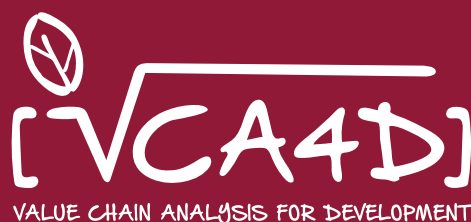




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Analysis of the fisheries value chain in Guinea-Bissau

Value chain analyses assist in informing policy dialogue and investment operations. They help the understanding of how agricultural, aquaculture and fisheries development fits within market dynamics. They permit an assessment of the value chains' impact on smallholders, businesses, society, and environment.

The European Commission has developed a standardised methodological framework for analysis (https://capacity4dev.europa.eu/projects/value-chain-analysis-for-development-vca4d/info_en). It aims to understand to what extent the value chain allows for inclusive economic growth and whether it is both socially and environmentally sustainable.

Value chain context

The fisheries value chain is a strategic pillar for food security and economic diversification in Guinea-Bissau, serving as a crucial alternative to the country's historical dependence on cashew exports. Structurally, the sector is divided into a large-scale industrial fleet (mostly foreign), which operates in the Exclusive Economic Zone, and a small-scale and shore-based fishing sector that supplies the domestic market and ensures local livelihoods. The agricultural and fisheries structure is based on informal agreements and customary rights of access to water and land, which are under increasing pressure from foreign incursions. The main constraints include a lack of basic infrastructure (such as cold chains, ice, roads and river/maritime transport), high dependence on imported inputs, weak institutional governance and high vulnerability to climate change, which threatens marine biodiversity and catch yields.

Cooperation Agreement with the European Union

The European Union's involvement in Guinea-Bissau's fisheries sector is structured through bilateral agreements, cooperation programmes and support for the sustainable governance of fishery resources. The current Partnership Agreement for Sustainable Fisheries (2024–2029) is the sector's main external funding mechanism, mobilising around €85 million over five years. A significant portion of these resources is allocated to institutional strengthening, fisheries monitoring,

scientific research, infrastructure improvements and support for small-scale fisheries. The European Union has also supported the drafting of the National Fisheries Strategy 2023–2027, contributing to the development of the blue economy and the sustainable management of marine resources.

In the context of technical cooperation, the European Commission, through DG INTPA, has also funded this Value Chain Analysis using the VCA4D methodology. The study provides an assessment of the economic, social and environmental performance of the fisheries value chain, with a view to supporting future policy decisions and interventions aimed at a more inclusive, resilient and sustainable blue economy.

The European Union's Influence on the Structure of the Fisheries Value Chain

The European Union exerts a substantial influence on the value chain through its Sustainable Fisheries Partnership Agreement (SFPA). This trade and political agreement provides vital financial support, generating around €17 million annually, with funds earmarked for institutional strengthening, scientific research and support for the local artisanal sector. Despite this alignment with sustainability, direct trade agreements with the EU are blocked because Guinea-Bissau does not meet the strict European requirements for health certification and traceability, which prevents direct exports. EU-funded initiatives, such as the VCA4D study itself, aim to promote inclusive blue economy policies. However, local communities often report that these financial compensations and projects lack transparency and offer very limited local benefits.



Functional analysis

Production

The production stage is characterised by a pronounced technological and structural duality. In 2022, artisanal fisheries produced an estimated 57,404 t, comprising 42,624 t from vessels—predominantly non-motorised dugout canoes—and 14,780 t from traditional shore-based fishing. By contrast, industrial fisheries generated 110,350 t, with production largely dominated by foreign vessels. Despite these volumes, fishery yields have shown a declining trend, driven by overfishing, illegal, unreported and unregulated (IUU) fishing, and the high climate vulnerability of both pelagic and demersal species. Significant regional disparities persist: the North and the Bijagós Archipelago demonstrate relatively high artisanal productivity but face substantial logistical challenges, while the South is severely constrained by inadequate access to ice and cold-chain infrastructure. Technological capacity also differs markedly between sectors. The artisanal fleet remains largely rudimentary, with only 27% of vessels motorised, whereas the industrial fleet employs advanced technologies but operates largely disconnected from the national economy, limiting local value creation and economic spillovers.

Processing and marketing

Post-harvest stages are essential but underdeveloped. Processing is mainly artisanal, carried out by women using **traditional smoking, salting and drying techniques** to extend shelf life in the absence of cold chains. Industrial processing is limited to freezing plants in Bissau, processing around 6,000 t of mandatory landings. **Distribution relies heavily on women ('bideiras')** who face severe logistical constraints, such as poor roads, a lack of refrigerated transport and heavy internal taxes. In commercial terms, artisanal catches supply local markets, whilst industrial catches are almost entirely exported or landed in ports such as Dakar. Exports are mainly destined for African nations (Togo, Ivory Coast, Ghana), although a large proportion is unrecorded. In terms of competitiveness, the sector enjoys **high protection in the domestic market (Nominal Protection Coefficient of 2.41)**, but suffers from severe inefficiencies, with a negative Domestic Resource Cost (-2.57) due to costly imported inputs to compensate for shortages during the lean season (June to August).

Sub-chains

The value chain is divided into four segments that generate **82.6 billion CFA francs in Direct Value Added (VA)**:

- **Production (Catch):** This involves small-scale fishermen and foreign industrial fleets. It is the segment that generates the most value, accounting for **62.5% of direct VA** and providing over 11,880 full-time equivalent jobs. It generates the greatest absolute wealth, although the industry's profits are largely taken out of the country.

- **Artisanal Processing:** Led by women in coastal areas contributes **23.9% of direct VA** and is vital for food security and reducing losses, although it operates with low-efficiency ovens and incurs high logistics costs.
- **Industrial Preservation/Processing:** Includes the freezing complexes in Bissau. It accounts for **7.4% of direct VA** and creates formal urban employment, processing the mandatory industrial landing quota.
- **Distribution/Marketing:** Based on retail and wholesale 'bideiras'. It is the smallest segment by value (6.2% of direct VA) and operates on very tight margins due to transport costs, but is economically essential for female employment.

Governance of the value chain

The Ministry of Fisheries oversees the sector through specialised institutions: DGPI (industrial), DGPA (artisanal), DGFADP (training), INIPO (research) and FISCAP (enforcement). The policy framework is anchored in the General Fisheries Law and the Land Law, ensuring state regulation of resources. Regulatory oversight faces chronic structural challenges, including limited logistical capacity and inadequate patrol fleets for FISCAP, which hinders the control of illegal, unreported and unregulated (IUU) fishing. Financial governance is supported by the Fisheries Resource Management Fund (FGRH), funded by licensing fees, although a lack of transparency remains a consistent concern. Recent strategic reforms, such as the National Fisheries Strategy 2023–2027 and the Sustainable Fisheries Partnership Agreement with the EU, aim to professionalise operators, attract investment and strengthen the sector's infrastructure.

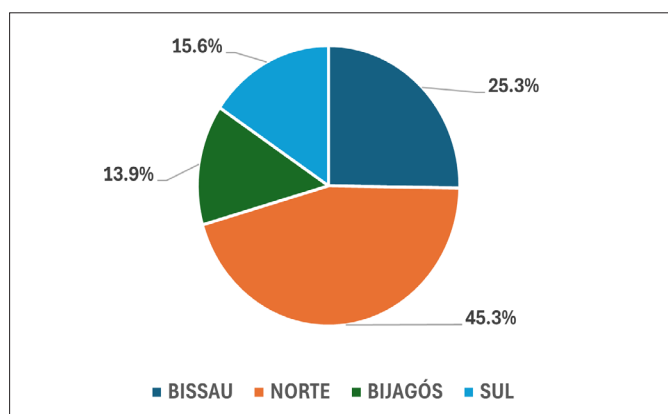


Figure 1. Share of direct value added (in %)

What is the contribution of the value chain to economic growth?

Financial Viability of Stakeholders

Financial viability varies significantly due to structural constraints and intense cost pressures. Fishermen operating non-motorised rowing canoes achieve the highest profit margins (51% to 88% of value added) because they avoid fuel costs, although their absolute catch volumes are low. Conversely, motorised canoes face severe pressures due to the cost of imported fuel and ice, reducing their margins to between 5% and 27%. Processors, mainly women using traditional methods, operate on narrow margins due to high costs of firewood and transport, coupled with a lack of modern equipment. Traders (bideiras) face serious liquidity and logistics costs, exacerbated by inter-regional transport charges that severely undermine their profitability. Industrial shipowners capture the largest absolute profits, retaining around 75.6% of the gross value of production. In the artisanal sector, the lack of training, formal credit lines and dependence on unsubsidised imported inputs severely restrict financial viability and scale.

Impacts on the National Economy

The fisheries value chain makes a significant macroeconomic contribution, reaching a total VA of 92,260.3 million CFA francs in 2022. This figure represents 7% of national GDP and 20% of the primary sector's GDP, demonstrating its vital role. Domestic economic integration is moderate, with an integration rate of 53%, indicating that more than half of the value of production remains within the country. However, the sector relies heavily on imported inputs, which limits internal linkages. The official fiscal balance shows direct revenue of 1,546.9 million CFA francs, mainly from industrial licences and fees, supplemented by EU compensation. The scale of exports is severely distorted by statistical under-reporting; official data show a trade deficit of FCFA 17,397 million due to import costs, whilst huge volumes of industrial (and, to a lesser extent, artisanal) catches are landed in foreign ports and do not feature in the national accounts.

Viability in the international economy

The international competitiveness of the domestic sector is severely constrained by structural disadvantages and macroeconomic distortions. The Nominal Protection Coefficient (NPC) stands at 2.41, indicating that domestic prices are substantially higher than international parity prices. Whilst this protects the local market, it undermines the export competitiveness of small-scale fisheries. Furthermore, the Domestic Resource Cost Coefficient (DRCC) is negative (-2.57). A negative DRCC highlights a severe structural disadvantage: the costs of

imported inputs (such as fuel, nets and ice) exceed the revenue the sector would generate at international prices. Thus, the artisanal sector is not sustainable for export without protectionist measures. In contrast, the industrial fleet operates with enormous comparative advantages and economies of scale, circumventing national logistical bottlenecks by landing directly in other countries. Improving international viability requires reducing input costs and developing local cold chain infrastructure.

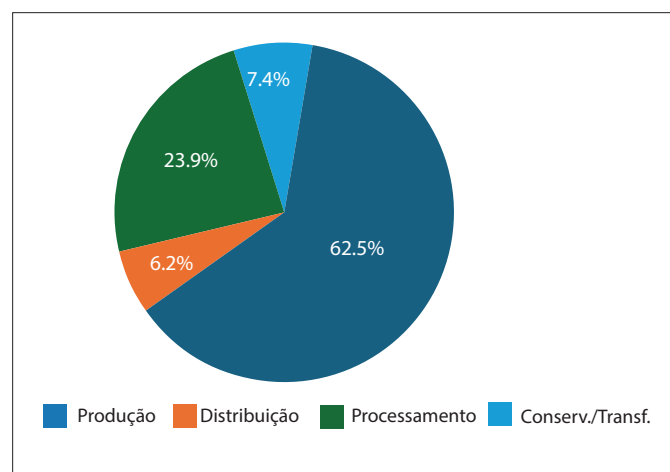


Figure 2: Contribution to direct value added by segment of the chain (in %)

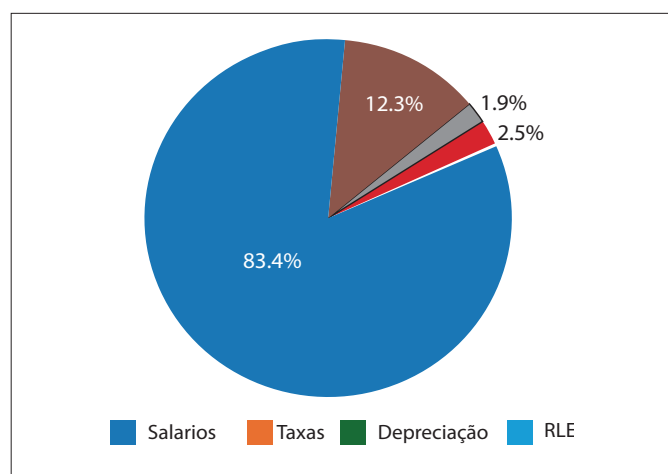


Figure 3: Distribution of direct value added (in %)

The fisheries sector is a vital but structurally limited economic pillar, contributing 7% to GDP. Whilst artisanal fisheries sustain local communities, the highly profitable industrial fleet primarily benefits foreign economies. Reducing dependence on imported inputs and improving fiscal transparency are crucial steps towards long-term economic viability.

Is the economic growth inclusive?

Income distribution

Income distribution within the fisheries value chain reveals a mix of sectoral inclusivity and structural inequalities. In 2022, the chain generated direct VA of 82,617 million CFA francs. The shares of VA are directed primarily towards the production stage, where fishermen capture 62%, followed by artisanal processing with 31% and distribution with 6%.

Analysing Net Operating Profit (NOP), the distribution remains balanced to avoid concentration among intermediaries, with fishermen retaining 59%, processors 26% and distributors 15%. However, the distribution of wages reveals sharp disparities: of the 10,126 million CFA francs paid in wages, 86% goes to fishing and 14% to processing, whilst distribution does not record formal wages due to its almost total informality.

Despite this apparent macro-level equity, there are profound inequalities based on capitalisation levels. Highly capitalised operators, such as industrial shipowners and large-scale wholesalers, capture the largest absolute volume of profit. Conversely, artisanal fishers, women processors and small-scale retailers face chronic structural constraints. These vulnerable groups lack access to training and credit facilities, lack efficient cold chain infrastructure, and operate on high-risk survival margins. Consequently, the lack of state support perpetuates serious socio-economic disparities.

Jobs

The fisheries value chain is a key driver of job creation, generating 16,369 Full-Time Equivalent (FTE) jobs in 2022. Employment is predominantly skewed towards artisanal operations: artisanal vessel-based fishing supports 8,619 FTE, whilst shellfish gathering and shore fishing account for 2,759 FTE. The post-harvest segments, which include processing and distribution, employ 4,489 FTE. The industrial fishing sector provides only 502 jobs domestically. Women play an overwhelming role in the post-harvest stages, constituting over 90% of the workforce in processing and marketing (4,040 FTE).

The role of rural employment is critical, as small-scale fishing and its processing act as a key socio-economic buffer, curbing rural migration and ensuring coastal food security and expenditure on health and education. However, the sector struggles with systemic labour issues. Almost all artisanal employment is precarious, with no written contracts, no social security protection and high exposure to hazards at sea. In the industry, the low number of domestic jobs stems from a lack of advanced technical certification among seafarers, facilitating the recruitment of foreign workers. Extreme poverty also normalises child labour along the coast, where children are integrated into fishing and trading routines to cover their education and clothing costs.

Is the value chain socially sustainable?

Figure 6 and the following table provide an image of the main social consequences of the VC activities in six strategic domains.

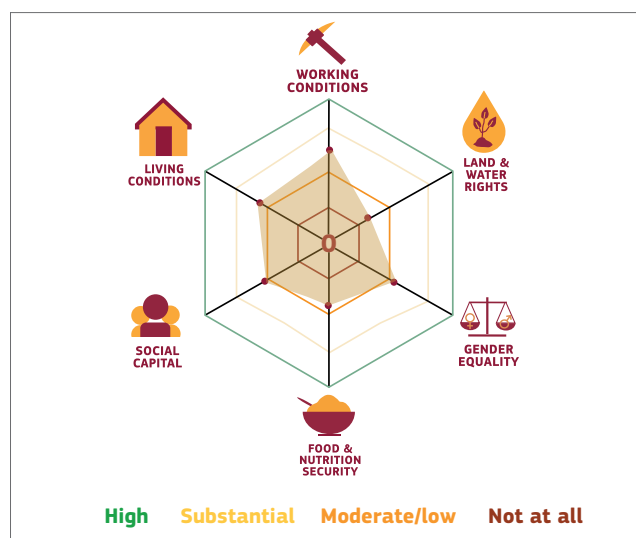


Figure 4: Social profile

Working conditions	Completely informal in small-scale fishing, dangerous and lacking any protection or social insurance
Land and water rights	Fragile; communities report foreign fleets encroaching on customary fishing grounds
Gender equality	Women have autonomy over their income, but lack political access and representation
Food and nutrition security	A cause for concern and in decline due to rising food prices and a decrease in high-quality fish catches
Social capital	Strong informal support networks, but representative organisations and cooperatives are weak and fragmented
Living conditions	Severely affected by poor access to public healthcare education, sanitation and transport infrastructure

The social sustainability of the chain is extremely precarious. Although there is visible economic empowerment of women, stakeholders are struggling with high-risk working conditions, a lack of land and maritime security, and growing food insecurity. The severe lack of public infrastructure, health services and institutional cohesion leaves populations highly vulnerable in a context of climate change and political instability.

Is the value chain environmentally sustainable?

Total Impact on Protected Areas

The results of the Life Cycle Assessment (LCA) demonstrate substantial environmental impacts across the board:

- **Human Health:** The industrial fishing sector is the primary driver of harm to human health due to the intensive and massive combustion of fossil fuels, which emits particulate matter and toxic gases. The smoke released by wood-fired ovens in artisanal processing also affects local respiratory health.
- **Ecosystem Quality:** The artisanal fleet has a disproportionate impact in this area through dramatic changes in land use. Approximately 89% of vessels (single-hulled canoes) require the massive felling of large forest trees. At the same time, mangroves are degraded to provide firewood.
- **Resource Depletion:** Driven largely by the industrial fleet, resulting from the depletion and excessive consumption of abiotic (fossil) energy resources.
- **Climate Change:** The entire production chain generated almost 847,552 tonnes of CO₂ equivalent in 2022, accounting for 7% of the country's total emissions. The industrial fleet is extremely inefficient in this regard, emitting almost 12 times more CO₂ per tonne than artisanal operations.

Impacts by Stage and Sub-chains

- **Harvesting (Farming):** This is the most significant point of impact. The industrial fleet accounts for over 98% of its environmental impact solely through its intense fuel consumption. Artisanal harvesting, on the other hand, suffers enormous penalties due to the felling of trees for the manufacture of canoes, accounting for 60% of its total environmental damage due to deforestation.
- **Processing (Smoking):** The smoking process constitutes a serious hotspot due to the burning of wood (>26,600 tonnes/year) in ovens with very low thermal efficiency, exacerbating air pollution and forest destruction. Freezing plants bear the full brunt of the pollution impact from the industrial fleet that supplies them with fish, as well as electricity and refrigerant gas.
- **Transport and Distribution:** It has a residual carbon footprint (<7% of emissions), as artisanal fish tends to be transported over very short distances or is smoked to extend its shelf life without the need for an intensive cold chain.
- **Export:** Highly inefficient; frozen fish consignments carry the immense carbon footprint of industrial

fishing, amplified by middlemen who transport fish directly by road from Senegal to urban and rural markets

Biodiversity

Extractive activity places acute pressure on ecosystems, currently threatening 70 of the 582 national marine species.

- **Pressure on Land Use and Ecosystem Fragmentation:** Chronic deforestation focused on felling the largest and oldest trees to make hulls for dugout canoes, accompanied by the extensive clearing of mangroves for fish smoking processes, causes severe fragmentation and the disappearance of coastal areas vital to marine communities (nurseries).
- **Conservation Framework:** Despite the legislative establishment of IBAP, Marine Protected Areas (MPAs) and even the introduction of seasonal biological closure periods (such as the ban on trawling in January), the actual effectiveness of marine protection consistently fails due to the lack of surveillance by public authorities against the rampant advance of IUU fishing.
- **Mitigation Strategies:** To prevent collapse, conservation policy must necessarily involve the use of more sustainable vessels (rather than dugout canoes), the urgent replacement of smoking ovens with efficient models that significantly reduce firewood consumption, a cap on industrial fishing quotas, and the establishment of active co-management of local fishing grounds.

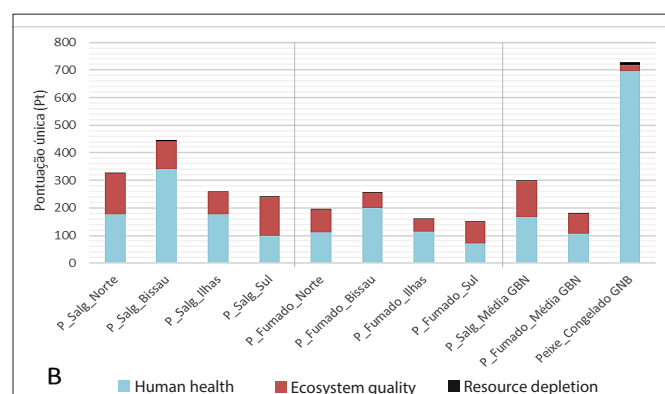


Figure 5: Environmental impacts of fish trade and sales (RPF – fresh fish retailers; RPT – processed fish retailers; PC – frozen fish), per tonne of product and by protection area

Currently, the supply chain is on a path of complete environmental unsustainability. Whilst industrial fishing emits massive volumes of greenhouse gases due to very high fuel consumption, the artisanal sector damages marine and forest ecosystems through the clearing of trees and mangroves to build canoes and cure the fish caught.

Main findings and recommendations

Institutional Reforms and Governance

- Strengthen Training (DGFAD): Expand the technical and budgetary capacity of the DGFAD with a view to updating the curriculum, focusing on areas such as maritime safety, aquaculture entrepreneurship and qualified naval operations.
- Modernise Licensing (DGPA and DGPI): Streamline the small-scale licensing process and make it fully digital. In parallel, the industrial fleet must install digital vessel monitoring systems (VMS) and provide substantial social contributions at the national level.
- Strengthen Research and Data (INIPO): Fund research fleets to carry out periodic scientific assessments and publish regular annual reports, in order to underpin regulation through strictly scientific biological quotas.
- Revitalising Enforcement (INFISCAP): Modernise the national patrol vessel fleet and implement digital records of irregularities with local coastal community teams to eradicate the spectre of IUU fishing within the country.
- Promote Participatory Co-management: Establish Local Fisheries Co-management Councils (CLCP) to enable not only better monitoring but also inclusive, peaceful and co-supervised resolution of any socio-economic conflicts.

Relevance Investment and Infrastructure Priorities

- Renew Post-Harvest Infrastructure: Make a critical commitment to the roll-out of cold stores powered by green energy sources in decentralised areas, as well as to hygienic ovens integrated into logistics hubs that reduce the massive losses due to fish spoilage.
- Build a National Export Hub: Launch a large cold storage facility in Bissau to ensure that rapid freezing and health certifications do not force foreign vessels to head back to neighbouring ports, thereby safeguarding the country's economy.
- Boosting Community Aquaculture: Revitalising eastern hubs (in the Gabú or Bafatá areas) by introducing the construction of fish farms that will definitively alleviate the pressure on coastal fishing nets.

- Revitalising the Bolama Centre: Refurbishing the ageing facilities to once again support modern regional training programmes.

Financial and Political Relevance

- Establish the National Fisheries Development Fund (FNDPA): Enact the creation of a state fund financed through the formal channelling of taxes, licences and fines, entirely focused on internal strengthening (supporting civil works, research or credit) of the fisheries sector.
- Expand Microcredit Schemes for Women and Young People: Develop subsidised loans dedicated to formalising the livelihoods of the most impoverished, particularly women and young people, by promoting cool boxes, high-quality nets, fibreglass boats and decentralised conservation infrastructure



Value Chain Analysis for Development (VCA4D) is a tool funded by the European Commission / INTPA and is implemented in partnership with Agrinatura. Agrinatura (<http://agrinatura-eu.eu>) is the European Alliance of Universities and Research Centers involved in agricultural research and capacity building for development. The information and knowledge produced through the value chain studies are intended to support the Delegations of the European Union and their partners in improving policy dialogue, investing in value chains and better understanding the changes linked to their actions. VCA4D uses a systematic methodological framework for analysing value chains in agriculture, livestock, fishery, aquaculture and agroforestry. More information including reports and communication material can be found at: <https://europa.eu/capacity4dev/value-chain-analysis-for-development-vca4d->

This document is based on the report "Analysis of the fisheries value chain in Guinea Bissau", by, Fontenele, E., Farrall, H., Temudo, M., Sambu, M., Guerreiro de Brito, A., Andres, L., 2025. Only the original report binds the authors.