

Sectoral public policies & pressures on biodiversity

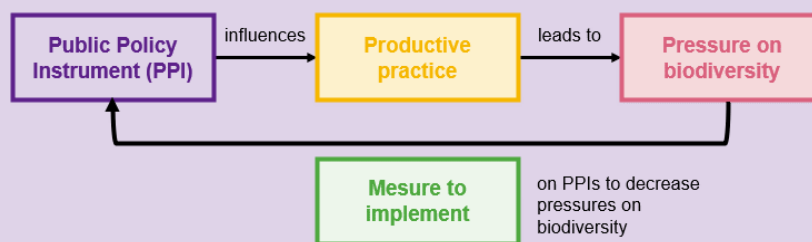
Sectors: Agriculture (soybean and sugar cane), Fisheries (crabs and shrimps), and Extractive industries (mining and oil and gas)

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It highlights the linkages between the pressures on biodiversity that are caused by the sectoral production practices and the main sectoral, economic and trade public policy instruments (PPIs) shaping these practices. These instruments can be of several kinds: regulatory, economic and financial, informational, etc. They have been categorized according to the extent to which they take biodiversity into account: ● blind to biodiversity; 🌿 taking biodiversity into account. Several priority measures to be implemented have been identified and are presented below: **reform** (repurpose, strengthening or abolition) of an existing instrument; **enforcement** of an existing instrument; **introduction** of a new instrument.



The main harmful productive practices, the PPIs shaping these practices and associated gaps, as well as the priority measures that could be implemented were identified through a literature review and interviews with experts. We used the DPSIR framework (Driver – here the harmful practices; Pressure; State; Impact; Response – here, priority measures that could be implemented). Detailed data on the consequences for biodiversity (State) and for Humans (Impact) are available in the [diagnoses](#) carried out in phase 1 of the BIODEV2030 project. The classification of pressures on biodiversity is based on the IPBES categorization.

Country context: National biodiversity targets & progress of biodiversity mainstreaming in public policies

Mozambique's national biodiversity targets are outlined in its National Biodiversity Strategy and Action Plan (NBSAP) 2015-2035 under the Convention on Biological Diversity (CBD)ⁱ. The NBSAP sets specific targets for biodiversity conservation, integrating biodiversity objectives into broader development goals like agriculture, fisheries, and forestry. Mozambique has also ratified regional conventions for biodiversity conservation such as the African Convention on the Conservation of Nature and Natural Resourcesⁱⁱ and the Nairobi Convention.

Mozambique has made efforts in mainstreaming biodiversity into public policies. The country's Five-Year Government Program (*Programa Quinquenal do Governo – PQG*)ⁱⁱⁱ and the National Development Strategy 2015-2035 (*Estratégia Nacional De Desenvolvimento*)^{iv} attach particular importance to natural resources preservation and biodiversity conservation.

The national legal framework includes a variety of instruments governing biodiversity. For instance, Environmental Law *No.20/1997* promotes the sustainable use of natural resources and includes provisions that directly or indirectly address biodiversity conservation. The law establishes that Environmental Impact Assessments (EIAs) for development projects are a legal requirement to minimize negative impacts on ecosystems and biodiversity. The Forest Law *No.17/2023* focuses on the protection and sustainable use of forests and wildlife. It defines several categories of conservation areas including national parks, forest reserves, and game reserves as well as specific regulations that restrict activities in those areas. It also creates a legal framework for biodiversity management, addressing issues such as illegal logging, wildlife trafficking, and habitat destruction. The Conservation Law *No.16/2014* also plays a key role in safeguarding the country's biodiversity and natural resources. The law includes provisions for the classification and management of conservation areas, as well as financial mechanisms to support conservation activities.

Consider bringing here the legislation of fishing, mining and agriculture related to the environment and biodiversity conservation.

The Foundation for the Conservation of Biodiversity (BIOFUND), a private not-for-profit Mozambican institution with public utility status, is a key financial mechanism for Mozambique's conservation efforts. It mobilizes resources from various international donors, foundations, private sector contributions, and government allocations to fund biodiversity protection and conservation initiatives^v. Since 2014, BIOFUND has contributed to 74 disbursed projects in conservation areas and has raised USD 56,31 million as endowment fund and USD 10.5 million for direct project implementation^{vi}.



Agriculture (soybean and sugar cane)

Agriculture is the main economic activity in Mozambique, contributing to 24% of the country's Gross Domestic Product (GDP), employing 80% of the total workforce, and generating 80% of the income of rural households^{vii}. The sector is predominantly composed of small-holder farmers who account for approximately 98% of the total workforce and production.^{viii} These small-scale farms typically range from 1 to 2 hectares in size. The remaining 2% consists of Micro, Small, and Medium Enterprises (MSMEs) and larger agribusiness and commercial farms^{ix}.

Mozambique's agriculture sector is divided into two main sub-sectors: food crop production accounting for 80% of the agricultural value added in 2022 with maize, cassava, and sorghum being the major crops, and cash crops production including tobacco, cotton, sesame, sugar, and tea^x.

Sugarcane is one of Mozambique's most important cash crops, playing a vital role in rural employment and export earnings. In 2022, sugar cane exports generated USD 44.5 million, ranking the country as the 22nd largest exporter of raw sugar cane globally^{xi}. The primary markets for Mozambique's raw sugar cane exports are the United States, Portugal, and Botswana^{xii}. **Sugarcane is primarily grown in the southern and central regions**, particularly Maputo, Sofala, and Manica. The industry is supported by several large-scale plantations and four main processing plants, including the Mafambisse, Marromeu, Maragra, and Xinavane sugar estates, which collectively produce approximately 380,000 tons annually^{xiii}. The country also counts a few companies in the organic sugar value chain such as Ecofarm^{xiv}.

Soybean is increasingly recognized as a key cash crop in Mozambique, with production and marketing expanding steadily. The primary production regions are the Central and Northern provinces, particularly Zambezia,

Manica, Tete, and Niassa, which account for 99% of the country's total output^{xv}. Soybeans in Mozambique are primarily grown for local consumption, mainly serving the animal feed industry, particularly for poultry production^{xvi}. Additionally, there is a rising demand for soy oil and other soy-based products^{xvii}. A portion of Mozambique's soybean production is exported to countries such as Zimbabwe, Mauritius, Ghana, South Africa, and the United Arab Emirates. In 2022, Mozambique exported USD 100 million worth of soybean oil, positioning the country as the 27th largest exporter of soybean oil globally^{xviii}.

National soybean productivity remains low, averaging 0.63 tons per hectare. Zambezia is the top-producing region, yielding 29,080 tons with an average productivity of 0.86 tons per hectare in 2023, followed by Tete with 16,503 tons and a productivity of 0.66 tons per hectare during the same season^{xix}. However, the expansion of soybean farming raises environmental concerns, particularly regarding land conversion and deforestation in some regions. Addressing these issues is crucial to ensuring sustainable growth in Mozambique's soybean sector.

Agricultural productivity in Mozambique remains low due to several factors, including limited access to improved agricultural inputs, inadequate infrastructure, and vulnerability to climatic shocks such as droughts and floods^{xx}. To address these challenges, the government has launched several policies and initiatives such as the Strategic Plan for the Development of the Agricultural Sector (PEDSA) 2021-2030^{xxi}, which aims to boost productivity (through infrastructure development, extension services, and improved access to finance), enhance food security, and integrate smallholder farmers into agricultural value chains. The implementation of the PEDSA is enabled by the National Agrarian Investment Plan (PNISA) launched in 2013, aiming to: (i) reach an average growth of the agricultural sector of 7% per year in the next 10 years; (ii) reduce chronic malnutrition in children under 5 years of age from 44% in 2008 to 30% in 2015 and 20% in 2020, and (iii) halve the proportion of people suffering from hunger by 2015^{xxii}.

Despite agriculture's critical role in the country, rural poverty remains widespread (70% of the poor live in rural areas)^{xxiii}. Many smallholder farmers continue to face limited access to markets, finance, and extension services, which hampers their ability to improve productivity and increase their incomes^{xxiv}.

The Ministry of Agriculture and Rural Development (MADER) has outlined a strategic objective to contribute to food security, nutrition, and farmers' incomes competitively and sustainably in the PEDSA. **This objective is being pursued through a value chain approach under the government's Agriculture and Natural Resource Landscape Management project, launched in 2017.** The project seeks to integrate family farming into productive value chains and improve the well-being of rural households through the promotion of sustainable agricultural intensification. The main value chains emphasized in the program include soybean, cassava, and maize.

⚠ Pressure: Land use change

Harmful practice Conversion of forests into farmlands

PPIs linked to this practice & associated challenges

► **Regulations on forest clearing – Lack of enforcement.** Mozambique's *Land Law No.19/97* prohibits engaging in economic activities, including agriculture and agro-industrial operations, without proper authorization from relevant authorities such as provincial governors, the Ministry of Agriculture and Fisheries, or the Council of Ministers (*as per Article 20*). The law also requires that land use complies with environmental regulations, meaning activities like deforestation or land clearing, especially for commercial purposes, must receive prior approval. Similarly, the *Forest Law No.17/2023* governs the use and management of forested areas in Mozambique. It strictly prohibits forest clearing without a license and forbids agricultural activities in national parks and reserves. However, in practice, the majority of smallholder farmers practice shifting agriculture (slash and burn), which involves clearing forested land illegally. This practice is responsible for 86% of deforestation in Mozambique^{xxv}, particularly around protected areas.

As population growth increases the demand for farmland, agricultural activities often encroach into protected zones. Commercial farming, particularly of crops like soybean and sugarcane, also requires vast amounts of land, leading to the conversion of forested areas into large agricultural fields. The Mozambican government has granted large-scale land concessions to private investors to produce cash crops like soybean, maize, and cotton in forested or marginal lands in the framework of projects. **This has contributed to deforestation to make way for commercial farms.** The growing pressure

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from the expansion of commercial agriculture has led to conflicts between conservation efforts and farming interests. **Mozambique's ability to enforce forest clearing regulations is hampered by limited financial and human resources in addition to a lack of coordination between sectoral policies (agriculture and forestry). Although 8,901 inspections of forestry areas have been conducted since 2020 by the Ministry of Land and Environment^{xxvi}, resulting in 4,970 fines (amounts going from MT 2,000,000 to MT 100,000,000) against illegal operators, the monitoring and control system is still weak.** Environmental agencies often lack the personnel and equipment to monitor and prevent illegal deforestation and encroachment into protected areas, especially in remote areas.

► **Environmental Impact Assessments (EIAs) requirements – Lack of enforcement.** Environmental *Law No. 20/97* and *Decree 54/2015* approving the regulation on EIA, establish protective requirements to limit the environmental impact of projects. The laws state that activities with potential environmental impacts must undergo an EIA before being authorized. Clearing land without following these procedures is illegal under this law. However, its enforcement faces several challenges. **The Ministry of Land, Environment, and Rural Development (MITADER) often lacks sufficient resources, staffing, and technical expertise to effectively oversee and enforce EIA regulations.** In theory, the MITADER should conduct regular inspections on the sites of projects to monitor the implementation of the management plans. They can also request an environmental audit when it is necessary. In addition, the MITADER is responsible for the renewal of environmental licenses on a five-year basis. **This leads to delays in conducting assessments. Even when EIAs are conducted and approved, the follow-up on their implementation is often weak. There is insufficient monitoring to ensure that projects comply with the mitigation measures recommended in the EIA reports.**

► **Land tenure and rights – Regulatory conflict.** In Mozambique, the *Land Law No. 19/37* governs the land tenure system. It stipulates that all land belongs to the state and cannot be privately owned. However, individuals, communities, and companies can secure land-use rights through a system known as DUAT (*Direito de Uso e Aproveitamento da Terra*). Under this system, land must be used for the specific purpose for which the DUAT was granted. Additionally, Mozambique recognizes customary land tenure, meaning local communities have rights over the land they traditionally occupy. Any allocation of land for development or commercial purposes requires consultation with these communities.

However, Mozambique has witnessed significant conflicts arising from large-scale land acquisitions, often driven by foreign investors. These projects, frequently approved without adequate consultation with local communities or consideration of environmental impacts, lead to the conversion of forested areas into large agricultural estates under the guise of economic development. Peasants in northern Mozambique (especially in the Nacala Corridor) are struggling to keep their lands, as governments and foreign companies set up large-scale agribusiness projects. So far, the country's experience with foreign investment in agriculture has not led to any real sharing of benefits with local communities.

► **Land use planning and zoning – Inadequate.** In Mozambique, land use planning and management is governed by *Law No. 19/2007* and *Decree No. 23/2008*. **There is often a lack of coordination between agricultural, forestry, and conservation policies, creating gaps that allow agricultural expansion into areas designated for conservation.** This misalignment leads to conflicting land uses, such as agriculture versus conservation, primarily due to inadequate integration of land-use planning across different sectors. Although certain areas are designated as protected, **the enforcement of zoning regulations is weak.** As a result, agricultural activities encroach into protected areas without proper oversight, further compromising conservation efforts.



⚠ Pressure: Pollution

Harmful practice inappropriate use of chemicals

PPIs linked to this practice & associated challenges

► **Regulations on the use agricultural chemicals – Lack of enforcement.** In Mozambique, the *Decree No.6/2009* establishes the framework for the registration, control, and use of pesticides. All pesticides must be registered with the Ministry of Agriculture before they can be sold or used. Proper labeling is mandatory, ensuring that users have access to information on safe usage, risks, and disposal. The government monitors pesticide usage, and violations can lead to penalties,

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including fines or bans. The decree also makes provision for the proper disposal of obsolete pesticides. The *Decree No.11/2013* sets management measures for fertilizers without putting in danger the protection of public, animal and environmental health. The MITADER oversees the quality control of fertilizers to prevent the sale of substandard or harmful products.

Despite the existence of these regulations significant challenges remain. **One of the primary issues stems from limited resources and capacity for enforcement, leading to inadequate oversight of the sale, distribution, and application of these chemicals.** This lack of enforcement allows farmers and agro-businesses to overuse or misuse pesticides and fertilizers without facing consequences.

The agricultural sector, particularly soybean production, has seen incidences of pests that have driven farmers to acquire and apply insecticides extensively. Moreover, many smallholder farmers are often unaware of the risks associated with excessive pesticide and fertilizer use. **This lack of awareness contributes to overuse and improper application, further exacerbating environmental and health issues.** Additionally, agricultural extension services that could provide critical guidance to farmers on safer and more efficient chemical use practices are frequently underfunded and understaffed. This gap in support hampers the ability of farmers to implement sustainable agricultural practices that protect public health and the environment.

► **Incentives for the promotion of agroecology – Absence.** In Mozambique, public policies fall short of promoting sustainable farming practices and providing financial incentives for forest conservation. Key policies, such as the National Land Policy and the Forest and Wildlife Law, aim to regulate land and forest use but lack specific mechanisms to offer economic alternatives for local communities. This gap leaves farmers with few choices beyond clearing land for agriculture as a short-term livelihood strategy. Moreover, there is minimal policy support for sustainable agricultural practices, such as agroforestry, which could help balance food production with forest preservation. The PNISA, for instance, promotes sustainable agriculture practices, including agroecology but has faced challenges in translating its goals not tangible incentives for agroecology promotion.

Without clear incentives or financial support to promote best practices, unsustainable farming methods, including the excessive use of agricultural chemicals, are prevalent. These practices not only lead to deforestation but also degrade soil quality and biodiversity. The absence of policies promoting sustainable alternatives – like agroecology or organic farming – further compounds the problem, allowing environmentally harmful practices to persist. As a result, deforestation and the overuse of chemical inputs continue to threaten Mozambique's ecosystems and the livelihoods of the communities that depend on them.

Other harmful practices Large-scale soybean and sugarcane production often involve **monoculture and intensive mechanization**. Monoculture reduces biodiversity in agricultural landscapes by replacing diverse ecosystems with homogeneous crops, reducing the variety of species, including plants, insects, and animals, that can thrive in these areas. Intensive mechanization contributes to soil compaction and reduces the rate of water infiltration into the soil which may change the soil moisture status and lead to risks of soil erosion.

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- **Agricultural input subsidies – Blind to biodiversity.** The government of Mozambique, with the support of its development partners (World Bank, USAID, EU, IFC, FAO), has launched several programs including subsidies on agricultural inputs like improved seeds, fertilizers, and pesticides. Those initiatives include the Fertilizer Subsidy Programme from 2009 to 2018, the e-voucher pilot in 2015, and the SUSTENTA Program from 2017 onwards. The SUSTENTA program includes the provision of subsidized inputs (seeds, fertilizers, and pesticides) to emerging farmers, agribusinesses, and subsistence farmers in the Nacal Development Corridor, Zambezia, and Nampula^{xxvii}. Prior to the SUSTENTA Program, Mozambique had implemented a voucher program that aimed at distributing vouchers that gave 73% subsidy on packages of 12.5 kg of improved seeds of maize or rice and 100 kg of fertilizer (Urea and NPK) to farmers of maize and rice producing provinces.^{xxviii} **So far, these programs have not included organic inputs.**
- **Credit access facilities – Blind to biodiversity.** In the context of the PEDSA, the government has pledged to enhance and streamline farmers' access to credit facilities, which is vital for improving agricultural productivity. This is accomplished by setting up credit lines

and providing credit guarantees to mitigate risks, among other measures. **However, there are currently no environmental requirements or conditions linked to such credit.**

TRADE POLICY

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Mozambique has been focusing on increasing agricultural exports, particularly for cash crops like cashew nuts, tobacco, and sugarcane. The government provides incentives for exporters, including tax exemptions.

- ▶ **Value Added Tax (VAT) exemptions for exports – Blind to biodiversity.** In Mozambique, exports of agricultural products are not subject to VAT to make Mozambican agricultural exports more competitive in international markets by lowering costs. ●
- ▶ **Preferential trade agreements Mozambique – Blind to biodiversity.** Mozambique benefits from preferential trade agreements, including the Southern African Development Community (SADC) and the African Growth and Opportunity Act (AGOA), which offer access to regional and international markets. ●

Suggested priority measures to implement to align public policies (sectoral, economic and commercial) and biodiversity conservation

The suggested measures below have been drawn up based on a literature review and interviews with experts. They summarize the suggested measures presented in the previous paragraphs on PPIs, in response to their current content and the gaps identified in terms of biodiversity mainstreaming.

Pressure on biodiversity	Suggested priority measures	Type of policy	Type of PPI	Type of measure
Cross-cutting	Increase the financial capacities of Mozambique's Institute of Agricultural Research (IIAM) and its zonal centers to improve research on agroecological practices.	Sectoral	Regulatory	Enforcement
	Promote sustainable certification schemes (ex: Responsible Soy and Bonsucro for sugarcane) and provide tax incentives for medium and large-scale farmers adopting sustainable farming practices.	Sectoral	Information/Economic	Introduction
Land use change	Enforce existing land-use planning and zoning laws (Law No. 19/2007, Decree No. 23/2008, and Land Law No.19/1997), involving local communities, conservation organizations, and government agencies in co-managing protected areas.	Sectoral	Regulatory	Enforcement
	Reform the land tenure system in a way to formalize land titles for smallholder farming and define clear and well-communicated boundaries for protected areas (no-go areas for agriculture).	Sectoral	Regulatory	Repurpose
	Revise the conservation law (n°16/2014) to encourage conservation and sustainable use of resources outside of conservation areas and specifically in production areas.	Sectoral	Regulatory	Repurpose
	Revise the EIA regulation (Decree n°54/2015) to include all production sectors and improve the enforcement of EIAs for agricultural projects in the soybean and sugarcane value chains (especially for land concessions for medium and large-scale farming).	Sectoral	Regulatory	Enforcement
Pollution	Redesign input subsidy programs to include organic inputs (organic fertilizers and bio-pesticides) and make them accessible to farmers through effective distribution channels.	Sectoral	Economic	Introduction
	Subsidize local organic input supply chains (ex: local composting units and distribution schemes) to ensure the	Sectoral	Other	Introduction

availability of such inputs for farmers, reduce reliance on imports and create economic opportunities in rural areas			
Incorporate organic input into broader environmental and sustainability policies as well as agricultural policies (PEDSA, PNISA).	Sectoral	Information/other	Introduction
Increase the technical and financial capacities of the MITADER to enhance the enforcement of regulations on the use of agricultural chemicals.	Sectoral	Regulatory	Enforcement
Promote reforestation and restoration initiatives on degraded lands.	Sectoral	Information/other	Strengthen



Fisheries (shrimps and crabs)

Sector context

The fisheries sector is important to Mozambique's economy as it provides employment, food security, and livelihoods, particularly in coastal communities. Mozambique has a large coastline of 2,470 km and an Exclusive Economic Zone (EEZ) of 571,452 km² ^{xxix}, which gives it access to rich marine and freshwater fisheries resources. Although the sector only contributed 1.6% to the country's GDP in 2023^{xxx}, it plays a crucial role in food security by providing about 50% of the animal protein consumed nationally, with an even higher share in coastal areas^{xxxi}.

The sector is divided into four main sub-sectors: artisanal fishing, semi-industrial fishing, industrial fishing, and aquaculture. Artisanal fisheries account for over 90% of total fishery production, involving around 400,000 people and more than 42,000 boats (according to the Artisanal Fishing and Aquaculture 2022 census)^{xxxii}. Semi-industrial fishing contributes 4% of total production, mainly through small trawlers involved in domestic coastal crustaceans and deep-sea shrimp fishing^{xxxiii}. Industrial fishing includes large vessels flagged in Mozambique and internationally. It accounts for 5% of total production and focuses on high-value crustaceans such as shrimp, primarily for export.^{xxxiv}

Key commercial species include coastal and benthic crustaceans such as shrimps, lobsters, and crabs, and pelagic species such as tuna. Crustaceans, and particularly shrimps, are vital for export, amounting to USD 37 million in 2018^{xxxv}, with major markets in Europe (Spain and Portugal) and Asia (Japan). Mangrove crab exports associated with artisanal fishery have also become an important resource for communities with the increase of small and medium retailers and processor companies.

Despite its potential for growth and poverty alleviation, Mozambique's fisheries sector faces significant challenges. Overfishing by industrial fleets, the rapid expansion of artisanal fisheries, and unsustainable fishing practices have contributed to the decline of marine resources. The degradation of coastal ecosystems due to destructive fishing methods, such as the use of small mesh nets and poison, has exacerbated the problem. Bycatch rates in tropical shrimp trawls are of particular concern and are estimated to be as high as 85%^{xxxvi}.

Illegal, Unreported, and Unregulated (IUU) fishing has been identified as an important threat to local fishing communities, costing Mozambique between USD 36-67 million each year^{xxxvii}. In addition, the critical lack of data on catch sizes, species composition, and bycatch severely constrains effective fisheries management, potentially increasing the risk of overfishing endangered species.

The government has implemented several initiatives to address these challenges. The Fisheries Master Plan aligned with Mozambique's Action Plan for Poverty Reduction (PARP) focuses on sustainable fisheries development to support poverty alleviation while improving the management of the country's marine resources. The government has also established Marine Protected Areas (MPAs) along with seasonal fishing bans and area closures to ameliorate the sustainability of marine ecosystems and fisheries. Locally Managed Marine Areas (LMMAs) have also been identified by NGOs and communities ready to engage in more sustainable comanagement approaches, but only one of the many projected LMMAs has been gazetted so far, due to a very long validation process led by the fisheries administration (ADNAP). Therefore, further efforts are needed to ensure the long-term sustainability and growth of Mozambique's fisheries sector.

⚠ Pressure: Natural resources overexploitation

Harmful practice Use of non-selective gears and destructive fishing methods

PPIs linked to this practice & associated challenges

► **Ban on the use of non-selective fishing gears – Lack of enforcement.** Mozambique's *Fisheries Law No. 22/2013* governs the use of fishing gears and sets out principles for sustainable management and utilization of marine resources. The law is implemented through various ministerial decrees and regulations such as *Decree No.89/2020* in *chapter III* that provides detailed guidance on different types of fishing (industrial, artisanal, recreational), including specifications for authorized mesh sizes. The Decree prohibits harmful fishing gears, such as fine-mesh nets, which can lead to overfishing and harm juvenile fish populations. Specific rules govern the minimum mesh size for nets, particularly

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gillnets and trawl nets, to ensure that juvenile fish are not caught. However, in practice, artisanal fishermen often use beach seines and mosquito nets (*chicocota* nets), particularly in estuaries, which yield higher catches but are less selective^{xxxviii}. The use of small-size trawl nets in coral areas and small mesh nets is also common, contributing to the capture of juvenile shrimps and other small fish.

Mozambique's vast coastline presents a challenge for effective enforcement. The government lacks sufficient resources, such as patrol vessels, surveillance technology, and human resources, to adequately monitor and enforce fisheries regulations. As a result, it is easier for fishermen to use non-selective gear, undermining efforts to protect marine ecosystems. The setting up of LMMAs with a clear sharing of responsibilities between the governmental institutions and local community committees could alleviate this obvious weakness, but the fisheries administration should foster and accelerate the formalization of LMMAs and responsible local communities for their enforcement.

Harmful practice Increase in fishing effort

PPIs linked to this practice & associated challenges

► **Regulation on licensing and fishing quotas – Lack of enforcement.** *Decree No.89/2020*, which enacts Mozambique's *Fisheries Law No.22/2013*, establishes a fishing quota system linked to the licensing system. The regulation aims to prevent overfishing by setting quotas for license holders of industrial and semi-industrial fishing fleets, particularly for high-demand species such as shrimps and tuna. These quotas limit the quantity of fish or seafood harvested annually, ensuring that Mozambique's marine resources are exploited sustainably.

Resolution No.62/2023 approving the Fisheries Monitoring, Control, and Inspection Policy and its Implementation Strategy (MCS) provides guidance on the enforcement of quotas and the fight against IUU fishing. The government has implemented a combination of sea patrols, port inspections, and vessel monitoring systems to track fishing activities. Licensed vessels must comply with the quotas, and penalties are imposed for exceeding the limits or fishing without the proper licenses.

Despite these efforts, Mozambique faces significant challenges in effectively enforcing the licensing and quota systems. IUU fishing still prevails and undermines the effectiveness of the quota system. The lack of sufficient resources and technological capacity for robust monitoring and enforcement allows IUU fishing to flourish. This increases fishing efforts, as unlicensed vessels exploit marine resources without adhering to quotas, contributing to overfishing and depleting fish stocks.

► **Regulations on MPAs – Lack of enforcement.** *Conservation Law No. 5/2017* and *Fisheries Law No.22/2013* establish the legal framework for the protection, conservation, and sustainable use of biological diversity within marine conservation areas. The laws include provisions for the establishment and management of MPAs. The network of MPAs in Mozambique includes 7 conservation areas, where fishing is either restricted or entirely prohibited.^{xxxix}

However, many MPAs are inadequately managed and poorly respected. The enforcement of regulations is weak overall due to bureaucratic hurdles, lack of coordination among management agencies, and insufficient capacity to prosecute offenders effectively. Enforcement agencies such as the Ministry of the Sea, Inland Waters, and Fisheries (MIMAIP) frequently lack sufficient funding, personnel, and equipment to monitor large coastal and marine areas effectively. This results in inadequate surveillance allowing fishers to continue to operate in these areas, undermining conservation goals and reducing the ecological benefits that MPAs are supposed to provide.

► **Seasonal fishing restrictions and closed areas – Lack of enforcement.** The government of Mozambique imposes seasonal fishing bans and restricted fishing zones to protect juvenile stocks and spawning periods, which usually runs from November to February. Between 2023 and 2024 for instance, several ministerial orders have been published, establishing effective prohibition on mangrove crab and surface shrimps fishing from November 2023 to March 2024 (*ministerial orders no. 126/2023, no. 132/2023, no. 131/2023, and no. 134/2023*). **However, fishers still violate the bans as they rely on fishing for their livelihoods. The weak monitoring and control system exacerbates the situation.**

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⚠ Pressure : Land use change

Harmful practice Illegal mangrove logging

PPIs linked to this practice & associated challenges

► **Regulations on mangrove logging – Lack of enforcement.** In Mozambique, the Forest Law No.17/2023 classifies mangroves as protected forest species, placing significant restrictions on their exploitation. The law imposes fines and sanctions for illegal logging and deforestation of mangroves, recognizing their vital role in sustaining ecosystems. Additionally, other legal frameworks, such as Land Law No.19/97 and Fisheries Law No.22/2013 include provisions aimed at preserving mangroves by prohibiting illegal harvesting and unsustainable fishing practices in mangrove areas.

Mangrove ecosystems provide essential services for coastal fisheries, serving as breeding and nursery grounds for species like crabs and shrimps. In contexts of rapid demographic growth, the role of mangroves for the reduction of coastal risks is a major argument for their conservation and for the restoration of degraded mangrove ecosystems. Despite this, artisanal fishers often cut mangroves to build boats, fishing traps, and platforms, as mangrove wood is strong and resistant to decay when submerged in water. Moreover, as fishers seek to diversify their income sources, mangroves are cleared to install shrimp aquaculture.

Enforcement of these laws is often weak and hindered by corruption, limited financial and human resources, and insufficient community engagement. This lack of enforcement exacerbates the degradation of mangrove ecosystems, threatening both biodiversity and the livelihoods dependent on these coastal environments.

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ECONOMIC POLICY

► **Promotion of aquaculture.** Recognizing the declining wild stocks of certain marine species, including shrimp, Mozambique has been promoting aquaculture (especially shrimp farming) through its Aquaculture Development Strategy 2020-2030^{xl}. The policy supports investment in sustainable aquaculture projects, with incentives for private sector involvement and technology transfers to boost productivity. The government offers tax breaks and other financial incentives to attract foreign and local investments in aquaculture, especially in coastal areas that have the potential for large-scale shrimp farming. Aquaculture projects are subject to EIAs, and aquaculture licensing is one of the elements that regulates this activity and likewise guarantees environmental protection. **The government needs to improve the regulatory framework and oversight, ensure proper enforcement of EIAs requirements and continue promoting sustainable aquaculture practices and production technologies.**

► **Subsidies to the fisheries sector – Blind to biodiversity.** In Mozambique, the main forms of subsidies are a 50% discount on tax for fuel (which disproportionately benefits industrial operators), import tax exemption for imported inputs, and subsidies for ice, gear, vessel construction, and engine purchase^{xlii}. **Moreover, by encouraging increased fishing efforts, the fuel tax subsidy as well as subsidies for boats, engines, and freezing inputs place even more pressure on the already overfished shrimp stocks.**

► **Fisheries Partnership Agreements (FPA) – Lack of enforcement.** FPAs are deals between the Mozambican government and foreign nations or companies. These deals allow foreign fishing vessels to operate within Mozambique's EEZ. The main species targeted by these agreements include tuna, shrimp, and other high-value fish, which are often in demand on international markets. Mozambique has signed bilateral FPAs with several partners, such as the EU under the Sustainable Fisheries Partnership Agreement (SFPA), as well as with Asian countries. **These agreements specify the quotas, species, and methods of fishing allowed, and include provisions aimed at ensuring sustainable fishing practices.** However, there are concerns about the long-term impact of these agreements on Mozambique's marine ecosystems. In some cases, foreign vessels have been accused of overfishing. **Mozambique's ability to effectively monitor and enforce these agreements is sometimes limited by a lack of resources and capacity.**

Degree of biodiversity mainstreaming



TRADE POLICY

Degree of biodiversity
mainstreaming

Mozambique is a major exporter of seafood, particularly shrimps, prawns, and gamba, which are highly sought after in international markets like the EU, mainly Spain and Portugal, and Asia (Japan and Hong-Kong)^{xiii}. In 2017, 82% of shrimp exported by Mozambique went to Spain and Portugal^{xiiii}. The government actively supports the development of this export market.

- ▶ **Trade Agreements with foreign markets.** Mozambique has preferential trade agreements, particularly with the EU under the Economic Partnership Agreement (EPA). This agreement grants Mozambique tariff-free access to the EU market for a range of products, including fish and seafood, such as shrimps and crabs. The EPA not only facilitates Mozambique's export growth by providing favorable market conditions but also includes provisions for sustainable fishing practices. **These agreements often set quotas and other regulatory measures to ensure the preservation of fish stocks and marine biodiversity.**



Suggested priority measures to implement to align public policies (sectoral, economic and commercial) and biodiversity conservation

The suggested measures below have been drawn up based on a literature review and interviews with experts. They summarize the suggested measures presented in the previous paragraphs on PPIs, in response to their current content and the gaps identified in terms of biodiversity mainstreaming.

Pressure on biodiversity	Suggested priority measures	Type of policy	Type of PPI	Type of measure
Cross-cutting	Improve cross-sectoral collaboration and coordination (agriculture, mining, fisheries, and trade) to align biodiversity conservation efforts in the fisheries sector with efforts done in the mining and agriculture sectors.	Sectoral	Cross-cutting	Strengthen
	Mozambique's Ministry of the Sea, Inland Waters, and Fisheries (MIPAIP) to work closely with The National Institute for Fisheries Research (IIP) and the Oceanic Institution of Mozambique (InOM) to improve catch and artisanal fishing effort statistics and ensure that quotas are aligned with the capacities of marine ecosystems	Sectoral	Other	Strengthen
Natural resource overexploitation	Improve fisheries Monitoring, Control and Surveillance (MCS), especially in estuaries and other critical fishing areas to ensure compliance with fishing gears specifications, licensing requirements, and quotas	Sectoral	Regulatory	Strengthen and Enforcement
	Empower and involve local communities and stakeholders such as Community Fisheries Councils in licensing campaigns, the surveillance, and management of coastal areas. This could be achieved through fisheries policies that promote community-led fisheries management	Sectoral	Other	Introduction
	Formalize and gazette the LMMAs that have already been identified and empower the local communities and Community Fisheries Councils to lead their management and surveillance. The coordination between community organizations and institutions should be enhanced for better management of natural resources.	Sectoral	Regulatory	Strengthen and Enforcement
	Enhance the monitoring and control of FPAs with foreign countries ensuring that quotas and fishing practices are respected.	Sectoral	Regulatory	Strengthen
	Redirect one part of financial compensation for FPAs towards fisheries and resources management operations.	Sectoral	Economic	Introduction

	Enforce MPAs and through improved monitoring systems, updated data, and the involvement of coastal communities in their management	Sectoral	Regulatory	Enforcement
	Regulate the fishing effort of the artisanal sub sector by developing an artisanal fishing licensing strategy	Sectoral	Other	Introduction
	Revise subsidies to the fisheries sector and tie them to compliance with sustainable fishing practices.	Sectoral	Economic	Introduction
	Ensure effective registration of artisanal fishermen and artisanal boats for improved management	Sectoral	Regulatory	Strengthen
	The MIPAIP to work with IIP and develop a strategy to limit bycatch (ex: require bycatch reduction devices attached to fishing gear for industrial and semi-industrial fishing; increase fishing net mesh size)	Sectoral	Other	Introduction
	Provide subsidies for technology or infrastructure that reduce environmental impact, such as Turtles Excluder Devices (TED) or other gears that minimize bycatch or investment in aquaculture to alleviate pressure on fish stocks	Sectoral	Economic	Introduction
Land use change	Promote mangrove restoration initiatives along the national coast and improve the enforcement of regulations on the use of mangrove resources.	Sectoral	Information	Strengthen



Extractive industries (mining and oil and gas)

Sector context

The sector, which includes mining, oil and gas industries, contributed to 10.55% of GDP in 2022^{xliv}, represented 8% of government revenues in 2019^{xlv}, and 57% of total exports in 2023^{xlvi}. The sector also accounted for 7,247 registered jobs in 2019^{xlvii}.

The discovery of 100 trillion cubic feet of natural gas in 2010, representing the third largest natural gas reserve in Africa, has positioned Mozambique as a key player in the global liquefied natural gas (LNG) market, attracting major international investments. Projects led by TotalEnergies, ExxonMobil, and Eni have catalyzed this growth, with the Coral Sul floating LNG project beginning operations in November 2022 and the USD 20 billion Mozambique LNG Project marking one of Africa's largest foreign direct investments^{xlviii}. Although Mozambique has not yet developed a substantial oil production industry, ongoing offshore oil exploration the Zambezi Delta Basin has attracted interest from international oil companies.

Coal production, concentrated in Tete Province, makes Mozambique one of Africa's top coal exporters, with key markets in Asia. The country is also a leading producer of heavy mineral sands, particularly titanium, through the Moma Titanium Minerals Mine, as well as rubies and other gemstones, notably from the Montepuez region. Mining concessions all along the coast of Nampula and Zambezi led to prospections and investment, attracting foreign workers and generating important demographic growth and environmental damages.

Aside from their economic benefits, extractive activities have led to environmental degradation, including deforestation and pollution. Natural habitats are cleared to make way for mining activities and related infrastructure. In addition, water sources are polluted with hazardous chemicals, while air quality is impacted by dust and emissions. The Ministry of Mineral Resources and Energy (MIREM) oversees the sector through regulatory bodies managing petroleum, mining, and energy activities, but enforcing environmental protections remains a challenge, often compromised by economic pressures.

⚠ Pressure: Land use change

Harmful practice Conversion of natural habitats into mining sites

PPIs linked to this practice & associated challenges

► **Regulations on Environmental Impact Assessment (EIAs) – Inadequate and Lack of enforcement.** Mozambique's legal framework mandates EIAs for activities with direct or indirect impacts on the environment, including the extractive industries. The *Mining Law No. 20/2014* and The *Decree on Environmental Impact Assessment No.54/2015* categorizes projects into A+, A, B, and C based on their potential environmental impacts. Category A+ projects require a full-fledged EIA and independent expert review, while A projects need a comprehensive EIA, B projects require a simplified EIA, and C projects must follow general environmental management practices.

However, specific regulations for the mining and oil sectors such as *Decree No.56/2010*, *Decree No. 34/2015*, and *Decree No. 31/2015* exclude them from being classified as A+, limiting them to A, B, or C, which introduces inconsistencies in ensuring the highest level of scrutiny for high-impact projects. In Mozambique, mining operations often lead to deforestation as land is cleared to make way for open-pit mines and supporting infrastructure. This is a significant concern in areas like Tete Province, where mining has resulted in the destruction of natural forests.

The enforcement of EIAs in Mozambique is often weak, leading to significant gaps in environmental protection. Limited resources and capacity of regulatory bodies hinder effective monitoring and enforcement of compliance. Corruption and political pressures further exacerbate this issue, resulting in lenient oversight and insufficient penalties for non-compliance. Additionally, the lack of transparency and public accountability in decision-making processes surrounding mining and oil and gas projects creates opportunities for bad practices to flourish.

► **Land Use Planning – Inadequate.** In Mozambique, land use planning and management is governed by *Law No. 19/2007* and *Decree No. 23/2008*. Mining and petroleum activities can occur on public land through concessions as per *Land Law No.19/1997*. However, the land use planning

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framework often prioritizes economic development over biodiversity conservation, resulting in concessions being granted in or near biodiversity-rich areas, such as protected areas, wetlands, and forests. **A key challenge is the overlap between land allocated for mining and areas designated for agriculture, conservation, or community use.** This overlap frequently leads to conflicts between mining companies, local communities, and other land users, exacerbating the environmental and social impacts of mining.

For example, the discovery of vast coal deposits in Tete Province led to large-scale mining operations that transformed significant tracts of land previously used for agriculture, forestry, and habitation into mining sites. Similarly, the extraction of heavy sands for titanium in coastal regions like Moma in Nampula Province dramatically altered land use, significantly impacting coastal ecosystems.

Mozambique's regulatory framework for land use in the mining sector is still evolving. **Weak coordination between government ministries and agencies, such as those responsible for land, environment, and mining, hampers effective land use management. Additionally, insufficient resources and expertise at national and local levels often hinder the monitoring and enforcement of land use regulations, environmental standards, and community agreements, further complicating efforts to mitigate the environmental and social consequences of mining activities.**

► **Rehabilitation requirements – Lack of enforcement.** In Mozambique, mining operators are legally required to implement an Environmental Management Plan (EMP) to mitigate environmental impacts, as stipulated in *Environmental Law No. 20/1997*. This includes actions for environmental protection, waste management, and land rehabilitation during and after mining activities. *Decree No. 26/2004* on the Environmental Regulation for Mining Activities also obliges companies to provide financial guarantees, such as environmental bonds, ensuring funds are available for land restoration even if a company becomes insolvent. Before decommissioning, companies must submit a closure and rehabilitation plan that outlines steps like re-vegetation, soil stabilization, and making the land suitable for alternative uses. The MIREM, along with the Ministry of Land, Environment, and Rural Development, monitors compliance, with regular reporting required on environmental performance.

While Mozambique's regulatory frameworks, including the *Mining Law No. 20/2014*, mandate that no mine may close without executing a closure program, **weak enforcement remains a major challenge. Companies often neglect their rehabilitation duties, leaving behind degraded land. Insufficient oversight and failure to enforce bonds exacerbate this issue, resulting in incomplete or entirely neglected rehabilitation efforts.**



⚠ Pressure : Pollution

Harmful practice Toxic chemical release

PPIs linked to this practice & associated challenges

► **Restrictions on the use of toxic chemicals – Lack of enforcement.** While there is no exhaustive list of prohibited toxic chemicals, several key substances are restricted due to their environmental and health impacts. Mercury is commonly used in artisanal and small-scale gold mining and is prohibited under the *Minamata Convention on Mercury*, which Mozambique ratified in February 2024. Additionally, cyanide and lead are frequently employed in gold extraction processes, and arsenic is used in some mineral ores such as limestone, graphite, and bauxite.

Law No.5/2018 regulates hazardous materials and governs the management and disposal of hazardous substances, including those used in the extractive industries. This law requires companies to report on their use of toxic chemicals and adhere to safe handling and disposal practices. **However, enforcement and compliance with these regulations can vary, and environmental concerns continue to be a significant issue within the extractive sector.**

► **Regulations on pollution control and waste disposal – Lack of enforcement.** *Water Law No. 16/91* mandates that extractive industries prevent water pollution and properly dispose of waste, adhering to wastewater treatment standards. However, untreated wastewater, chemicals (such as mercury, cyanide, and arsenic from gold and coal mining), and heavy metals have contaminated rivers like the Zambezi and Pungwe. The mining of coal and other minerals generates substantial amounts of dust and airborne particulate matter, leading to increased respiratory illnesses in the Tete province, where coal mining is concentrated. The gas sector, particularly in Cabo Delgado,

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contributes to air pollution through gas flaring, releasing carbon dioxide, methane, and other harmful gases into the atmosphere.

Decree No. 13/2006 on waste management requires extractive industries to manage hazardous and non-hazardous waste to prevent soil, water, and air contamination. *Mining Law No.20/2014* governs mineral resource exploration and production, emphasizing environmental protection. It mandates pollution control measures and rehabilitation of affected areas, along with the requirement for EIAs and environmental management plans. *Petroleum Law No.21/2014* regulates the oil and gas sectors, requiring operators to conduct environmental assessments, manage waste responsibly, and prevent land, air, and water pollution. It ensures compliance with environmental and safety standards throughout petroleum resource exploration, development, and production. However, oil and gas extraction often leads to oil spills, further exacerbating the contamination of water resources, as seen in the Rovuma Basin.


Mozambique has environmental regulations to prevent pollution from the extractive industries, but enforcement remains a challenge. While the government has committed to sustainable development, corruption, weak institutional capacities, and the economic dependence on revenues from extractive industries make it difficult to hold companies accountable for environmental damage.

ECONOMIC POLICY

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- ▶ **Biodiversity Offset requirements** In May 2022, the *Ministerial Diploma 55/22* on the implementation of biodiversity offsets was published. It enables the government to ensure that development projects of category A+ and A implement biodiversity offset management plans and invest in biodiversity conservation projects or protected areas to compensate for the ecological impacts of their operations. **This measure aims to achieve "no net loss" of biodiversity. However, it does not include category B and C projects.** 
- ▶ **Environmental Licensing** Mozambique requires companies to obtain environmental licenses for any project that may have significant environmental impacts as stated in the *Environmental Law 20/97* and *Decree on Environmental Impact Assessment 54/2025*. The environmental license is a pre-requisite for the issuance of any other license or permit that may be legally required. As part of the licensing process, companies must pay fees based on the total investment value and the estimated environmental impact of their activities. **These fees contribute to funding environmental rehabilitation and conservation initiatives. Environmental licences are valid for a period of five years and must be renewed.** 
- ▶ **Fiscal regime – Blind to biodiversity.** The mining, oil, and gas sectors have specific fiscal terms, including income taxes, royalties, and production-sharing mechanisms outlined in *Law No. 28/2014 on taxation and fiscal benefits of mining operation*. The Mining Production Tax (MPT) is due monthly and must be paid by mining title owners. It is levied on the value of the mining product extracted, with different rates for different products (diamonds 8%, gemstones 6%, heavy sands 6%, coal 3%). **Additionally, there is a surface tax imposed on the area under prospecting and exploration licenses, mining concession, or mining certificate.** There is also the mining resource income tax, which is levied on the net cash flow under a mining bond^{xlix}. 
- ▶ **Foreign Investment promotion – Blind to biodiversity.** Mozambique encourages foreign direct investment (FDI) in the extractive sector. The government offers incentives such as tax exemptions for a certain period, customs duty waivers, and investment guarantees (guarantee against nationalization and protection of investments). However, FDIs in the extractive sector are blind to biodiversity as the focus is more on the substantial revenues and job opportunities they bring in, which overshadow the need to account for biodiversity impacts. 

TRADE POLICY

Mozambique exports mineral resources including coal briquettes, raw aluminium, petroleum gas, and gold to countries like India, South Africa, South Korea, Italy, and China^l. The country is a member of regional economic communities such as the Southern African Development Community (SADC) and the African Continental Free Trade Area (AfCFTA) which opens markets for extractive products. 

Suggested priority measures to implement to align public policies (sectoral, economic and commercial) and biodiversity conservation

The suggested measures below have been drawn up based on a literature review and interviews with experts. They summarize the suggested measures presented in the previous paragraphs on PPIs, in response to their current content and the gaps identified in terms of biodiversity mainstreaming.

Pressure on biodiversity	Suggested priority measures	Type of policy	Type of PPI	Type of measure
Land use change	Enforce rigorous EIAs for all mining and oil and gas projects, ensuring biodiversity considerations are central. Projects should not be approved if they pose irreversible risks to critical habitats or protected areas.	Sectoral	Regulatory	Enforcement
	The EIA Authority should request environmental audits and conduct inspections more frequently and tie the renewal of environmental licenses to environmental and biodiversity performance.	Sectoral	Regulatory	Strengthen/Enforcement
	Enforce the Ministerial Diploma 55/2022 on biodiversity offset requirements for development projects A+ and A in the extractive industries.	Sectoral	Regulatory	Enforcement
	Extend biodiversity offset requirements to all projects in the mining, oil and gas sectors (including B and C project categories) and ensure effective channeling through BIOFUND.	Sectoral	Regulatory/Economic	Introduction
	Strengthen MITADER's monitoring mechanisms to ensure compliance with environmental regulations.	Sectoral	Regulatory	Strengthen
	Increase the amounts of fines and penalties for non-compliance with environmental regulations such as failure to update the environmental license and failure to implement the mitigation measures proposed in the Environmental Impact Study.	Sectoral	Regulatory	Strengthen
	Revise land-use plans to identify sensitive ecosystems, Key Biodiversity Areas (KBAs) and buffer zones, and restrict or ban extractive activities in these areas	Sectoral	Regulatory	Repurpose
	Ensure effective use of environmental bonds paid by companies on rehabilitation activities	Sectoral	Economic	Enforcement
Pollution	Set up a national biomonitoring tool, with a particular focus on the risks of pollution and contamination from heavy metals.	Sectoral	Other	Introduction

Abbreviations

AfCFTA	African Continental Free Trade Area	MCS	Monitoring, Control and Surveillance
AFD	French Development Agency	MIMAIP	Ministry of the Sea, Inland Waters, and Fisheries
CBD	Convention of Biological Diversity	MIREM	Ministry of Mineral Resources and Energy
DNEA	National Directorate for Agricultural Extension	MITADER	Ministry of Land, Environment, and Rural Development
DUAT	Direito de Uso e Aproveitamento da Terra	MPAs	Marine Protected Areas
EEZ	Exclusive Economic Zone	MSMEs	Micro, Small, and Medium Enterprises
EIAs	Environmental Impact Assessments	NBSAP	National Biodiversity Strategy and Action Plans
EMP	Environmental Management Plan	OMR	Observatorio do Meio Rural
EPA	Economic Partnership Agreement	PEDSA	Strategic Plan for the Development of the Agricultural Sector
FPAs	Fisheries partnership agreements	PNISA	National Agrarian Investment Plan

BIOFUND	Foundation for the Conservation of Biodiversity	PPI	Public Policy Instrument
IIAM	National Institute of Agrarian Research	SADC	Southern African Development Community
IIP	National Institute for Fisheries Research	SFPA	Sustainable Fisheries Partnership Agreement
InOM	Oceanic Institution of Mozambique	VAT	Value Added Tax
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services	WWF	World Wildlife Fund
IUCN	International Union for Conservation of Nature	VAT	Value Added Tax
IUU	Illegal, Unreported, and unregulated fishing	WWF	World Wildlife Fund
KBAs	Key Biodiversity Areas		
MADER	Ministry of Agriculture and Rural Development		

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