on the Mauritanian coast. Since then, BACoMaB has paid out an average of EUR 0.5 million per year, or a cumulative total of EUR 5.49 million, to the PNBA, PND and other actors (see Figure 2). With a total of EUR 3.42 million, the majority of the funds went to the PNBA. A further EUR 1.45 million went to the PND. With growing capital stock, annual disbursements have also increased over the last few years. The annual disbursement amount corresponded to an average of 1.65% of the capital stock and was thus above the ex-post target. In the period 2018-2022, BACoMaB grants accounted for approximately 23% of the PND's total expenditure (PND, 2023). For the PNBA, the average contribution of BACoMaB subsidies to the budget was 23.5% in the period 2021-2024. BACoMaB uses the grants to support surveillance, maintenance, monitoring and training measures in the parks, as well as extraordinary activities that serve to protect them (e.g. large-scale waste collection campaigns involving the local population).¹² BACoMaB thus contributes directly to the achievement of the module's objectives.

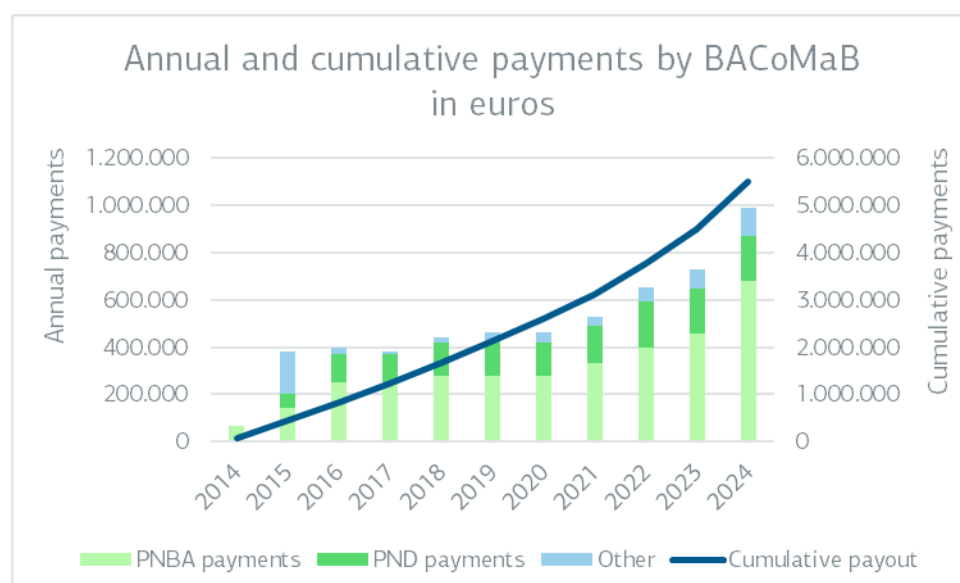


Figure 2: Annual payments and cumulative payments by BACoMaB in euros.

Source: Own illustration based on the annual reports of the BACoMaB.

8. Contribution to the achievement of objectives

The project consisted of two components: 1) direct investments in the infrastructure of the PNBA and PND, and 2) the capitalisation of the BACoMaB.

The construction measures planned by MP in the two national parks were only partially implemented. However, unlike what was planned in MV, direct participation by the population in the construction of the infrastructure was not possible in either park for technical reasons. Of the planned park buildings in the PNBA, the two main bases ("bases de vie") within the park, Mamghar and Iwik, and the new main administration building in Chami were built. In addition, seawater desalination plants and the associated power supply, water towers, distribution points and a pipeline to supply four Imraugen villages and the bases with fresh water were rehabilitated (Ten Alloul) and constructed (R'Gueiba, Teichott). The renovation of surveillance and control posts and the construction of a research station could not be financed for cost reasons. The new headquarters is hardly used, appears oversized and is not very functional. The operating cost savings hoped for by MP through the relocation of the headquarters could not be realised. However, with the help of a few adjustments (more bedrooms instead of offices, vehicle workshop, storage space for equipment), the evaluation team believes that the facility could be converted into a well-used logistical base. The two bases that have been built, on the other hand, are well used by protected area staff, scientists and visitors. The same applies to the plastic pontoons/boat moorings that have been purchased, which are used and maintained by the local population and protected area staff. Another positive aspect is the electrification of the main building and the surveillance posts through

¹² The BACoMaB's annual reports provide transparent information on funding volumes, funding recipients and funding activities. They are available online at: <https://bacomab.org/ressources/rapports-annuels/> [Last accessed on 04.11.2025].

connection to the power grid and the replacement of diesel generators with solar panels. These investments increase work capacity and save energy costs. Overall, the infrastructure measures have made a positive but not decisive contribution to the management of the PNBA protected area by improving the working conditions of the protected area staff.

The drinking water measures taken in the PNBA have contributed to a selective improvement in local living conditions. However, the maintenance of the water desalination plants represents a continuous and cost-intensive challenge for the park administration, which is difficult to overcome despite intensive efforts and leads to interruptions in the water supply that sometimes last for weeks. Dependence on a (European) supplier makes it difficult to procure spare parts quickly and provide professional maintenance for the water desalination plants. Frequent breakdowns of the plants reduce their effectiveness for the local population (e.g. in fish processing by women) and put pressure on the protected area management to find alternative ways (e.g. overland) to supply water to the communities. This causes additional effort, costs and loss of time, which are then lacking for the actual management of the protected area.

For technical reasons, it was not possible to build access roads to the most remote villages in the PNBA. Instead, a motorboat was purchased to establish a sea connection between previously unconnected villages. However, the boat was hardly ever used and is now no longer operational due to a lack of maintenance and improper storage of the engines. The concept of financing the boat's operating costs through user fees did not work out; an alternative model (operation by the villagers) was not tested.

In the PND, the hydraulic engineering infrastructure and its access routes were rehabilitated in particular. Specifically, dykes and access routes in Bell, Ziré and Lekser and the inlet structures in Bell, Berbar, Lekser, Cheyal and Leme were renovated and several sluice gates were replaced. The dyke construction measures in the PND now enable year-round access to the villages and improved sales opportunities for fishery products. To improve the hydraulics, a new weir (Bell Sud) with shut-off valves and two small access channels for flooding and draining the Bell basin was also constructed. To ensure the sustainability of the facilities' operation, an IT management tool was developed and maintenance and management plans were drawn up. In addition, small-scale construction measures to expand the park infrastructure (construction and furnishing of a bungalow with five rooms and a sanitary building, renovation of roofs, power supply) and three observation posts were financed. The originally planned construction of an additional weir (Hassi Baba) in the north of the PND, which regulates the hydraulic connection and water drainage between the Diawling-Tichilitt lagoon and the Chat Tboul protected area, was not realised for cost reasons. This had more serious consequences than could have been foreseen at the time of the decision. Rice farmers have since planted fields in this region, built their own dam and prevented the water from draining away. As a result, this part of the park is particularly threatened.

The rehabilitation of the hydraulic infrastructure in the PND was important for managing the complex freshwater and saltwater flooding regime in the various lagoons and is being maintained well and according to plan. The local population in the PND also benefits from the hydraulic engineering investments that have been made (see Impact). Overall, the infrastructure is very robust. However, two sluices on the road to Senegal suffer from traffic vibrations. At the Lemar inlet structure, it is no longer possible to close the lock gate completely, which limits its functionality. There is also significant damage to the dyke connecting the road to the dune island and the coast. From 2019 to 2023, it was subjected to extreme stress as many heavily loaded trucks transported construction materials for the new port N'Diogo. Between 2012 and 2017, FC support accounted for 60% of the PND's total expenditure (PND, 2022). This also underlines the relevance of the project for protected area management in the PND.

Promoting gender equality was a secondary objective of the project. In both protected areas, some of the women earn their living from processing the fish caught (drying fish and fish roe/bottarga). In principle, both women and men benefit from the improved drinking water and electricity supply in the PNBA and the improved transport options in the PND. However, discussions on site revealed that the economic situation of women in the PNBA is currently deteriorating after 15 years of support. This is partly because men do not give them enough fish (they earn more by selling it outside the area) and partly because the water supply is not reliable enough for proper processing. In the PND, too, the women interviewed complained that the men did not leave them any fish to dry or sold them at too high a price. At the same time, women there are benefiting from the intensification of vegetable cultivation and an expansion of the areas under cultivation for water lilies and *Sporobolus* (weaving material for baskets and mats).

The FC funds earmarked for BACoMaB were paid into the land fund as planned and are to be maintained on a permanent basis. By December 2024, a total of EUR 38.6 million had been paid into the capital stock; the nominal value of the fund's assets was EUR 40.9 million. This meant that the nominal value of the endowments/payments could be maintained, but not the real value.¹³

The FC provided EUR 15.2 million, or 39% of the capital stock, making it the largest financier of the BACoMaB. The current capital stock exceeds the target of EUR 35 million set during the project review, but is still well below the current capitalisation target of around EUR 60 million, which has been adjusted in the meantime.¹⁴ BACoMaB is fully operational and has been meeting

¹³ The BACoMaB's annual reports do not contain any information on the development of the real value of the capital stock. Since the average inflation rate in the euro area – which is used as a reference value by the BACoMaB – was 2.19% between 2012 and 2024, it can be stated without exact calculation that the real value was not maintained.

¹⁴ The adjustments were made as a result of low return opportunities in the 2010s and growing inflation in recent years.

its objectives since 2014. The project has played a key role in this through its support services during the start-up phase. At the same time, the results of an organisational audit conducted in 2021 show that there is still significant room for improvement at BACoMaB, particularly with regard to financial performance and fundraising, strategic management and its visibility in the public debate on environmental and nature conservation issues. BACoMaB has therefore taken the initiative to engage a professional financial advisor. Other recommendations are being addressed as part of the ongoing FC accompanying measure.

9. Quality of implementation

The infrastructure measures were implemented with considerable delay (see efficiency). The condition, quality and functionality of the construction measures and goods purchased were assessed as satisfactory during the respective final inspections. At the time of the evaluation, the damage to the dyke in the PND as a result of the port construction had not yet been repaired. Despite promises to the contrary, the Mauritanian government has not yet provided the funds for this. At the same time, however, repairs only make sense once the bypass road to the port has been completed. The fact that the dyke is still standing and usable despite the high load and damage is testament to the good quality of the original construction. The building infrastructure is not being maintained, or only inadequately so, and was only partially in a satisfactory condition at the time of the EPE.

The tense relationship between BACoMaB and PNBA posed a challenge. PNBA is the larger, better known and more important protected area in Mauritania and reports directly to the Prime Minister. The park management claims exclusive or at least privileged access to BACoMaB funds, partly because BACoMaB bears the name Banc d'Arguin. This regularly leads to conflicts between BACoMaB and PNBA. The PNBA is bothered by the annual application process with qualification criteria and accountability, as well as by the fact that BACoMaB uses Banc d'Arguin to promote visibility and attract funds. In addition, the park management complains that the establishment of BACoMaB has caused external donors to withdraw from direct financing of BACoMaB. A clearer clarification of the roles and responsibilities of the individual actors could probably have reduced the potential for conflict.

The illustration of the performance of the implementation consultants by PNBA and PND showed them to be positive, and the good quality of the buildings, dykes and hydraulic works was attributed to their good design and construction supervision. The decision-making process for adjustments during implementation was also described as positive.

10. Unintended effects (positive or negative)

The PNBA park management suspects that BACoMaB funding is coming at the expense of the PNBA. The fear is that other donors will reduce their direct support for the PNBA in view of the prospect of continued support from BACoMaB. The evaluation team did not have access to concrete data that could indicate such "crowding-out effects".¹⁵ At the very least, however, concerns that the Mauritanian government might withdraw from or reduce its commitment to financing protected areas as a result of BACoMaB's increased involvement have not been confirmed.

It cannot be ruled out that the dyke construction in the PND, which is necessary to maintain the hydrological system, may have inadvertently promoted the construction of the port in N'Diogo and the traffic routing to the port. The port would have been built even without the rehabilitation measures, but possibly not so quickly and with a different traffic routing that would have had less impact on the ecosystem.

As both cases involve possible but unprovable negative unintended effects, they do not affect the appraisal of development policy effectiveness.

Rating summary of effectiveness: **moderately successful (3)**

The module objective was partially achieved. Despite remaining shortcomings, PND has seen a professionalisation of protected area management. Investments in hydraulic infrastructure there are of great importance for the park's protective function. The PNBA is fulfilling its central management tasks. Problems that already existed at PA did not improve during the project period. In both parks, the local population benefits from the investment measures. The effectiveness of the infrastructure component is impaired by unresolved damage to the dykes in the PND and the low utilisation rate of some buildings/purchases in the PNBA. Despite some room for improvement, the BACoMaB is functional and has developed into an important and sustainable source of funding for the PNBA and PND. The project has played a significant role in this. Overall, the effectiveness is rated as limited success.

¹⁵ Even with good data, such displacement effects could hardly be clearly proven due to a lack of comparison ("what would have happened without BACoMaB").

Efficiency

11. Production efficiency

The total budget for the project, including the two increases in 2014 (EUR 10 million) and 2018 (EUR 3.5 million), was EUR 25.5 million. With the exception of a four-digit residual amount, the funds were paid out in full.

At EUR 15.8 million, 60.5% of the budget was allocated to capitalisation (EUR 15.2 million) and financial support for institutional development (EUR 0.6 million) of BACoMaB. At the time of the EPE, no detailed information was available on the costs and financing of BACoMaB's capacity building, as the capitalisation component, including capacity building, had not yet been formally completed and was not part of the PCR. At PA in 2011, the total funds required for institutional support for BACoMaB were estimated at EUR 775,000, of which EUR 300,000 was financed by the FC project for consulting services and the remainder was provided by German TC and the MAVA Foundation. In 2014, the necessary costs were revised upwards to EUR 1.5 million, of which the FC financed EUR 600,000 (financing of ongoing operating costs). BACoMaB currently receives further institutional support of EUR 2 million as part of an FC accompanying measure. Overall, the costs for the institutional development of BACoMaB are thus significantly higher than the original target values at PA. BACoMaB is not an isolated case: experience from the establishment processes of other nature conservation funds with FC participation and from the specialist literature shows that the duration and costs of the establishment process are sometimes subject to considerable planning uncertainties and often require adjustments (Doinjashvili et al., 2020). Despite a considerable deviation between target and actual costs, the costs for establishing BACoMaB are still within budget.¹⁶

Neither the FC project reports nor the BACoMaB annual reports provide detailed information on the operating cost ratio¹⁷. The operating costs (coûts de fonctionnement) reported by BACoMaB also include some expenses for project management and small projects (e.g. stand cleaning campaigns), which are not operating costs in the strict sense, while at the same time some items are included under "Other expenses" (e.g. costs for audits) that should be classified as operating costs. Therefore, based on the available data, the operating cost ratio for recent years cannot be clearly determined.¹⁸ According to an external evaluation of BACoMaB commissioned by the French EZ, it stood at 29% in 2019 and had fallen continuously since its inception (Landreau, 2021). This meant that the operating cost ratio at that time was higher than for other nature conservation funds in sub-Saharan Africa (de Abreu et al. 2022). According to FC internal guidelines, administrative cost ratios between 25% and 35% are considered high but "still reasonable". Since 2019, not only have BACoMaB's capital stock and absolute returns increased, but so have its costs. The 2011 MP set a long-term target of operating costs amounting to 10-20% of the *return on capital*. This target has not yet been achieved and only appears realistic if there are further significant increases in the fund's assets in the coming years.

Around 39.5% of the costs went towards infrastructure measures in PNBA and PND and the associated consulting costs. Due to overly optimistic planning at PA, lengthy tendering procedures, low market interest and quality problems with the construction work, the actual costs for the investment component were EUR 2.56 million higher than planned; but were below the target values adjusted in 2016. The main cost drivers were significant increases in consulting costs, which at EUR 2.96 million were 240% higher than estimated for PA and accounted for around 29% of the costs for the investment component. The higher costs, combined with a lower scope of services and damage to the renovated dykes in PND that has not yet been repaired (see effectiveness), reduce production efficiency.

Another critical point is that the actual contribution made by the Mauritanian government, at EUR 0.57 million, was only just under 50% of the agreed amount. Despite detailed maintenance plans, the agreed maintenance measures are not carried out regularly, which significantly reduces the value and half-life of the infrastructure supported.

12. Allocation efficiency

No alternatives to the chosen approach were examined in the PA. Based on the available information, it is not possible to make a sound assessment of whether a different approach could have achieved greater impact. It is possible that a different allocation of funds between the agencies within the approach would have had a greater impact, for example if the weir in the north of the PND had been implemented in favour of lower expenditure on the construction of buildings or the capitalisation of the BACoMaB. In view of the negative development of interest rates and thus the potential returns in the 2010s, the question arises in retrospect whether it would have made more sense to pay part of the capital into a consumption fund or the sinking fund. Sinking fund resources are consumed over time and allow for more flexible and higher payouts for activities in line with the objectives during this phase.

¹⁶ A cross-sectional study based on data from 89 nature conservation funds estimates the average start-up costs of nature conservation funds at approximately USD 5 million.

¹⁷ The operating or administrative cost ratio shows the share of the nature conservation fund's operating costs in its total expenditure and is a typical measure of efficiency.

¹⁸ Depending on which expenditure items are used as the basis for the calculation, operating costs in 2024 ranged between 16% and 35% of total costs.

In absolute terms, the FC funds appear to be a sensible investment: a scientific study estimates the value of important ecosystem services, such as fish stock reproduction and CO₂ sequestration in the PNBA, at EUR 75–80 million per year (Trégarot et al., 2018).

Rating summary of efficiency: **moderately successful (3)**

Higher costs and a lower scope of services impair the production efficiency of the infrastructure component. The institutional development of BACoMaB was significantly more expensive than expected, but the costs were still within budget. Production efficiency is assessed as still limited success. It is not possible to say with certainty whether higher impacts could have been achieved through alternative use of funds. Allocation efficiency is therefore given only low weight in the appraisal of efficiency.

Impact

13. Overarching developmental changes

The impact-level objective was to preserve biodiversity in the PNBA and PND protected areas.

The following indicators were used to measure the impact objective.

Indicator	Status at time of review	Target value at EPE (review)	Actual value at PCR	Actual value at EPE
(1) Number of birds overwintering in the protected areas	PNBA: approx. 851.000 PND: approx. 194.000 (average value from 2010 and 2012 respectively)	PNBA and PND: at least stabilisation of population size (at EPE)	PNBA: approx. 787.000 PND: approx. 178.000 (average value from 2019 and 2021 respectively)	PNBA: approx. 1.130.000 PND: approx. 162.000 (average value from 2022 to 2024) Target value partially achieved
(2) Diversity of birds wintering in the PND	110 (average value from 2010-12)	Biodiversity remains stable (approx. 110 species)	106 (average value from 2019 and 2021)	113 Target value achieved
(3) Area of intact seagrass beds in PNBA in km ²	420 km ²	Area remains stable (420 km ²)	420 km ²	>2,700 km ² Target value achieved
(4) Development of catch volume in PND (in tonnes per year)	109 tonnes per year (average value from 2010-2012)	Catch remains stable (approx. 109 tonnes)	178 tonnes per year (average value from 2019 to 2021)	121 tonnes per year (average value from 2022 to 2024) Target value achieved

Table 3 : Impact target achievement

Source: Indicator 1 (annual reports of the PND and PNBA), indicators 2 and 4 (annual reports and management plans of the PND), indicator 3 (PCR, scientific studies)

Indicator 1: Both protected areas are important refuges for migratory birds. Different data sources are available on population size trends. The results of a long-term study show that the bird population in Banc d'Arguin has declined from approximately 2.4 million in 1980 to approximately 1.8 million in 2017 (Oudman et al., 2020).¹⁹ Data from the Banc d'Arguin park administration covering the period before, during and after the implementation of the project (2007-2024) show a positive trend. However, the annual figures are subject to considerable fluctuations. In 2022-24, the average population size was approximately 1.13 million birds, which is higher than in the reference period of 2010-12. For the PND and the adjacent wetlands of Chatt Boul and Djoudj²⁰, on the other hand, a slight downward trend can be observed (see Figure 4). Here, too, there are considerable fluctuations between years. While a positive trend emerged between the start of the project and the construction phase (2011-18), there has been a fairly sharp, temporary decline in population sizes since 2018. The reports do not cite any reasons for the downward trend. The park administration sees the main reasons as being disturbance caused by heavy traffic on the main dyke and construction work at the port of N'Diogo.

¹⁹ The study is based on data from seven bird counts conducted in the PNBA between 1980 and 2017 using comparable survey methods.

²⁰ Together, these wetlands form the XY Biosphere Reserve, which exists only on paper. Data is only available at this level.

Indicator 2: With regard to bird species diversity, the evaluation team did not have any time series data for the PNBA. However, Oudman et al. (2020) report a significant change in the composition of bird species there over the past 40 years: Bird species that find their food in the tidal zone covered by seagrass beds are in decline, while the population sizes of species that depend on fish and crustaceans in the sublittoral and offshore zones are tending to increase. In the PND, the number of bird species observed remained fairly constant over the period 2006-24, mostly exceeding 100 different species.

Overall, scientific studies on the development of bird and fish populations in the Banc d'Arguin suggest that the ecosystem is undergoing a process of change, partly as a result of climate change. Population sizes have declined significantly over the past 40 years and the species composition has also changed considerably. Shark stocks have declined sharply after years of overfishing, and it is unclear whether stocks will recover. As sharks are at the top of the food chain, this could alter the functioning of the ecosystem (Lenrabort et al., 2024).

Indicator 3: Seagrass beds are of great ecological importance in marine ecosystems. They provide habitat, shelter and food sources for marine organisms and promote species diversity. At the same time, they bind large amounts of carbon in the sediment and stabilise the seabed with their dense root system. No monitoring data from the project executing agency on the development of seagrass areas in the PNBA is available. However, scientific studies show that the extent of seagrass beds has long been underestimated and is significantly higher than the baseline value specified in the PA. El-Hacen et al. (2020) report a significant increase in the vegetation density of seagrass areas between 1986 and 2014 based on satellite images. Recent studies have also shown that there are almost 2,379 km² of seagrass beds in the subtidal zone (i.e. the coastal area below the lowest tide level and thus permanently under water) of the PNBA (El-Hacen et al., 2024). Together with the seagrass area in the tidal zone (350-400 km²), the current seagrass area covers more than 2,700 km².

Several hundred hectares of mangrove forests grow in the PND. Since 2010, there has been an increase in the mangrove area at the river delta in the southern part of the park. This can be attributed to small-scale restoration measures and natural regeneration.

Indicator 4: As only traditional fishing methods are used in the PND, catch volumes allow conclusions to be drawn about the state of the ecosystem. They also provide information about the economic benefits that park residents derive from natural resources. According to the PND, approximately 125 people fish in the PND (PND, 2024). The fishing season typically runs from November to April. At 121 tonnes, the average catch over the last three years was higher than in the same period before the measures began. Comparable data for the PNBA is not available.

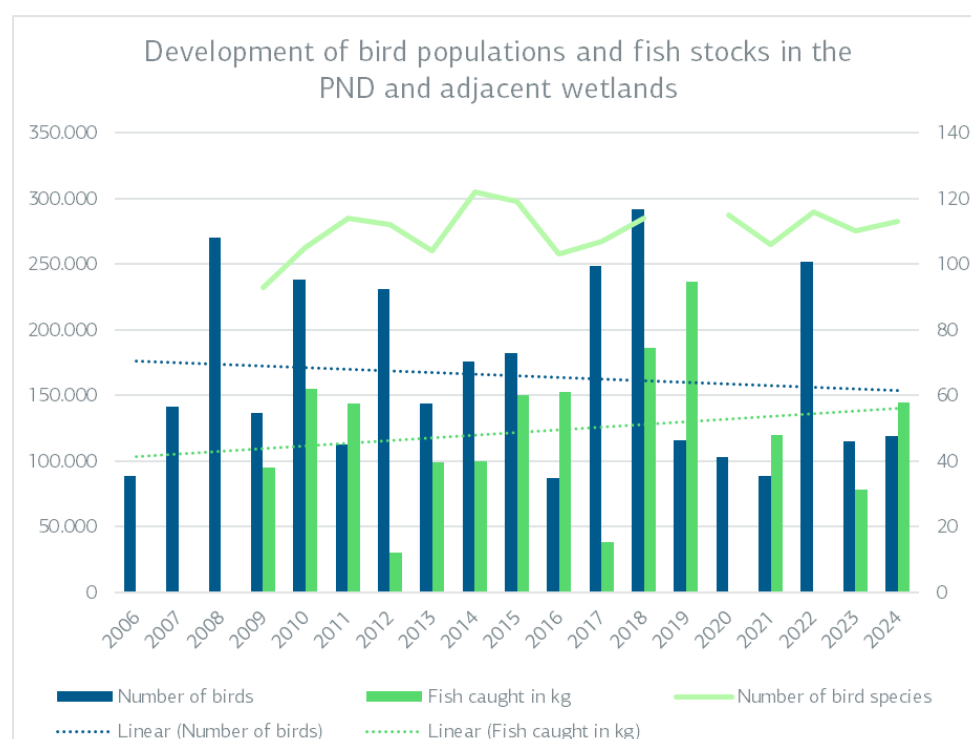


Figure 2: Development of bird population sizes, fish catches (in kg) and number of bird species in PND and the adjacent wetlands.
Source: Own illustration based on the PND's annual reports and management plans.

14. Contribution to overarching intended developmental changes

The development of fish and bird stocks and the general condition of coastal ecosystems in Mauritania depend on a variety of factors, many of which could not be influenced by the project, or only to a minor extent. It is not possible to provide direct evidence of the impact of the infrastructure measures in the PNBA and the capitalisation or subsidies provided by BACoMaB. These measures were probably not the main reason for the stabilisation of bird populations in the PNBA over the last 15 years. However, it seems plausible that the construction of surveillance bases and the financing of patrol measures and other protection and management activities from BACoMaB funds have at least made a positive contribution to this.

For the PND, on the other hand, a direct link can be established between the rehabilitation measures for the hydrological system – and thus the project measures – and the maintenance of the ecosystem. The irrigation of the floodplains in Diawling is essential for the functioning of the ecosystem and is artificially ensured by the hydraulic system. The rehabilitation of the hydraulic structures enables a significantly better water supply to the lagoons/basins, which has a positive effect on the growth of fish stocks and flora. Despite the decline in bird population sizes, particularly in the last six years, we therefore assume that the support services for the PND have contributed positively to the achievement of the objectives. One possible explanation for the population decline is the port construction activities and the associated increase in traffic on the dyke and in the north-west of the park.

The hydraulic engineering measures have also led to an improvement in income opportunities. Fish gather at the rehabilitated weirs, to which the residents have exclusive access. The lakes/basins at the weirs/locks enable women to collect nutritious water lilies, acacia pods and other natural resources for their own use and to earn a small additional income. The functioning flood regime also enables vegetable cultivation in the villages, which is only possible because the seasonal inflow of salt water is successfully prevented.

Nature conservation funds such as BACoMaB can have an impact in terms of their objectives (preserving biodiversity) not only through their actual funding activities, but also through their investments on the capital market. BACoMaB takes environmental, social and governance (ESG) aspects into account in its capital investments and excludes investments in certain assets, such as companies with environmentally harmful practices (negative screening).

15. Contribution to overarching unintended developmental changes

The consultants' final reports contain no references to environmental or social problems during the construction and early operational phases of the financed infrastructure. During the field trip, discussions with various stakeholders also revealed no evidence of unintended effects (positive or negative) of the project measures.

Rating summary of impact: **successful (2)**

Over a long observation period of more than 40 years, there is clear evidence of a decline in bird and fish populations in the coastal region of Mauritania and a change in species composition. Data for the last 15 years indicate that the bird population in the PNBA has remained stable, albeit with considerable fluctuations between years. The same applies to bird species diversity in the PND. Given the multitude of different threats, this can be considered a success. It seems plausible that the project has contributed to this stabilisation. The impact is still appraised as successful.

Sustainability

16. Capacities of beneficiaries and stakeholders

The Imraguen (PNBA) and the population within and bordering the PND have limited rights to use the resources, but at the same time have exclusive access to the fishery resources. Overall, the living conditions of the people are precarious, especially in the PNBA. The governance of local fishing activities in the PNBA is fragile: for example, prohibited tools are increasingly being used again and protected species are being hunted. In addition, the commercialisation of fishing is progressing under a broadly interpreted agreement for personal use, with most of the profits going to the city and not to the local population. The economic activities of women (dried fish, dried fish roe) are increasingly being displaced by the direct sale of fish by men.

Despite major challenges, PND is able to fulfil its protection and management functions. The annual cost of implementing the current management plan is estimated at EUR 1.19 million (PND, 2022). High staff turnover is a challenge. The PND has motivated and capable staff, but the remoteness of the workplace, lack of accommodation for families in the park, strenuous working conditions with a high level of bureaucracy and low pay lead to high staff turnover.²¹ This affects the continuity of management quality.

²¹ Unlike the PNBA, the PND has not established a stage model (two weeks in the field/one week at home) or a similar approach. As a result, employees are isolated from their families for long periods of time, making it difficult to start a family.

The PNBA is succeeding in maintaining its protective function. However, impressions on site and reports from various interlocutors during the evaluation mission at the end of 2024 suggested that the quality of administration and management has not improved over the last few years. The PNBA has significant shortcomings in the areas of reporting, transparency, accountability and communication. Added to this is a growing threat from overfishing, dissatisfaction among the Imraguen with inadequate health infrastructure and declining Imraguen involvement in co-management, endangered value chains and staff shortages. Many PNBA employees are approaching retirement age and, for reasons similar to those at the PND, it is proving difficult to recruit young professionals.

BACoMaB has a functioning governance structure and has been fulfilling its intended tasks since 2014. Its current assets are below its self-imposed target and the FC's internal benchmark of EUR 50 million. So far, BACoMaB has not yet succeeded in finding significant new donors.²²

17. Contribution to supporting sustainable capacities

The project has contributed to improving local living conditions without being able to change them substantially (see effectiveness and Impact). It has also made an important contribution to capacity building at the PND and to preserving the park's ecosystem. In the meantime, the PND has been drawing a large part of its budget from funds from the project. At the same time, the annual support payments from BACoMaB make up a significant part of the income of the PND and also of the PNBA. Without the FC's involvement, these contributions would be significantly lower.

The FC is currently the largest donor to BACoMaB and, in addition to capitalisation, has also made an important contribution to its institutional development. The existing institutional and operational deficits are to be addressed as part of the ongoing FC accompanying measure. The associated consultant assignment began in November 2024.

18. Durability of impacts over time

The IUCN regularly monitors the conservation status of World Heritage sites, including the Banc d'Arguin. In its latest report from 2025, the IUCN assesses the status of the PNBA as "significant concern" – the third highest of a total of four threat levels (IUCN, 2025). According to the report, the greatest threats include overfishing inside and outside the park, gas extraction near the park, the consequences of climate change (sea level rise, ocean acidification, extreme temperatures) and water and air pollution from gold processing near the coast (IUCN, 2025).

At the maritime border between Senegal and Mauritania, British Petrol (BP) and its partners are developing a gas field 120 km off the coast as part of the Greater Tortue Ahmeyim Project (GTA). In March 2025, BP announced that underwater gas bubbles had been discovered during drilling.²³ Although the gas leak was quickly brought under control, it highlights the environmental risks associated with gas production. Further new investments in non-renewable energy production and other infrastructure projects near the coast are planned and pose an additional threat to nature.

The most acute threats to the PND include the expansion of the port in N'Diogo, the expansion of rice cultivation and the spread of the invasive plant species cattail (Typha).²⁴ So far, the port has no economic significance, but this is likely to change in the medium term. During the construction of the port, the dune barrier in the north of the park was breached and fresh seawater entered the upper lagoon, with serious ecological and economic consequences for vegetable farmers. The construction company quickly repaired the breach, but the risk of further breaches remains in the fragile dune coast. With the expected influx of population, pressure on land use, waste pollution and traffic volume on access roads will increase. So far, the Mauritanian government has not complied with Germany's demand to repair the damage to the dykes. However, this is to be done once the construction of the separate access road has been completed and the dykes are no longer needed as transport routes for the port construction.

An expansion of the PND beyond the area of the biosphere reserve, which would make sense from an ecological point of view, does not seem very promising at present for political and economic reasons. The PND staff are trying to protect the territory of the biosphere reserve in addition to the park, but they have neither the human and financial resources nor a clear mandate to do so.

The picture is mixed when it comes to the durability of the financed infrastructure. According to the park administration, the PND's hydraulic engineering infrastructure, which is particularly important for species conservation, is mostly in good condition – its maintenance and repair are treated as a priority (PND, 2022). However, the maintenance of the building infrastructure is inadequate in both protected areas. Repairs are carried out on an ad hoc basis and are curative at best, rather than preventive. There is a lack of sufficient budget, qualified personnel and clearly defined responsibilities and accountability. Some other donor-

²² Shortly before the evaluation was completed, it became known that the AFD will finance further capitalisation of BACoMaB and that the EU will also contribute another EUR 1 million from sector budget support to BACoMaB.

²³ Source: <https://de.oedigital.com/news/st%C3%B6%C3%9Ft-beim-gta-projekt-senegal-mauretanien-auf-301547> [Accessed on 25 September 2025]

²⁴ The spread of Typha in the Senegal Delta is leading to siltation and reduced water flow, as well as the displacement of endemic species. An FC project/programme currently in preparation will address this problem.

funded buildings are now in ruins and barely usable due to lack of maintenance. The drinking water infrastructure built in the PNBA requires intensive maintenance. Spare parts are not available in the country and must be procured in Europe at great expense and with considerable time expenditure. This impairs the long-term usability of the infrastructure.

Despite some remaining weaknesses, the development of BACoMaB is a positive highlight. BACoMaB now has the institutional maturity and necessary capital resources to establish itself as a key player in natural resource conservation in the long term. With its capital stock, it will continue to be able to provide regular financial support to the protected areas in the future. The institutional sustainability of the BACoMaB is structurally anchored in its chosen legal form. As an environmental fund, the BACoMaB offers permanent financing for the PNBA and PND, as well as any future SG, that is largely independent of political decision-makers. However, the reliability of the support services depends on developments on the capital market. Long periods of low interest rates impair BACoMaB's ability to support PNBA and PND with significant contributions. Last year, the return achieved was above target at over 5%. In the past, however, there have been both periods of low returns and years with negative returns. The planned establishment of a consumption fund, financed by French development cooperation funds, seems to guarantee the desired stability in the level of funding for the coming years.

The future relevance of BACoMaB will also depend on whether it succeeds in acquiring further funds and gaining greater visibility. The EU's payments to the BACoMaB are in the nature of *payment for ecosystem services* (PES). They could send a signal for similar government agreements with other states. In terms of acquisition efforts, it would also be advisable to specifically target private companies with extraction rights to natural resources in Mauritania and win them over as supporters. However, there are not (yet) any comparable PES mechanisms for marine CO₂sinks (blue carbon), and the institutional, technical, legal and organisational costs of meeting the eligibility requirements would be very high (Trégaret et al., 2018, UNESCO 2020).

In Mauritania, as in most countries, (short-term) economic considerations take priority over environmental and biodiversity protection. However, given the importance of fish resources to the national economy, there are strong economic incentives for the Mauritanian government to continue to preserve the PNBA and PND and protect them from threats. In this context, the strong promotion of fisheries monitoring and the increase in state support for PNBA and PND in recent years give cause for hope. At present, no change in this situation is expected in the near future.

The sustainability of the effects will also depend on how Germany, as the most important bilateral donor in the field of species conservation, and other international actors position themselves and whether they are prepared to continue to provide financial support for coastal and species conservation in Mauritania. As these are global public goods, continued commitment can be justified in terms of development policy.

Rating summary of sustainability: moderately successful (3)

The sustainability of BACoMaB and its capital stock is structurally guaranteed. Not least because of the BACoMaB grants, the sustainability of the PND's hydraulic engineering infrastructure also appears to be fundamentally assured. Unlike other park buildings, the infrastructure is well maintained. The picture is different for building investments in the PNBA, where insufficient maintenance means that a long service life cannot currently be assumed.

Biodiversity on the coast of Mauritania is severely threatened by economic activities. Since the project was appraised, the threat has been exacerbated by port construction and gas extraction. Accordingly, the sustainability of the effects is at risk. However, the enormous economic importance of fish as a resource, effective fisheries monitoring and the existence of a financing instrument with sustainability give reason to hope that the effects achieved will nevertheless be long-lasting.

Overall assessment: moderately successful (3)

The project was highly relevant due to the outstanding importance of Mauritania's coastal region for biodiversity, the economy and also the climate. The combination of capitalising the BACoMaB and financing the necessary infrastructure was the right approach to address key challenges in protected area management. Implementation took place in close cooperation with German TC and international partners. The project made a relevant contribution to institutional development and the capitalisation of BACoMaB. Despite existing challenges, it is functional and provides sustainability in the financing of PND and PNBA. The capitalisation component was therefore successful overall. With regard to investment measures in the protected areas, the picture is mixed. The hydraulic engineering investments in the PND were of great importance for the functioning of the ecosystem and also slightly improved the income opportunities of the population. Inadequate maintenance and limited use of the building infrastructure in the PNBA, as well as considerable damage to the PND's dykes, reduce the efficiency and effectiveness and, in some cases, the sustainability of the project. The sustainability of achieved results is also threatened by various external factors. Overall, the results achieved do not fully meet expectations, but the positive effects clearly outweigh the negative ones. The project is therefore appraised as "limited success" rather than "successful".

Contribution to Agenda 2030

Universal applicability, shared responsibility and accountability: Mauritania's coastal region plays a key role in marine biodiversity, income generation and food supply. Furthermore, the seagrass beds located there bind large amounts of CO₂. The project therefore contributes to the goals of the 2030 Agenda – in particular SDG 14 (marine biodiversity), SDG 1 (poverty), SDG 2 (hunger and nutrition) and SDG 13 (climate action) – the United Nations Convention on Biological Diversity and the Kunming-Montreal Global Biodiversity Framework, as well as the Paris Climate Agreement. The project worked closely with other international organisations on the institutional and financial development of BACoMaB.

Interplay between economic, ecological and social development: The project takes into account and promotes all three dimensions of sustainability. The targeted conservation of fishing grounds is of great ecological and economic importance. Social development was promoted through investments in the transport and drinking water systems. Both protected areas also take into account the integration of the local population and its interests in their management plans.

Inclusiveness / Leaving no one behind: The project took into account the concerns of the population living within and on the fringes of the protected areas. The Imraguen people living in the PNBA belong to a disadvantaged social class in Mauritanian society. By making an investment in the drinking water supply, the project contributed to improving their living conditions.

Methodology

Evaluation methodology

The ex-post evaluation follows the methodology of a rapid appraisal, i.e. a data-based, qualitative contribution analysis, and represents an expert opinion. The project is attributed effects based on plausibility considerations, which are based on a careful analysis of documents, data, facts and impressions. Where possible, this also includes the use of digital data sources and modern techniques (e.g. satellite data, online surveys, geocoding). The causes of any contradictory information are investigated, attempts are made to resolve them, and the assessment is based on statements that are confirmed by several sources of information (triangulation), where possible.

The analysis of the effects is based on assumed causal relationships, documented in the impact matrix developed during the project appraisal and updated during the ex-post evaluation, if necessary. The evaluation report sets out arguments as to why certain influencing factors were identified for the effects observed and why the project under review probably made a certain contribution (contribution analysis). The context of the development measure is taken into account in terms of its influence on the results. The conclusions are put into relation to the availability and quality of the data basis. An evaluation concept serves as the reference framework for the evaluation.

The method offers a balanced cost-benefit ratio for project evaluations, on average, with a balance between knowledge gain and evaluation effort, and allows for a systematic assessment of the effectiveness of DFG projects across all project evaluations. Individual ex-post evaluations cannot therefore meet the requirements of a scientific assessment in the sense of a clear causal analysis.

The main objective of the evaluations (knowledge interest) is to measure impacts, provide accountability, promote transparency and enable institutional learning.

Type of evaluation:

Trip to the project area

Key questions of the evaluation according to the evaluation concept:

- To what extent has the management effectiveness of the protected areas improved?
- Are the funded infrastructures being used efficiently? Have investments in infrastructure led to greater presence, satisfaction, cooperation/co-governance in protected area management? Would an alternative use of funds be more effective?
- Is the infrastructure being maintained? To what extent are BACOMAB funds being used regularly for this purpose?
- To what extent has the funding gap for the operating and management costs of protected areas been closed or reduced? What funding gaps remain? What options are available for meaningful follow-up funding?
- To what extent are management plans regularly updated, implemented and monitored? How well does cooperation between PNBA, PND, BACoMaB and other relevant institutions work in terms of resource management?
- How were decisions made on the prioritisation and financing of management and operating costs for the protected areas?
- Is the project appropriately tailored to the needs and capacities of the target groups? Are the right incentives being provided? Are certain social groups disadvantaged by the conservation measures?
- Is biodiversity in the protected areas being sustainably protected? Can vegetation and animal populations be maintained despite increasing threats?
- To what extent have the framework conditions for the protection of biodiversity and fish resources improved?

Non-public (internal) documents

Internal project documents (MV, ongoing reporting, PCR), specialist literature, strategy papers, comparable evaluations, media reports, consultants' final reports.

Directory of public sources

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Data sources and analysis tools

Partner monitoring data, annual reports from the PND, PNBA and BACoMaB, management plans from the PND and PNBA

Project sites visited

Both national parks were visited. In PNBA, the following buildings and infrastructure were inspected: Chami administration building, Ten Alloul water desalination and solar power plant, Iwik base camp with solar power plant and boat, Iwik village with water source and pontoon, ecotourism facility in Iwik (not financed by FC), R'Gueiba village with water desalination and solar power plant, water source and pontoon, pontoon near Mamghar, and Mamghar base camp with solar power plant.

In PND, the following buildings, locations and infrastructure were visited: 2 security posts; all hydraulic installations and dykes; the park administration area including FC-financed bungalows and sanitary facilities, Afd-financed hotel bungalows and restaurants, park administration building, staff accommodation; the fishing sites of the local population, the neighbouring village of Taehredient on the Ziré dune; the mangrove reforestation in the south of the park near Birette paulh; the dam across the Senegal River. In addition, the site of the rice farmer invasion on the north-western edge of the park, the new port of N'Diogo, and the Chat Boul lagoons were visited.

Interview partners and modality (in person, virtual/by telephone, in writing)

Directorates of the PNBA (DG and 4 other directors, monitoring unit in Nouakchott), PND (DG, technical staff in Nouakchott), and BACoMaB (DG, operational team, consultants for the accompanying measure), AFD (Directorate and Biodiversity Focal Point), EU (representatives for fisheries agreements and budget financing), GIZ (biodiversity team); Coastal Protection Directorate in the Ministry of the Environment; Fisheries Monitoring and Management Directorate in the Ministry of Fisheries; Director of International Economic Cooperation in the Ministry of Finance; Management and operational team at the Fisheries Monitoring Centre in Nouakchott.

Representatives of the target group: PNBA technical park management and field staff (surveillance, monitoring, operational) in Iwik and Mamghar; Villagers in Iwik and R'Gueiba in meetings and at fish pontoons, including interviews with women's groups; PND: park management on site, technical staff and students on site, operational staff; villagers in Taehredient and at fishing and sales locations on the main road.

By telephone/video: former implementation consultant, former representative of the MAVA Foundation; GIZ and WWF consultants involved in the establishment of BACoMaB, representative of the West African Coastal Protection Network ([PRCM](#)).

The following aspects limited the evaluation

Insufficient data on the management performance of the PNBA.

The operating cost ratio of BACoMaB could not be determined because the cost types reported do not allow for a clear distinction between operating costs and other expenses. The annual reports of BACoMaB also do not contain any information on the investment income generated. This significantly limits the possibilities for making objective and comparative statements about the efficiency and effectiveness of BACoMaB.

Assessment methodology

A six-point scale is used to assess the project according to OECD DAC criteria, with the exception of the sustainability criterion. The scale values are as follows:

- Level 1** Very successful: results significantly above expectations
- Level 2** Successful: results fully in line with expectations, without significant shortcomings
- Level 3** Moderately successful: results below expectations, but positive results predominate
- Level 4** Moderately unsuccessful: significantly below expectations and negative results dominate despite recognisable positive results
- Level 5** Unsuccessful: despite some positive partial results, the negative results clearly dominate
- Level 6** Highly unsuccessful: the project is useless or the situation has deteriorated

The overall rating on the six-point scale is based on a project-specific weighting of the six individual criteria. Levels 1–3 of the overall rating indicate a 'successful' project, while levels 4–6 indicate an 'unsuccessful' project. It should be noted that a project can generally only be classified as "successful" in terms of development policy if both the achievement of objectives at the outcome level (effectiveness) and impact level, as well as sustainability, are rated at least as "moderately successful" (level 3).

The annex to this report is available upon request (German only).

Imprint

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