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FISHERIES VALUE CHAIN ANALYSIS AND **CLUSTER MAPPING, CABO VERDE**

TECHNICAL REPORT

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

This technical report has been prepared by Mr. João Pedro Valadas Monteiro, Senior International Expert, for the Investment Promotion Division (INV) of the Department of Trade, Investment and Innovation (TII) at UNIDO Headquarters, Vienna, Austria, under the overall guidance of Mr. Bernardo Calzadilla-Sarmiento, Director, and of Ms. Lucia Cartini, Senior Coordinator, with the support of Mr. Sayaphol Sackda, Industrial Development Officer, and Mr. Rui Levy, UNIDO Coordinator in Cabo Verde. The report is part of preparatory assistance activities carried out in Cabo Verde in late 2015. Ms. Rebecca Spriggs, International Expert, finalized the report, with the support of Ms. Stephanie Promberger, International Expert. Ms. Nora Aoun, International Expert, designed the report. UNIDO would like to thank all stakeholders involved in this study who have extended their unreserved cooperation by providing relevant information during the interview process and by answering the questionnaires.

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

FISHERIES VALUE CHAIN ANALYSIS AND CLUSTER MAPPING, CABO VERDE

TECHNICAL REPORT

EXPLANATORY NOTES

Currency equivalents

As in October 2015

Cabo Verdean currency unit = Cabo Verdean Escudo (CVE)

1 USD = 100.725 CVE

€1 = 110.265 CVE (fixed exchange rate)

Weights and measures

International System of Units (SI)

List of acronyms and abbreviations

Acronym/Abbreviation	Full title
ACOPESCA	Autoridade Competente para os Produtos da Pesca / Fish Products Authority
ADEI	Agência para o Desenvolvimento Empresarial e Inovação / Agency for the Development of Enterprises and Innovation
AIS	Automatic Identification System
AMP	Agência Marítima e Portuária / Maritime and Ports Agency
APESC	Associação dos Armadores de Pesca de Cabo Verde / Fishing Boat-Owners Association of Cabo Verde
ARFA	Agência de Regulação e Supervisão dos Produtos Farmacêuticos e Alimentares / Agency for Regulation and Supervision of Pharmaceutical and Food Products
BRC	The British Retail Consortium
CABNAVE	Estaleiros Navais de Cabo Verde / Shipyards of Cabo Verde
CCB	Câmara de Comércio do Barlavento / Chamber of Commerce of Barlavento
CCS	Câmara de Comércio do Sotavento / Chamber of Commerce of Sotavento Captura m
CMS	Captura maxima sustentavel/ Maximum Sustainable Catch
CNPRM	Conselho Nacional das Pescas / National Board of Fisheries
CNQ	Conselho Nacional da Qualidade / National Quality Council
CPLP	Community of Portuguese-Speaking Countries

CSRP	Sub-Regional Fisheries Commission
CV	Cabo Verde
CV Garante	Fundo de Garantia Mútua/Mutual Guarantee Fund /
DGIC	Direção Geral da Indústria e Comércio / General Directorate of Industry and Trade
DGRM	Direcção Geral dos Recursos Marinhos / General Directorate for Marine Resources
DTF	Economy's Distance to Frontier
DWF	Frota do Largo / Distant Water Fleet
EC	Comissão Europeia/ European Commission
ECOWAS	Economic Community of West African States
EEZ	Zona Económica Exclusiva/ Exclusive Economic Zone
ENAPOR	Portos de Cabo Verde / Ports of Cabo Verde
ETS	Estratégia de Transformação Económica / Economic Transformation Strategy
EU	European Union
FAO	Organização para a Alimentação e Agricultura / Food and Agriculture Organization
FCC	Fundo de Crescimento e Competitividade / Growth and Competitiveness Fund
FDI	Investimento Direto Estrangeiro / Foreign Direct Investment
FDP	Fundo de Desenvolvimento das Pescas / Fisheries Development Fund
FIC	Feira Internacional de Cabo Verde / International Fair of Cabo Verde
FOB	Free On Board
GAV	Valor Acrescentado Bruto / Gross Added Value
GDP	Gross Domestic Product
GG	Gilled and Gutted
GNP	Gross National Product
GPRSP	Growth and Poverty Reduction Strategy Papers
GRT	Tonelagem de arqueação bruta / Gross registered tonnage
GSP	Generalised Scheme of Preferences (EU)
GT	Gross tonnage

GVA	Valor Acrescentado Bruto / Gross Value Added
HACCP	Hazard Analysis and Critical Control Points
HORECA	Hotels, Restaurants and Catering
hp	Horse power
ICCAT	International Commission for the Conservation of Atlantic Tunas
IEFP	Instituto de Emprego e Formação Profissional / Employment and Professional Training Institute
IFS	International Food Standards
IGQPI	Instituto de Gestão de Qualidade e da Propriedade Intelectual / Institute of Quality Management and Intellectual Property
IMF	Fundo Monetário Internacional/ International Monetary Fund
INDP	Instituto Nacional de Desenvolvimento das Pescas / National Institute for Fisheries Development
INE	Instituto Nacional de Estatística de Cabo Verde / Cabo Verdean National Statistics Institute
IUU	Illegal, Unreported and Unregulated fishing
LDC	Países Menos Desenvolvidos / Least-Developed Countries
LOA	Length Over All
LOPP	Laboratório Oficial dos Produtos das Pescas / Official Laboratory for Fishery Products
MIEM	Ministério das Infraestruturas e da Economia Marítima / Ministry of Infrastructure and Maritime Economy
MSC	Marine Stewardship Council
MSME	Micro, Small and Medium Enterprises
MSY	Maximum Sustainable Yield
mt	metric tons
NTZ	No-Take Zone
NOCMAR	Núcleo Operacional para o Cluster do Mar / Cabo Verde Maritime Cluster Operational Core
NPPO	National Plant Protection Organization
ODA	Official Development Assistance

OECD	Organization for Economic Co-operation and Development
PALOP	Países Africanos de Língua Oficial Portuguesa / African Countries of Portuguese as the Official Language
PGRP	Plano de Gestão dos Recursos da Pesca / Fishery Resources Management Plan
PGRP	Plano de Gestão dos Recursos da Pesca / Fishery Resources Management Plan
PRAO-CV / WARFP	Projeto Regional das Pescas para a África Ocidental em Cabo Verde / West Africa Regional Fisheries Program
SERM	Secretaria de Estado dos Recursos Marinhos / Secretariat of State for Maritime Resources
SPS	Sanitary and Phytosanitary measures
SSA	África Sub-Sariana/ Sub-Saharan Africa
SWOT	Strengths, Weaknesses, Opportunities and Threats
SUCLA	Sociedade Ultramarina de Conservas Lda./Overseas Canning Company Ltd.
TBT	Technical Barriers to Trade
UN	United Nations
UNI-CV	Universidade de Cabo Verde / University of Cabo Verde
UNIDO	Organização das Nações Unidas para o Desenvolvimento Industrial / United Nations Industrial Development Organization
VAT	Value Added Tax
VCA	Value Chain Analysis
VMS	Vessel Monitoring System
WAQSP	Sistema da Qualidade da África Ocidental / West Africa Quality System Programme
WEF	World Economic Forum
WTO	World Trade Organization

Glossary

Adaptation: adjustment in natural or human systems, to a new or changing environment. Various types of adaptation can be distinguished, including anticipatory or reactive adaptation, private and public adaptation, and autonomous or planned adaptation.

Alien species: species introduced from outside the normal composition of species.

Aquaculture: breeding and rearing of fish, shellfish, plants in ponds, enclosures, or other forms of confinement in fresh or marine waters for the direct harvest of the product.

Catch: the number or weight of all fish caught by fishing operations, this includes fish that are counted in the landings, and those that are not.

Coastal system: systems that contain areas dominated by ocean influences of tide and marine aerosols.

Cost-benefit analysis: a technique designed to determine the feasibility of a project or plan, by quantifying its costs and benefits.

Demersal: living near, deposited on, or sinking to, the bottom of the sea.

Discards (fishing-related): the portion of catch hauled up by fishermen that is not retained and is instead returned to the sea, often dead, or dying.

Exclusive Economic Zone (EEZ): the sea zone surrounding a country or state, which the state in question has jurisdiction over. Within this zone, the state has special rights to explore and use marine resources. For the majority of countries, the EEZ stretches 200 nautical miles from the coast.

Fishing capacity (as defined by FAO): the amount of fish (or fishing effort) that can be produced over a period of time (e.g. a year, or, a fishing season) by a vessel or a fleet, if fully utilized.

Fishery fleet: the term "fishery fleet" or "fishery vessels" refers to mobile floating objects of any type, operating in freshwater, brackishwater and marine waters which are used for catching, harvesting, searching, transporting, landing, preserving and/or processing fish, shellfish and other aquatic organisms, residues and plants. The term "fishing vessel" is used instead when a vessel is engaged solely in catching activities.

Fishing gears: are tools used to capture marine/aquatic resources. Contrastingly, how the gear is used is the fishing method. Fishing gears fall under two general categories including (1) active gear and, (2) passive gear. (1) Active gears are designed to chase and capture target species, while (2) passive gears generally sit in one place allowing the target species to approach the capture device.

Governance: the process of regulating human behavior in accordance with shared objectives. The term includes both governmental and non-governmental mechanisms.

Gross tonnage: a measurement of total capacity expressed in volumetric tons of 100 cubic feet; it is calculated by adding the underdeck tonnage and the internal volume of 'tween-decks and deck space used for cargo. The measurement is used in assessing harbour dues and canal transit dues for merchant ships.

High seas: international waters outside the jurisdiction of any sole nation. High seas account for 64% of the world's ocean.

Inshore waters: waters from the coastline out to 12 nautical miles.

Landings (fishing-related): the part of the fish catch that is put ashore.
Marine aerosol: one of the most important natural aerosol systems globally. Primary aerosol production derives from the interaction of wind with the ocean's surface, and results in the mechanical production of sea-spray aerosol.

Marine system: marine waters covering those between the low-water mark and the high seas, that support marine fisheries, as well as deep-water (>50 meters) habitats. Four sub-divisions (marine biomes) are recognized, in the marine system, including: (1) the coastal boundary zone, (2) trade-winds, (3) westerlies, and (4) polar.

Mitigation: intervention to reduce negative, or unsustainable, uses of ecosystems.
Maximum sustainable yield: the largest yield, that can be taken from a stock before significant negative impacts on the stock's sustainability are felt.

Net primary productivity: the rate of biomass produced by an ecosystem, generally expressed as biomass produced per unit of time per unit of surface or volume. Net primary productivity is defined as the fixed energy of plants minus their respiration.

No-take zones: within these zones, all extractive and potentially damaging activities are prohibited. Marine reserves are no-take zones.

Nutrients: the chemical elements known to be essential for the growth of living organisms, including nitrogen, sulphur, phosphorus, and carbon.

Offshore waters: waters sitting beyond 12 nautical miles and approaching the EEZ.

Peddling (fishing-related): to sell (fish) usually in small amounts, often by traveling on foot to different places (street vending).

Pelagic: the area of ocean that is neither near to the shore nor the seabed (the open ocean).

Population (biological): a group of organisms of the same species, occupying a defined area, and usually isolated to some degree from other similar groups. Populations can be relatively isolated and adapted to local environments.

Resilience: the level of disturbance that an ecosystem can undergo before crossing a threshold to a situation of different structure and/or outputs. Resilience depends on ecological dynamics as well as the organizational and institutional capacity to understand, manage, and respond to these dynamics.

Salubrity: conducive or favorable conditions to health or well-being.

Sanitary and phytosanitary measures: a subset of regulations that have the specific aim to protect human, plant, and animal health. Sanitary measures are those related to human or animal health, and phytosanitary measures are those related to plant health.

Species: an interbreeding group of organisms that are reproductively isolated from other organisms, although, there are many partial exceptions to this rule within particular taxa. Operationally, the term 'species' is a generally agreed fundamental taxonomic unit, based on morphological or genetic similarity, that once described and accepted is associated with a unique scientific name.

Stock (fishing-related): the population, or biomass, of a fishery resource. Such stocks are usually identified by their location. They can be, but are not always, genetically discrete from other stocks.

Supporting services: the services that are necessary for the production of all other ecosystem elements. Some examples include biomass production, production of atmospheric oxygen, soil formation and retention, nutrient cycling, water cycling, and provisioning of habitat.

Sustainable use (of an ecosystem): human use of an ecosystem so that it may yield a continuous benefit to present generations, while maintaining its potential to meet the needs and aspirations of future generations.

Sustainability: a characteristic, or state, whereby the needs of the present and local population can be met without compromising the ability of future generations or populations in other locations to meet their own needs.

Upwelling: wind-driven movement of the ocean, causing cooler, denser water to rise to the surface and replace warmer waters. The cool waters are often rich in nutrients and stimulate primary production, which is why upwelling areas are often hotspots for marine life and targeted by commercial fisheries.

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Thanks is extended to all cluster actors involved in this study who have offered their unreserved cooperation by providing relevant information during the interview process and by answering the questionnaires. The author would also like to extend gratitude to the cooperative members of the UNIDO team for devoting their time during field work exercises, and for the support provided throughout preparation of this document.

ABSTRACT

The report is the result of an assessment of the Cabo Verdean fisheries sector. The report was discussed with UNIDO experts as well as public and private sectoral actors in Cabo Verde in late 2015. The research collated as a result of the first field mission to Cabo Verde (26 October – 3 November 2015) including qualitative and quantitative data collected through in-depth interviews and individual questionnaires[1], along with a desk review of the relevant literature, has informed the basis of this report.

The Cabo Verdean fisheries sector plays an important role in the national economy; contributing significantly to employment, livelihoods, food security, and to overall GDP. However, there are still abundant opportunities in terms of upgrading the sector to a more optimal situation for development and sustained economic growth. The following report recommends interventions in fisheries value chains, to achieve this.

The main segments of this report are:

(i) a value chain assessment

(ii) value chain analysis of post-harvest operations and end-markets of fisheries products

(iii) an investigation into quality and traceability aspects of the fisheries value chain

(iv) cluster mapping of the fisheries sector

(v) identification of potential synergies with existing and new stakeholders

(vi) recommendations as a result of the research conducted.

1 See ***annex III*** for the list of stakeholders involved in the field research.

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I. INTRODUCTION

Overall context

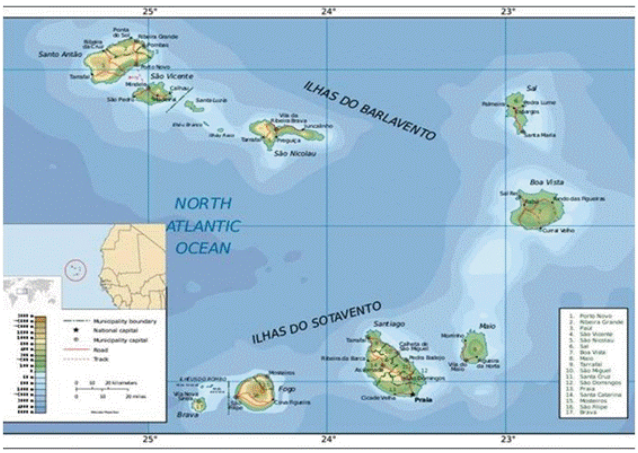
In 2015, the government of Cabo Verde selected the maritime industry, particularly, the development of a sea cluster, as a main driver of its strategy for economic and social development. The Sea Cluster Initiative (SCI) has taken on an institutional framework, whereby a cluster coordinator has been appointed. Since the establishment of the SCI and appointment of a coordinator, multiple private sector actors have also become interested in the work of the SCI. A strategic plan for the SCI is underway, and the main tenants of this will include bunkering, ship repair, container transhipment hub(s), fisheries, transhipment of fish products, registry and clearance of ships and marine research. Moreover, the SCI strategy has three pillars: (1) institutional reforms and capacity building, (2) infrastructure and equipment, and (3) human resources development. As a result of the Maritime Cluster Coordinator's request, the report responds to the SCI strategy by outlining UNIDO's potential to offer technical assistance for the realization of the strategy as well as Cabo Verde's broader national development vision.

Country and policy context

Cabo Verde's small size, its geographical isolation, and its lack of natural resources, mean that traditional development possibilities are limited. The country is a string of volcanic islands that are natural resource-poor, prone to drought, and have negligible arable land. Cabo Verde is dependent on food imports, sometimes in the form of aid. One of Cabo Verde's most notable characteristics is the geographical dispersion of the islands, with small populations spread over a relatively wide area. Cabo Verde is much more vulnerable to external shocks than its Economic Community of West African States (ECOWAS) neighbours, since its economy is strongly dependent on the international economy.

Only nine islands are inhabited and the country has an estimated population of 491,875 according to the 2010 Census (INE). The national population is concentrated on Santiago Island (55.7% of the population), where approximately half of the people live in Praia, the capital city (25.6% of country's population). The second largest city is Mindelo (15% of country's population), located on São Vicente Island, and Mindelo houses the country's main port. The distance between the capital Praia in Santiago and the second most important town, Mindelo, (with an estimated population of 76,140) is 200 km. The same distance separates Praia from the main airport on Sal Island. All but three of the islands are quite mountainous, with prominent cliffs and deep ravines. Cabo Verde has 4,033 km2 land area, most of which is bare and organically poor due to very low and variable values of precipitation. Cabo Verde spans the latitudes of the Sahel with a similar arid climate. The country suffers from severe environmental degradation, including soil erosion, and low fertility, deforestation, and lack of fresh ground water. Faced with unfavourable natural conditions, agricultural production has traditionally been largely insufficient to meet domestic demand for food. Since the last decade, major public investment has been allocated to the construction of dams to promote irrigation. Only an estimated 10% of the land area is suitable for agriculture. The country's Extended Economic Zone (EEZ) extends 734,265 km², and the coastline to approximately 1,020km. The country has already presented a collective proposal along with other regional countries, with the support of the Norwegian cooperation, to the UN specialized committee, in order to advocate extending the limits of its continental shelf.

Figure 1- Map of Cabo Verde



Source: African Development Bank (2014)

Nonetheless, Cabo Verde has experienced significant growth since independence in 1975. Its successful socio-economic development during the last decade is widely recognized: despite its vulnerability, the small size of its population, its dry Sahel climate, and scarce natural resources, the country recorded one of the most impressive socio-economic development performances in Africa and graduated out of the UN Least-Developed Country (LDC) category in 2007. In the last decade,

tourism has become the most important component of Cabo Verde's Gross Domestic Product (GDP). However, the fisheries sector leads with the most goods exported. In 2009, for example, fisheries accounted for almost two thirds of total exports of goods from Cabo Verde, while tourism made up almost 20% of GDP, according to data from several sources (IMF 2014; World Bank and INE 2014). Since the national economy is heavily dependent on external influences and factors including aid, the international economic climate and trade flows, 'home-grown' private sector development solutions, such as cluster initiatives as advocated for by the SCI strategy, provide a helpful opportunity for development and sustainable growth.

Cabo Verde is looking to diversify its productive base, and move away from relying on tourism. This requires rethinking the country's development and financing strategies, and taking advantage of its geographical location between continents. Again, the report will outline how this could be achieved by boosting the private sector, and accelerating the implementation of the transformation agenda to diversify the economy. Structural reforms, such as a more efficient organization of local production of goods and services, the creation of a quality certification system for local products, and improvement of the inter-islands transportation systems are necessary, in order for the nation to reap broader economic benefits.

Correspondingly, since 2003, Cabo Verde has embarked on the implementation of its Economic Transformation Strategy (ETS), which was shaped through the different generations of Growth and Poverty Reduction Strategy Papers (GPRSPs) launched by the Cabo Verdean government. The ETS is a national long-term national development vision that seeks to transform Cabo Verde into an emerging economy and has seen some successes, such as graduating out of the LDC category. The key feature of the transformation strategy is its emphasis on creating competitive advantage out of Cabo Verde's natural resources, namely, its location and marine resources. The ETS utilizes Cabo Verde's geostrategic location[2], Africa, Europe, and North and South America, with the overall aim of becoming an international hub for high value-added services for maritime industries. Consequently, the report outlines that adoption of collective efficiency tools would increase the impact of the Economic Transformation Strategy (ETS); in particular, clusters offer promising environments for SME development and are an important instrument of industrial development. Due to their small size, individual MSMEs are often unable to realize economies of scale and thus find it difficult to take advantage of market opportunities that require the delivery of large stocks of standardized products, or compliance with international standards (UNIDO 2013). Cluster development initiatives help MSMEs overcome these barriers and power innovation. Likened to the ETS, the strategy advocates for the development of 7 clusters: (1) tourism: promoting high value-added tourism, (2) maritime: building a maritime economy around fisheries, transhipment, and marine services, (3) aerospace: making Cabo Verde a regional hub for air cargo and passengers including duty-free shopping and airline services, (4) Information Technology: promotion of (a) 'cyber-island(s)', developing and offering services in the ICT sector,(5) finance: making Cabo Verde a centre for financial and investment services, (6) creative industries: building an export-oriented service industry incorporating Cabo Verdean culture and cultural activities, and (7) agri-business: promoting agri-business activities and enterprises, including facilitating linkages within the tourism value chain. Interestingly, almost all of the clusters have the potential to function as driving-forces for green-growth and eco-innovation. The clusters could function as eco-clusters, under the appropriate policy environment.

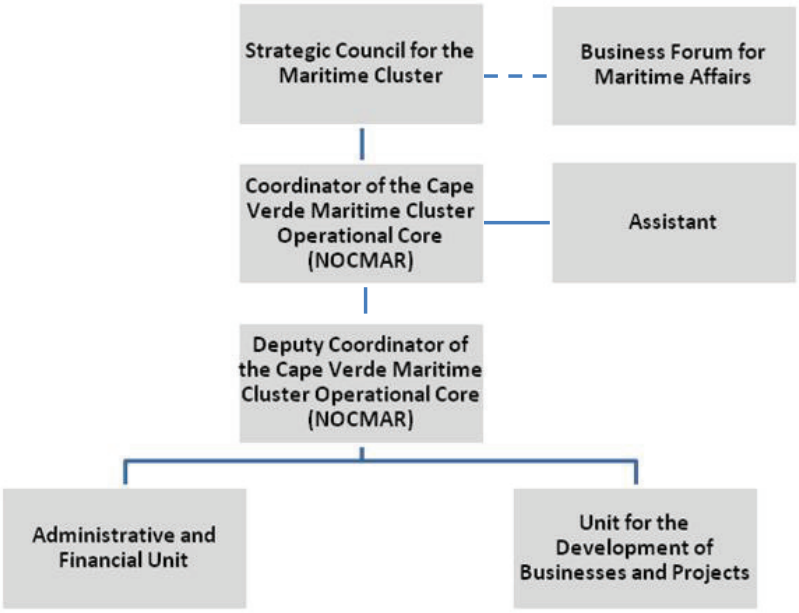
Figure 2- The geostrategic positioning of Cabo Verde

Source: NOCMAR

2 Even though the nation geographically belongs to Africa, the archipelago also integrates the greater area of Macaronesia including the Azores, Madeira and Canary Islands. It is an archipelago made up of 10 islands and several islets. The islands, which are generally divided into a northern (Barlavento: windward, comprising Santo Antão, São Vicente, Santa Luzia, São Nicolau, Sal, Boa Vista) and a southern group of islands (Sotavento: leeward, consisting of Maio, Santiago, Fogo, Brava), are of volcanic origin, rising from depths of at least 3,000 meters.

The maritime cluster is often referred to as the ***hyper cluster***, since it incorporates several cluster activities in itself, as evidenced by ***figure 3*** and ***table 1***, below.

Figure 3– Organizational structure of the maritime cluster



Source: NOCMAR

Table 1- Attributes of the maritime cluster

Strategic Council for the Maritime Cluster	Approve the Strategic Maritime Cluster Plan	Propose the legislative measures and policies related with maritime affairs	Facilitate communication and dialogue between the private and public sectors	Promote favorable conditions to attract private investments
Business Forum for the Maritime Affairs	Promote an intersectoral and multidisciplinary vision of maritime affairs	Contribute to the knowledge, dissemination and awareness on maritime affairs	Contribute for the promotion and dissemination of maritime activities	Stimulate the promotion of maritime affairs education
Maritime Cluster Operational Core	Elaborate the Strategic Maritime Cluster Plan	Elaborate and propose annual and multiannual activity plans and secure their execution	Stimulate and support activities, investments and business opportunities	Mobilize partnerships and public and private financing

Source: NOCMAR

These activities are of growing importance for social development, since employment opportunities, especially for those living in coastal communities where alternative employment opportunities are still very scarce, are unearthed. The latest recorded data from 2011 indicates that the fisheries sector directly employed 4% of the total working population, or 177,000 people. More than 6,000 of those employed by the fisheries sector were young people and female heads of households utilising their employment to support their livelihoods (MTIE 2015).

Although Cabo Verde is not self-sufficient in terms of food supplies, and as a consequence has to import nearly 80% of its edibles (AICEP 2013), there are plenty of opportunities to further develop the national food-stuffs sector. Since 2005, government actions in the fisheries sector are guided by the Fishery Resources Management Plan (***Plano de Gestão dos Recursos da Pesca***, or PGRP). The PGRP is concerned with the management of the country's fishery resources, specifically, in terms of how they can be best manoeuvred to achieve maritime cluster- and development- goals. The PGRP is grounded on a concern for the status of fishery resources: resources are invaluable for achieving other sustainable development goals. Thus, according to this premise, three sequential domains of intervention have been established:

1. Establishment of knowledge about the status and evolution of resources.
2. Creation of systems for managing and developing fishing activities.
3. An efficient fisheries administration, with adequate monitoring, surveillance and evaluation capacities in place.

Daily fishing activities occur around the islands and islets near the coast. Species such as tuna, small coastal pelagic, lobsters and other species of demersal fish are targeted. However, to maximise market access of these fisheries products, Cabo Verde can promote necessary investment in resource management, harvest and post-harvest technology, and, quite importantly, in quality infrastructure that is required to meet global food safety standards. As a consequence, the Cabo Verdean fisheries industry would become competitive and sustainable.

The following study provides a snapshot of the current dynamics of the marine fisheries value chain: from fishing to reaching the end market, including examining supporting service activities, business enabling environments, and the socio-economic factors at play. The report identifies potential areas for future interventions and development of the marine fisheries value chain overall.

Research objectives

One species, or multiple species, can be followed through the commodity chain, looking at a single village, a whole region, or an entire country. Value chain analysis is particularly useful for new producers entering both domestic and global markets. It is used as an analytical tool for fisheries administrations in order to understand and influence the policy environment that would provide efficient allocation(s) of resources within the economy, as well as to maximise value, and prevent post-harvest losses. However, Cabo Verde's small island artisanal fisheries, as well as regional coastal artisanal fisheries, currently experience inefficiencies due to the sectors highly diverse nature: from depletion of some important fish stocks, to overpopulation of others.

The report contributes to local knowledge about the sector and informs future initiatives. During the value chain mapping analysis section of this report, the following concepts, highlighted by Chuong (2011), were used:

- **The total cost:** the production or processing costs that a company will spend producing their commodity.
- **The purchase price:** what a company pays for the product that they will process, trade or sell. For producers, the purchase price is equal to the total cost as they do not buy the raw product but harvest it.
- **The selling price:** how much the company sells their product for, to the next actor in the value chain.
- **The profit**: the difference between the price the company sells their product for and the cost it took them to produce it [Profit= Selling Price- Total Cost].
- **The margin:** the portion or percentage of the final selling price that is profit, a high margin reflects high profitability [Margin= Selling Price - Purchase Price].
- **Added cost:** how much it costs a company to buy or produce a product. It reflects the effort of chain actors to add value to the final product [Added Cost= Total Cost - Purchasing Price].

The report uses these concepts in description of, and

analysis of, the current situation of Cabo Verdean fisheries activities as well as during the presentation of recommended activities at the end of the report.

Methodology

Study location

The study was conducted in Cabo Verde on the islands of São Vicente and Santiago, however, the findings and recommendations contained in this report are applicable across the country and could be applied to similar country-contexts focusing on the fisheries sector.

Study period

The study was conducted for a period of 1.5 months from the end of October to December 2015.

Sample size

Annex III contains a list of stakeholders and detailed information about the different meetings that took place during the first field mission[3]. The following report was compiled using the sample of stakeholders outlined in *table 2*.

Table 2- Sample details of the first mission assessment survey

Stakeholder type	No. of stakeholders contacted	No. of field interviews carried out	Questionnaire	
			A	B
Fishing boat-owners	4	4		4
Fish processing companies	1	1		1
Aquaculture entre-preneurs	1	1	1	
Professional fishing associations	1	1	1	
Governmental departments	3	3	3	
Public agencies / public institutes	6	6	6	
Public companies	2	2	2	
Private consultants	2	2	2	
Chambers of commerce	1	1	1	
Universities/ professional training institutions	2	2	2	
International organizations	5	5	5	
TOTAL	**28**	**28**	**28**	

Source: Author's own.

Data analysis

A univariate statistical technique is used for data analysis of the questionnaires returned by stakeholders. The results are presented through distribution of relative frequencies. The concentration of frequencies in certain categories serves as an indication for a trend of data homogeneity, surveyed, with respect to a particular attribute. In other words, when a greater concentration is observed within a certain category, a basis for the design of a type profile is assumed.

3 Both in-depth interviews and individual questionnaires were used during the mission. Type A questionnaires were used for institutional stakeholders, and Type B for economic operators (examples of the questionnaires used are given in ***annex I*** and ***annex II***).

II. CABO VERDE: AN OVERVIEW

Macroeconomics, the legal framework for enterprises and international positioning

Cabo Verde has made significant strides in recent years, moving up in the World Economic Forum's (WEF) Global Competitiveness rankings from 146th place in 2010 to 122nd in 2012. However, labor market inefficiency, lack of financial markets development, and macroeconomic environment are found to be particular challenges that impede the country's competitiveness and overall economic growth. As previously mentioned, Cabo Verde is highly dependent on the international economy. Moreover, as an archipelago with several uninhabited islands, the country does not have a unified domestic market, which adds to its costs of insularity. In this vein, cluster initiatives are efficient policy instruments that have been explored by the Cabo Verdean administration to be used to minimize these costs because they allow for a concentration of resources and funding in targeted areas with high growth and development potential that can spread beyond the target locations (spillover and multiplier effects). With these initiatives in place, bottlenecks that constrain the growth of small-scale business are thereby more easily removed, triggering performance improvements in economic, social and environmental respects.

While the nation's external position has improved, Cabo Verde remains vulnerable to external shocks due to increasing debt and challenges to competitiveness. National public debt is approaching 100% of GDP, and in March 2014, Fitch, downgraded Cabo Verde's long-term foreign and local currency ratings from B+ to B, citing a significant deterioration in its fiscal outlook and an even weaker outlook for its economic growth. Cabo Verde's high dependence on tourism, external trade, and remittances, points to significant external vulnerabilities. Goods and service exports have increased steadily during the period 2003–2012 (from about 30% to 45% of GDP), but remain heavily dependent on tourism and related travel activities: two thirds of total exports (IMF 2014).

One of the structural problems the country faces is the cost of inter-island transportation, which is on average one and half times higher than the cost of transportation between Lisbon and Praia. For example, supplying the main tourist island of Sal—which has almost no agriculture or industry—is often easier and cheaper from the Canaries or Lisbon (by air) than from other islands within Cabo Verde itself, which may have an agricultural or fish surplus.

The constraints of insularity also affect the energy sector, to the extent that the non-isolation of the electric grids on the various populated islands necessitates the construction of a power generation plant on each island. According to the African Development Bank (2012), this weakness became evident during the 2008 global crisis when tourism revenue (and FDI dwindled (a 7% decrease and 40% decrease in 2008-2009, respectively), thereby decelerating GDP growth to almost 5% in 2009. Cabo Verde's source of economic growth includes tourism, tourism-related foreign investment, and construction, is evidenced in ***table 2***. The health of these sectors is determined by the international economy, and particularly the European market.

Table 3- GDP by sector (percentage of GDP at current prices)

	2009	2014
Agriculture, forestry, fishing & hunting	9.5	9.4
of which fishing	1.1	0.8
Mining and quarrying	0.6	0.4
of which oil	...	0.0
Manufacturing	5.6	6.5
Electricity, gas and water	1.8	2.3
Construction	13.9	10.4
Wholesale & retail trade; repair of vehicles household goods; Restaurants and hotels	18.0	20.8
of which hotels and restaurants	3.9	6.5
Transport, storage and communication	17.5	15.5
Finance, real estate and business services	17.5	17.9
Public administration and defence	15.5	16.8
Other services	0.0	0.0
Gross domestic product at basic prices / factor cost	**100.0**	**100.0**

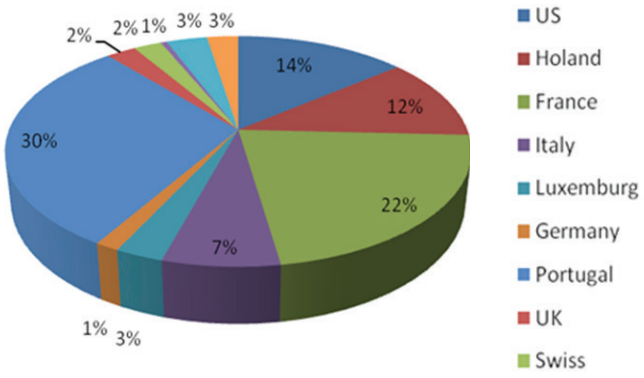
Source: Nshimyumuremyi and Marone (2015).

FDI has become one of the most important sources of external financing for Cabo Verde's economy, especially in light of dwindling Overseas Development Assistance (ODA) and remittances. Since the mid-1990s the main driver of growth for Cabo Verde was Foreign Direct Investment (FDI), with European countries providing the largest share: 45% of FDI came from Spain, Portugal, the United Kingdom and Italy combined (***figure 4***). In 2008, around 30% of all remittances

came from Portugal, ahead of France, the USA and the Netherlands. It is estimated that the number of Cabo Verdean emigrants, mainly in the USA, Portugal, Angola, France, Netherlands, and Senegal exceeds the actual Cabo Verdean national population. In total, more than 80% of remittances are from diaspora living in Europe (***figure 4***). Emigrants' remittances, although decreasing as a share of GDP, currently represent 20% of GDP, but from 2001 to 2011 represented on average 10% of GDP. As can be inferred from these figures, remittances continue to play an important part in financing the national economy (República de Cabo Verde 2012b). The Cabo Verdean diaspora, thus become an important niche market for Cabo Verdean exports. The diaspora marke are important in two ways: first, as a consumer market for Cabo Verde products, and, second, as a market catalyst and initial point of entry for Cabo Verdean firms.

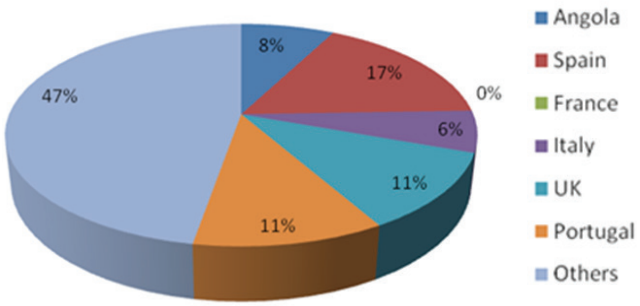
With regard to the business environment, the Office of National Statistics (INE), had registered, 9,049 active businesses in Cabo Verde in 2013, employing some 50,975 workers in total, as per annual enterprise survey data. Specifically, 78% of registered businesses and 91% of the employees were on the islands of Santiago, São Vicente, Sal, and Boa Vista. With further relevance, other INE studies repeatedly conclude that Cabo Verde possesses a highly fragmented industrial sector. The majority (97%) of firms are MSMEs, as evidenced below in ***table 4***. However, there is a healthy outlook for Cabo Verdean goods and service exports, since they account for significant official financing inflows (as shown in ***table 5***). However, in 2014 the trade deficit increased slightly to 35% of GDP. This pattern reflects the Cabo Verdean growth model based on high import content. It also adds to freight costs, as containers have to return empty. Imports are primarily consumer goods (including food), followed by fuel, and capital goods (***figure 4***) and a large majority of goods are imported, or transhipped, from the EU (***figure 6***). The EU is the country's main trading partner, with fish and fishing products as main exports to this market (70%). Spain is Cabo Verde's main trade-partner; accounting for two thirds of total merchandise exports (***figure 5***). The EU is also Cabo Verde's main trading-partner in terms of imports, where Portugal's share of imports is more than 43%, being the single largest importer of Cabo Verdean products, followed by the Netherlands at 21.2% (***figure 5***).

Figure 4- Remittances by country (2008) (%)



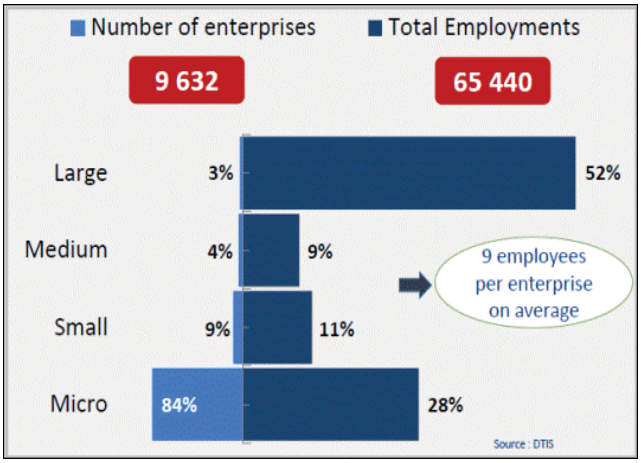
Source: República de Cabo Verde (2012).

Figure 5- FDI flows by country



Source: República de Cabo Verde (2012).

Table 4- Profile of the Cabo Verdean entrepreneurial activities



Note: micro – up to 5 employees; small – between 5 and 10 employees; medium – between 10 and 50 employees; large – more than 50 employees

Source: Ndiaye (2014).

Table 5- Current account (percentage of GDP at current prices)

	2006	2011	2012	2013	2014(e)	2015(p)	2016(p)
Trade balance	-37.2	-45.1	-40.2	-34.5	-35.0	-29.7	-29.2
Exports of goods (f.o.b.)	6.8	10.6	10.0	10.9	9.6	10.1	10.1
Imports of goods (f.o.b.)	44.0	55.7	50.2	45.4	44.6	39.7	39.3
Services	12.5	13.5	17.9	19.4	15.7	14.8	13.9
Factor income	-3.6	-3.9	-4.0	-3.6	-4.9	-4.2	-2.6
Current transfers	23.5	19.2	14.9	15.2	15.2	10.5	9.9
Current account balance	**-4.8**	**-16.3**	**-11.5**	**-3.5**	**-9.0**	**-8.6**	**-7.9**

Source: Nshimyumuremyi and Marone (2015).

Although Cabo Verde belongs to ECOWAS, its share of the bloc's trade is insignificant, as is its trade with African continent overall. Cabo Verde's regional trade with other ECOWAS countries appears to be relatively insignificant, accounting for 1.2% of total imports and 0.1% of Cabo Verdean exports in 2014. Under exports there are two main concerns: (1) Cabo Verde's minimal export-base and (2) the lacking number of export markets. The country's economy seems to be solely specialized in two economic sectors: tourism (almost always with European countries), and fish and fish products (destined for Spain and Portugal).

In 2011, the top 30 exporters (companies) were responsible for 99.99% of overall national exports, with Frescomar, the most dominant exporter, responsible for 42% of total exports. Two exporters contribute more than 75% of total exports (***table 5***). Over the past three years, the dominant 30 exporters have increased market share, as Frescomar and Calvopesca have continued to see larger sales. Their domination of the export market is also reflected in the most-exported products, as per ***table 6.***

On a theoretical level, drawing on the work of Robert Solow (1957) in ***Technical Change and the Aggregate Production Function***, the International Monetary Fund (IMF) (2014) tries to explain the dynamics of recent economic growth in Cabo Verde using a growth accounting framework that decomposes output growth into (i) the contributions from increases in the amount of factor inputs—namely physical capital, and human capital-augmented labor—and (ii) the residual growth that cannot be accounted for by observed increases in factor inputs.

A decomposition of Cabo Verde's growth since the mid-1980s indicates that Total Factor Productivity (TFP)'s[4] contribution to economic growth has been relatively small and declining in recent years. TFP has fluctuated in line with economic growth, and its decline in the late 20th century coincided with the economic downturn. One possible justification could be that while the contribution of capital accumulation to output growth has increased, the contribution of human capital has been small and steady over time. To ameliorate its competitiveness, the author suggests that Cabo Verde should pursue a more harmonious economic growth model and implement specific policies that aim to increase the contribution of the stock of human capital, for instance, through sustained vocational education and training. Tangible recommended activities, in line with this suggestion are explored later in the recommendations section of the report.

4 The contribution of capital input is calculated from the estimated capital stock—using the standard perpetual inventory model with geometric depreciation—weighted by the income share of capital. Meanwhile, the contribution of human capital-augmented labor input is derived from the estimated human capital stock—using the average educational attainment of the employed labor and the estimated returns to education—weighted by the income share of labor. With this growth decomposition, the growth residual indicates a change in technological progress and is known as total factor productivity (TFP). TFP affects economic growth through improvement in resource allocation, innovation, and productivity of each of the factor inputs. Therefore, rising TFP provides an economy with the opportunity to grow more efficiently, and thus, more sustainably in the long run.

Figure 6- Trade in goods and services, 2012

Cape Verde Top 10 imports, 2012

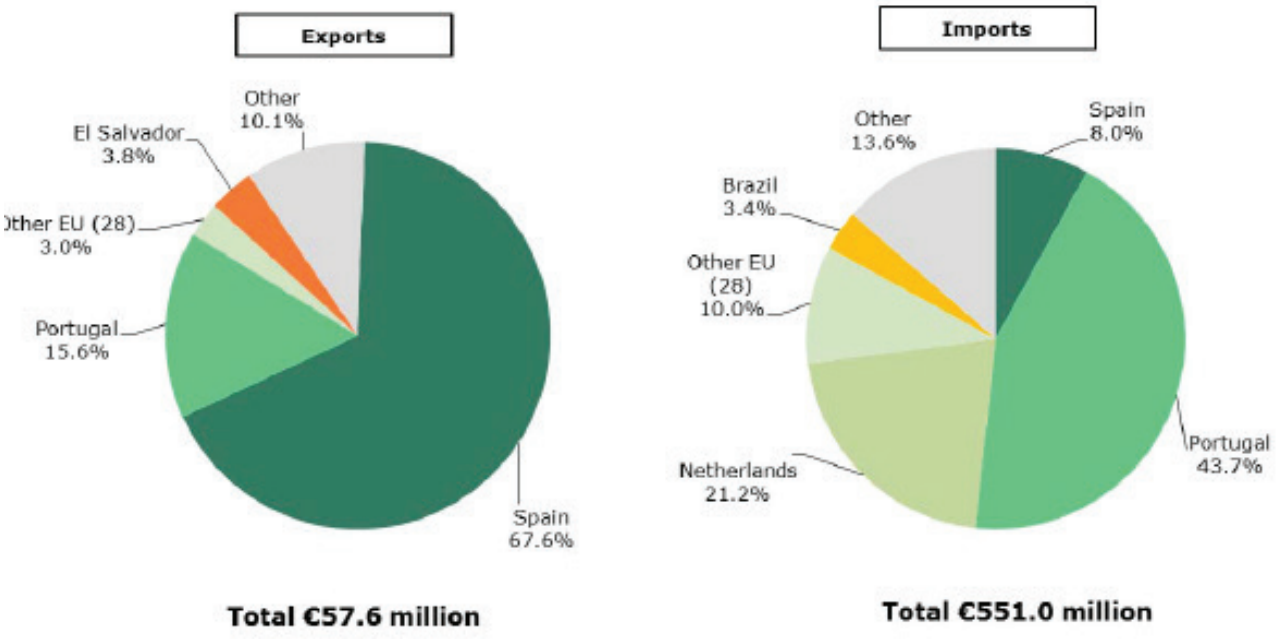
Products (H.S. 4)	2012 (EUR Million)	*Share (%)*	$CAGR_{07-12}$ (%)
2710 - Petroleum Oils And Oils Obtained From Bituminous Minerals (Excl. Crude); Preparations Containing >= 70 % By Weight Of Petroleum Oils	75.5	9.2	7.9
8802 - Powered Aircraft "E.G. Helicopters And Aeroplanes"; Spacecraft, Incl. Satellites, And Suborbital And Spacecraft Launch Vehicles	44.8	5.5	4.1
2523 - Cement, Incl. Cement Clinkers, Whether Or Not Coloured	36.0	4.4	-1.9
1006 - Rice	17.5	2.1	6.3
7214 - Bars And Rods, Of Iron Or Non-Alloy Steel, Not Further Worked Than Forged, Hot-Rolled, Hot-Drawn Or Hot-Extruded, But Incl. Those Twisted After Rolling	16.1	2.0	1.5
1507 - Soya-Bean Oil And Its Fractions, Whether Or Not Refined (Excl. Chemically Modified)	15.9	1.9	16.2
0402 - Milk And Cream, Concentrated Or Containing Added Sugar Or Other Sweetening Matter	13.9	1.7	-0.7
9403 - Furniture And Parts Thereof, N.E.S. (Excl. Seats And Medical, Surgical, Dental Or Veterinary Furniture)	13.4	1.6	11.4
8703 - Motor Cars And Other Motor Vehicles Principally Designed For The Transport Of Persons	13.0	1.6	-4.7
3004 - Medicaments	11.9	1.4	2.2

Cape Verde Top 10 exports, 2012

Products (H.S. 4)	2012 (EUR Million)	*Share (%)*	$CAGR_{07-12}$ (%)
1604 - Prepared Or Preserved Fish; Caviar And Caviar Substitutes Prepared From Fish Eggs	17.7	35.5	139.1
0303 - Frozen Fish (Excl. Fish Fillets And Other Fish Meat Of Heading 0304)	15.7	31.5	16.9
6406 - Parts Of Footwear, Incl. Uppers Whether Or Not Attached To Soles Other Than Outer Soles; Removable In-Soles, Heel Cushions And Similar Articles	6.8	13.6	8.5
2201 - Waters, Incl. Natural Or Artificial Mineral Waters And Aerated Waters, Not Containing Added Sugar, Other Sweetening Matter Or Flavoured; Ice And Snow	2.5	4.9	121.8
0306 - Crustaceans, Whether In Shell Or Not, Live, Fresh, Chilled, Frozen, Dried, Salted Or In Brine, Even Smoked	1.7	3.3	24.7
6109 - T-Shirts, Singlets And Other Vests, Knitted Or Crocheted	1.7	3.3	3.4
6107 - Men'S Or Boys' Underpants, Briefs, Nightshirts, Pyjamas, Bathrobes, Dressing Gowns And Similar Articles, Knitted Or Crocheted (Excl. Vests And Singlets)	1.2	2.5	-7.8
6203 - Men'S Or Boys' Suits, Ensembles, Jackets, Blazers, Trousers, Bib And Brace Overalls, Breeches And Shorts (Excl. Knitted Or Crocheted)	1.1	2.1	-29.3
2208 - Undenatured Ethyl Alcohol Of An Alcoholic Strength Of < 80%; Spirits, Liqueurs And Other Spirituous Beverages	0.7	1.4	0.3
3004 - Medicaments	0.2	0.4	198.2

Source: Espirito Santo Research (2013).

Figure 7- Merchandise trade by destination and origin, 2014



Source: WTO (2015).

The financial system

Eight local banks control over 80% of the country's financial assets. These eight (8) banks have a network of over 100 branches across the country, with at least one bank on every inhabited island. Various microfinance institutions also exist, which try to compete with, and look to fill in the gaps, left by large commercial banks, particularly among customers from lower income groups. Interestingly, the ***Doing Business Report (2016)***, underlines Cabo Verde's rank of 109 out of 189 countries in terms of ease of doing business (which compares with its 126 rank in 2012) and the report emphasises a Distance To Frontier (DTF)[5] score of 40 (0-100) for getting credit. However, a large majority of SMEs in Cabo Verde continue to complain of a crippling weakness when it comes to accessing the credit that they need to finance investments.

Interviews conducted during the missions that this report is based on offer answers that reiterate this complaint. The overwhelming majority of participants cited having some form of obstacle, including high interest rates, unwillingness on the banks part to issue credit to MSMEs, and inability to meet the stringent requirements of banks in order to guarantee loans, in their experiences of trying to access credit. The survey of MSMEs conducted under the remit of this study, also revealed that business owners are largely unaware of the benefits, programmes and financial support systems available that are specifically in place for their benefit, (such as ADEI). From the perspective of the commercial banks, the conundrum is simple: the same constraints that keep banks from offering credit in every country operate in Cabo Verde. Asymmetry of information and lack of guarantors and collateral make extending credit to operators in developing countries, and especially to MSMEs, a very risky business.

5 The Distance To Frontier score captures the gap between an economy's performance and a measure of best practice across the entire sample of 31 indicators for 10 Doing Business topics (the labor market regulation indicators are excluded).

Table 6- Top 30 exporters 2011-2009 (unit: USD)

Top 30 Exporters 2011-2009[164]							
Ref	Entity Name	2011		2010		2009	
		Value	Weight	Value	Weight	Value	Weight
1	FRESCOMAR, SARL	2.418.149	4.279.263	1.528.113.	2.859.485	929.562.5	1.936.999
2	CALVOPESCA ATLANTICO, SA	1.914.239	13.529.87	1.229.794.	9.250.557	883.977.8	8.043.668
3	ICCO - INDUSTRIA DE	380.139.5	67.168	350.207.79	55.503	248.746.3	38.938
4	CIC - COMPANHIA DE	323.627.7	4.850.000				
5	VERDEVESTE - INDUSTRIA DE	256.768.7	107.919	199.606.59	94.717	209.188.2	101.425
6	EUROAFRICA, LDA.	207.262.4	109.863	212.156.65	112.742	240.236.7	182.639
7	SALPESCA, LDA	53.697.95	12.480	10.066.753	1.902		
8	INDUPESCA, LDA	39.942.77	71.332	54.045.888	81.522	13.341.44	3.042
9	LABORATORIOS INPHARMA -	34.673.10	17.785			213.304	157
10	Oliveira & Oliveira, Lda	18.129.54	55.677	19.817.900	59.030	14.065.04	44.857
11	Padaria Victoria	12.430.01	67.399	2.957.998	16.360	6.590.412	36.221
12	CABO VERDIAN - SCANDINAVIAN	12.016.68	24.335				
13	PALMEIRA PESCA, LDA	11.481.40	98.524				
14	PIMENTA E LOPES, LIMITADA	6.812.503	23.872	7.006.900	26.792	7.709.130	35.139
15	JOAO MONTEIRO E FILHOS, LDA	5.960.560	10.462	7.372.336	15.150	16.427.74	31.644
16	GREENFISH - IMPORTAC?O E	5.899.178	2.347				
17	CASA NHA TERRA - IMPORTACAO E	4.647.536	17.452	4.126.368	18.636	1.931.728	8.344
18	ALCANE, LDA - SOCIEDADE	4.317.681	12.522				
19	CAVIBEL - INDUSTRIA DE BEBIDAS/	3.938.750	71.288	20.005.100	200.965	2.341.368	51.000
20	MOURA COMPANY - IMPORTACAO	2.800.000	3.200.000				
21	DOM PINA SOCIEDADE	2.559.802	6.680	3.640.068	9.880	3.640.068	10.673
22	SOCOMIMO - SOCIEDADE	2.500.227	12.500	520.047	2.600	5.132.466	25.660
23	GOMES E GOMES, IMPORTAC?O E	2.404.108	6.200	1.820.165	9.100		
24	CVCAN - IMPEX, LIMITADA	2.116.603	26.080				
25	GOTAS DE FURNAS - AGUARDENTE	1.955.329	6.239	1.717.223	4.674	2.302.002	3.540
26	BOLHAS AGUA, LDA	1.720.134	4.200				
27	FAMA - FABRICA DE MASSAS	1.680.969	15.320	2.682.276	7.375	196.801	1.500
28	GIMPORT -	1.277.642	9.085				
29	SISA, SARL -SOCIEDADE	1.026.752	1.654				
30	GUIBARRA WINES, SOCIEDADE	922.299	750				
	TOTALS (for Top 30)	5.735.099	26.718.26	3.655.658.	12.826.99	2.585.603	10.555.44
	Top 30 Percent of Total Annual Exports	100%	100%	99%	99%	93%	98%

Source: MTIE (2015).

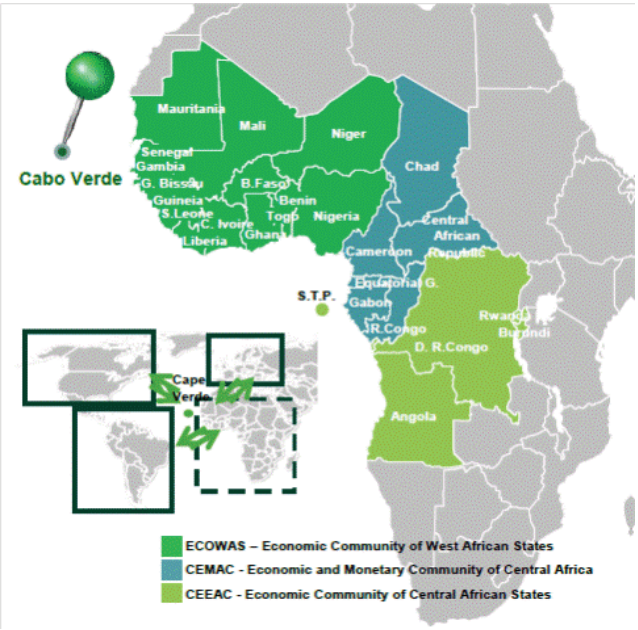
In addition to the basic problems of asymmetry of information and lack of collateral and guarantors, most commercial banks in the country do not create lines of credit that are oriented towards financing production activities, such as those in the agri-business and/ fisheries sectors, their financing opportunities are generally limited to the purposes of commercializing, as commercializing is an inherently less risky business activity than production, and is characteristic of more mature and stabilized companies. Thus, the Cabo Verdean banking market is still limited to 'classic' products and services. Although there are 8 (5 of which are on-shore banks) operating in the country, with products focused on financing exports, other forms of internationalization of Cabo Verdean companies are incipient or non-existent. As a consequence the competitiveness of exporting companies that cannot design more attractive payment terms are reduced, export operations are associated with deficient or non-existent protection against financial risks, and costs of exports increase, and competition is ultimately reduced.

International relations

Cabo Verde became part of the ECOWAS[6] in 1976 (*figure 7*), as the only archipelago country in the sub-region. Cabo Verde also hosts the West Africa Institute for International Research on Regional Integration and Social Transformations and the ECOWAS Centre for Renewable Energies (ECREEE). On the 30th of March 1980, a group of African Portuguese-speaking countries including Cabo Verde, amongst others (Angola, Guinea-Bissau, Mozambique, and São Tomé and Príncipe) signed an agreement to provide free trade among participating countries. However, this objective has not been achieved to date, notably because existing transportation routes do not provide for direct shipments between the countries in question. The five countries have formed an inter-state organization, ***African Countries of Portuguese Official Language*** (***the Países Africanos de Língua Oficial Portuguesa*** - PALOP) in 1992, and founded ***the Community of Portuguese-Speaking Countries (CPLP)*** together with Brazil and Portugal on 17 July 1996. The CPLP is a forum for mutual cooperation and assistance, which addresses administrative issues including customs matters (fraud prevention). Cabo Verde is also party to the ***Organisation Internationale de la Francophonie*** (OIF).

Cabo Verde signed the Treaty Establishing the African Economic Community on 3 June 1991, and is thus a founding member of the African Union, the successor to the Organization of African Unity (OAU). The African Economic Community aims to establish a monetary and economic union among its members by 2034. Further, Cabo Verde has a preferential bilateral agreement with Mauritania. The agreement remains in effect, even though bilateral trade is non-existent. In July 23, 2008, Cabo Verde was accepted as the 153rd member of the World Trade Organization (WTO).

Figure 8- ECOWAS, CEMAC e CEEAC –member states



Sources: Espirito Santo Research (2013).

Relations with the European Union and other partnerships

Like other ACP states, Cabo Verde is a signatory of the Cotonou Agreement with the EU and therefore obtains associate tariff preferences and is a beneficiary of the European Development Fund (EDF). While other ECOWAS states are negotiating Economic Partnership Agreements with the EU to satisfy WTO requirements, Cabo Verde and the EU have established a 'special partnership', taking account of Cabo Verde's status as a Peripheral Region Nation with much in common with the EU's outermost regions such as the Azores, Madeira and Canary Islands (Megapesca 2010). In 2011, Cabo Verde became the first African country to be granted "GSP+" status and thus qualify for enhanced benefits of exported goods and services.

6 The ECOWAS Treaty calls for free trade, free movement of persons, the right of residence and establishment, free movement of capital, and an Economic Union with a common currency.

Cabo Verde is eligible for preferential access to the United States' market under ***the African Growth and Opportunities Act*** (AGOA). Originally, the programme covered the period October 2000 to September 2008 (AGOA1) but following legislative amendments signed into law in July 2004, the programme was extended until 30 September 2015. As of May 2015, US lawmakers were finalizing procedures to extend the AGOA until 30 September 2025.

Cabo Verde is a member of the ***Permanent Inter-State Committee for drought control in the Sahel*** (CILLS), an international organization consisting of nine countries in the Sahel region of Africa. The mandate of CILLS is to invest in research for food security and the fight against effects of drought and desertification. The Sahel 21 programme supports initiatives in the field of food security, renewable energies, regional trade, and training in related sectors, population, and demographic research.

The country also has a fishing agreement with Japan, and lately it has begun to develop cooperation with China and India. The information above supports the notion that Cabo Verde is in a particularly strong position to benefit from cluster development initiatives that will spur the flourishing of MSMEs and push the country to become internationally competitive with a diversified product base.

Social and environmental context

The UN Human Development Index (HDI) for Cabo Verde in 2014 was 0.646— within the medium HDI category—positioning Cabo Verde at 122 out of 188 countries and territories measured. Between 2000 and 2014, Cabo Verde's HDI increased from 0.572 to 0.646, an increase of 13%, and an average annual increase of about 0.88 (UNDP 2015). As aforementioned, Cabo Verde was re-classified as a non-Less Developed Country from 1 January 2008 when it graduated out of this category. Cabo Verde saw a sharp reduction in poverty since 1990 which has been complemented by increased access to education and healthcare.

Despite considerable progress over the past two decades, unemployment remains persistently high at 15.8% in 2014 (WTO 2015), yet this was higher than the 12.7% recorded rate in 2011. Moreover, there are great gender disparities between young people aged 15 to 24: the unemployment rate among females of this age is 47.6%, while it stands at 35.5% for males (Megapesca 2010). However, investment in human capital is a top national priority, paying off in many ways, such as contributing to growth. Cabo Verde has one of the highest literacy rates on the continent and each municipality in Cabo Verde now has a secondary school. Cabo Verde performs particularly well in terms of total mean schooling years (school life expectancy), estimated at 12 years in 2009, among the top echelons in Sub-Saharan Africa (SSA).

There has been significant political impetus to align training and curriculum to produce the skills needed for the country to spur multidimensional development, however, the companies interviewed while conducting this study identify lack of qualifications as a main drawback of employment. Currently, companies do not have the incentive to invest in countries where few workers possess suitable training. Besides restricting investment and growth prospects, unqualified labor is then either used to perform low productivity tasks or takes on self-employment without the necessary management skills for successful entrepreneurship. Despite this, the average yearly growth of TFP in Cabo Verde has been among the highest on the African continent. Comparatively, according to the African Development Bank (***table 7***), only Mauritius has been able to experience a higher growth of TFP. A possible reason behind this discrepancy is the quality of education from pre-school level through to tertiary education. The previous Cabo Verdean government had already started to implement more vocational and technical schooling programmes that work to alleviate high unemployment rates among graduated students (African Development Bank 2014).

Table 7- Changes in Total Factor Productivity (TFP)

Country	Budget allocated to education as % of GDP (average 1980-2010)	Changes in Total Factor Productivity, (average 1980-2010)	Average GDP Growth 1980-2010
Cape Verde	16.7	2.15	5.9
Botswana	20.2	1.00	7.1
Mauritius	13.5	3.50	4.6
Mozambique	15.7	-1.13	4.7
Senegal	19.4	-0.09	3.1
Seychelles	14.7	-0.79	3.1
South África	18.6	-0.47	2.4
Singapore	11.2	1.36	7.2

Source: African Development Bank (2012)

Overall, Cabo Verde is increasingly becoming a services economy, specializing in a booming but narrow segment of services, much related to tourism and connected activities (including transportation and logistics), which accounted for almost 71% of the national Gross Value Added (GVA) in 2012 (INE 2015a). The primary sector is small (just 10% of the national GVA in 2012), although

a large proportion of the population still relies on it for their livelihoods. Inability to access credit by MSMEs, lacking qualifications, particularly among the young population, and vulnerability to economic shocks coupled with costs of insularity have been established as obstacles to Cabo Verde's successful development path.

Gender

In 2014, the World Economic Forum (WEF) ranked Cabo Verde 26 out of 142 countries in terms of political empowerment of women, particularly as women parliamentarians make up one fifth of members of parliament, and half of the ministerial positions in the previous government (to March 2016). According to Nshimyumuremyi and Marone (2015), Cabo Verde was ranked 50 out of 144 countries evaluated under the Gender Gap Index. The country has made significant progress on gender equality in recent years but discrimination does still exist: there are gender disparities in unemployment rates, especially between young men and women. Uneven access to resources may be a potential reason. Formally, the constitution and various codes (penal, electoral, labor and family) boast equality of the sexes, and in the executive branch of the government since 2008 there have been as many women as men. In recent years, women have also increased their participation in productive activities, notably tourism, cottage industries and microenterprises. Women represent 51.6% of the total population and 46% of the economically active population. Women also head about 46% of households across the country. However, literacy among adult women is lower than that of men (African Development Bank et al. 2013). For young females, this dimension is particularly stark, as in 2011, more than a third of women aged 15-24 were unemployed, well above the unemployment rate recorded for men of the same age which stood at 22.1%. The GPRSP-III is the main strategy for further reduction in gender disparities.

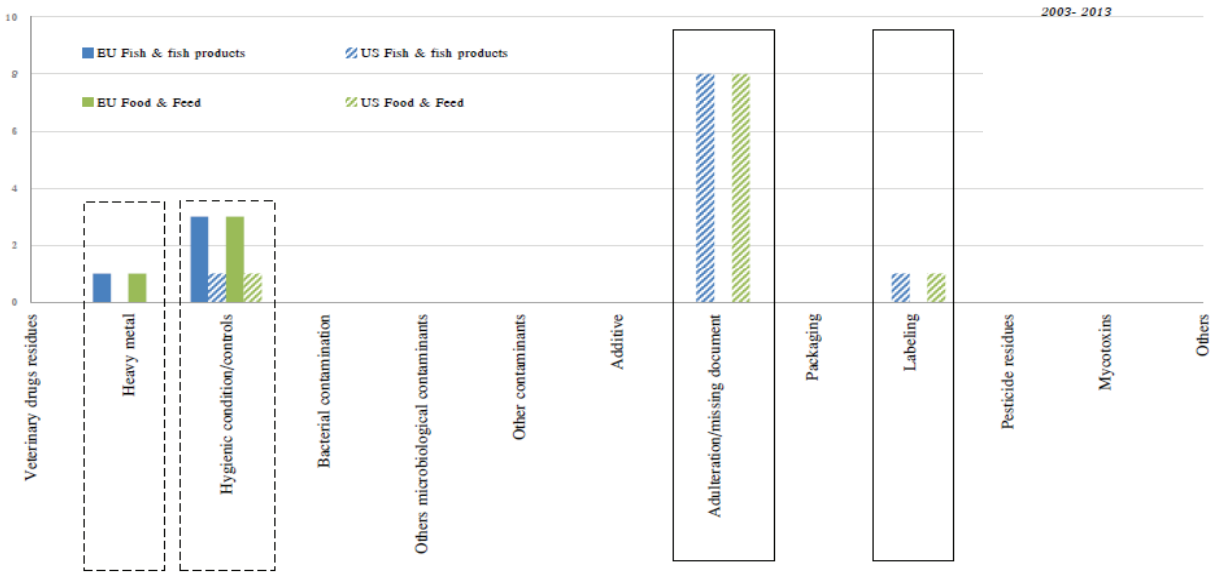
Employment opportunities for women in Cabo Verde are particularly pertinent in order to fight poverty. This is pertinent considering that households headed by women tend to be one and a half times more likely to be poor than those households headed by men and female headed households make up 46% of households nationally (African Development Bank 2014).

Environmental factors

Cabo Verde is endowed with diverse flora and fauna and rare maritime species, which attract a large number of tourists. However, the country's arid climatic conditions make it highly susceptible to extreme weather events and climate change. Illegal fishing activities also present a challenge for the country's natural resource management strategy. Due to the economic importance of tourism, special attention is given to terrestrial and maritime biodiversity conservation (Nshimyumuremyi and Marone 2015).

Pollution in Cabo Verde's coastal waters is, in general, very minimal. The level of industrialisation is also low; such that most of the pollution is from urban sewage and is restricted to the immediate vicinity of coastal settlements. Rejections at importing borders are a good rough indicator of a country's compliance capacity (as well as for the persistence of certain environmental problems), and indicate where, and which, improvements might be needed. Their analysis provides areas for policy guidance in terms of investments to achieve compliance with SPS and TBT requirements in international markets. According to ***figure 9***, Cabo Verde, evidences an overall satisfactory situation regarding the environmental parameters of exports. The situation worsens, however, in relation to technicalities related to implementation of traceability procedures.

Figure 9- Rejection analysis: reasons for rejections of Cabo Verdean products (2003-2013)



Note: The rejections for Australia and Japan as well as other sectors are not presented due to non-relevance/no data availability.

Source: UNIDO (2015).

A reason for this is, that at present, only the cities of Praia (Santiago) and Mindelo (São Vicente) are served by wastewater treatment facilities, and there is even a large fraction of the population disconnected from the municipal sewage system: between 80% and 85% in the former, and around 70% in the latter (Carneiro 2011). Ports and ships are also potential sources of localised marine pollution, as are the two shipyards in Mindelo. A more visible type of pollution is litter. The establishment of dedicated dump sites on all islands is very recent, and evidence of decades of freely dumping litter on any possible ground is pervasive both in, and outside, human settlements.

Several measures have been put in place to guide the management of natural resources. The National Plan for Environmental Education (2013-22) aims at raising citizens' awareness in order to promote the sustainable use of natural resources. The government's environmental policy strategies are aligned to existing laws and regulations, particularly the two National Action Plans for the Environment (PANA). While PANA I, which was instituted in 1994 for ten years, and had a limited overall impact on the environment, PANA II (2004-14) was decentralised and multi-sectoral. It identifies guidelines, indicators, and allowable investments for the responsible use of natural resources and environmental sustainability.

For instance, investments in environmentally sensitive areas must be subject to an environment impact assessment (Nshimyumuremyi and Marone 2015).

The country does have the potential to become a key player in the renewable energy sector since the establishment of the regional ECOWAS renewable energy observatory that collates best practices on renewable energy that are adaptable in the region. It serves as a knowledge platform for sharing these best practices, providing the scope to standardize and harmonize renewable energy practices, and could signal an area for future strategic partnerships in complimentary sectors such as fisheries and aquaculture. This is beneficial for Cabo Verde since the country is vulnerable to climate change. In particular, the sectors of water management, agriculture, forestry, and coastal development, are susceptible to the effects of climate change. Thus by implication, the tourist industry is vulnerable to climate change, too (Espirito Santo Research 2013). One of the serious challenges over the medium-term is minimizing deterioration of the fragile environment on islands most affected by touristic pressure.

The strategic development agenda

In order to achieve economic growth, the previous government put forth the agenda for economic change, the main purpose of which is to transform Cabo Verde into an international platform for high value-added services (World Bank 2014). Private sector participation

through public-private partnerships (PPPs) has been actively encouraged by the previous government, as bringing in private sector expertise can help ensure that infrastructure is administered efficiently.

In order for Cabo Verde to continue its sustained development path and convert its comparative advantages into effective competitive advantages, structural reforms are critical, namely, those concerning training and capacity building, ensuring access to financial services, and the guarantee of an adequate provision of essential public services.

The following chapters are based upon the contributions received from institutional and sectorial stakeholders, drawn from field interviews and enquiries made during the first mission to Cabo Verde. The analysis is supported by secondary statistical data.

III. CABO VERDE FISHERIES VALUE CHAIN ANALYSIS

The fisheries value chain

Economic value

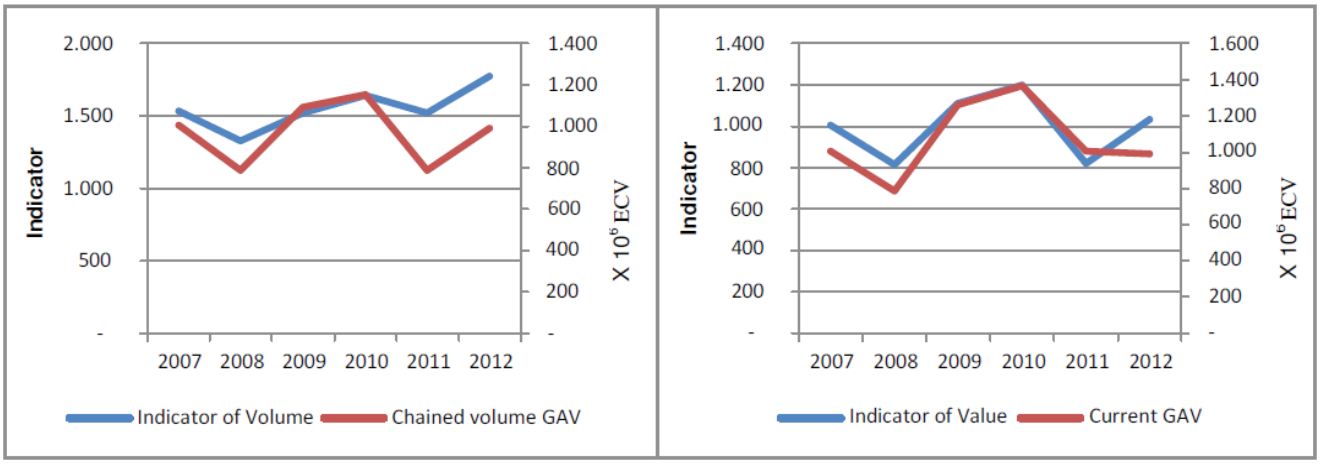
The fisheries sector (not including processing) contributed 0.7% to the overall GDP of Cabo Verde in 2012 (INE 2015). ***Figure 10*** shows the trend of the volume and current GAV during the period of 2007-2012. During this time, both volume and value are very much connected to the cyclical trend of the world economy, thus evidencing a strong dependency on the international situation.

Fish and fish product exports

Among the most exported Cabo Verdean products in 2014 were crustaceans and fish molluscs, that represented 44.5% of total exports, and prepared (or preserved) fish was in second place at 40% (***figure 11***). In 2014, exports of fish and fish products reached a record of 84.3% of national total exports[7] (INE 2014). In 2013, according to The Observatory of Economic Complexity, non-fillet frozen fish exports totalled €32.35M (25%) and processed fish amounted to €24.40M (19%). Tuna is the most-exported fish export from Cabo Verde (43% of the total amount), followed by processed forms of mackerel (40%). Interestingly, diversification of the Cabo Verdean export market ***is*** occurring, as until recently, the market was almost exclusively oriented towards the Portuguese consumer base. Since 2012, however, there has been greater diversification of destination markets. Besides Spain (for canned fish), countries like Germany, Italy, France and Sweden are growing as markets (especially for fresh fish) for exports. Even the pink lobster market, the most valued resource, has traditionally been oriented almost exclusively towards Portugal, but recently, has been witnessing a shift in this trend as shown in ***table 8*** .

7 Measuring in volume.

Figure 10– Historic trend of the chained volume GAV and current GAV for the fisheries sector (2007-2012)

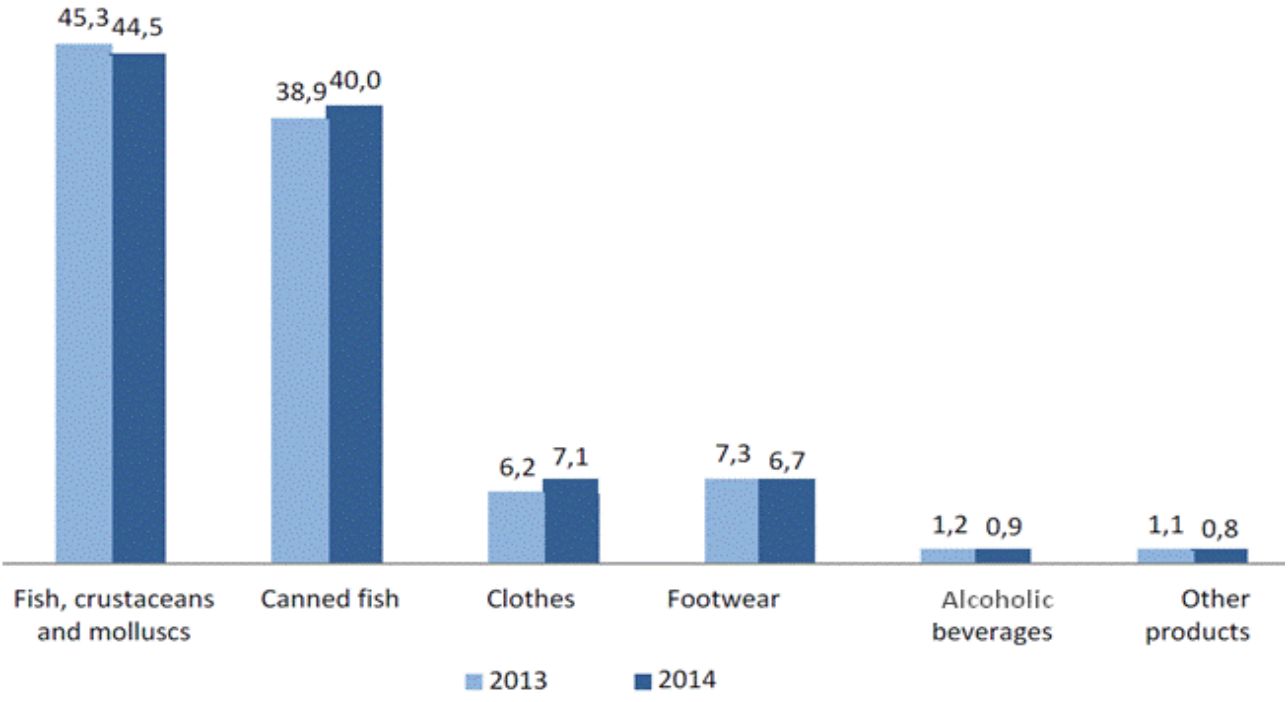


Source: INE (2015b).

The intense competition from other pink lobster suppliers, such as from Mauritania, which boasts lower purchasing prices, could be tackled by developing ***product differentiation*** strategies. This differentiation could be based upon territorial or eco-production certification, for instance, that allows the creation of niche end-markets in countries such as Japan. Since pink lobster is a Cabo Verdean endemic species, pursuing a strategy such as product differentiation could prove particularly rewarding.

The adoption of an eco-labelling certification process for this endemic species would have a two-fold aim: (1) to guarantee sustainable extraction of the natural resource, and simultaneously, (2) to increase the incorporation of national value through the access of niche markets. UNIDO's horizontal networking approach and its underlying steering mechanisms could act as an effective instrumental tool to increase the effectiveness, in conjunction with encouraging joint actions involving both producers and support institutions, including training and technological innovation.

Figure 11– Structure of Cabo Verdean exports, 2013-2014, in %



Source: INE (2014).

As aforementioned, the fisheries sector has been designated as a strategic sector of vital importance to the social and economic development of the country. In the last few years, the fisheries sector decisively assumed leadership of the country's exports, overshadowing traditional exports such as clothing and footwear. In fact, the sector's contribution to the economy has experienced further positive developments, mainly due to the increasing exports of canned fish. On the other hand, exports of frozen fish, which have experienced setbacks in previous times, due to lack of adequate infrastructure conditions such as cold storage, will most likely regain an important position in the near future due to recent investments (e.g. in the cold complex of Porto Grande in Mindelo, São Vicente) as well as those currently being implemented in Palmeira Port (Sal). These investments are considered crucial for Cabo Verde to strengthen its position as an exporter of frozen fish, particularly supplying the local HORECA chain, which currently buy around 80% of the frozen fish exports. Cabo Verdean frozen fish exports offer a comparatively attractive price: a kilo of Cabo Verdean fish can be imported for an average price of €15, while locally it is purchased at €5. Even captured fish in the sub-region continue to boast competitive prices for purchasers. For instance, if it is necessary to invest another €5 per kilo throughout the treatment process, fish can still be sold at €10.

Table 8– Profile of pink lobster exports (2012/13 and 2013/14)

Campaign		Quantities (kg)	Value (€)	Destination market	%
2012/13		154,4		Spain	0,60%
		99,1		Italy	0,38%
		25650,8		Portugal	99,02%
	Total Foreign Markets	25904,3	524.562,08		100,00%
2013/14		449,4		Germany	3,89%
		210		Spain	1,82%
		2246,6		France	19,43%
		138,7		Italy	1,20%
		6575		Portugal	56,87%
		54,7		Sweden	0,47%
	Sub-Total Foreign markets	9674,4	195.906,60		83,68%
		1486,1		Sal island	12,85%
		400		São Vicente	3,46%
	Sub-Total Domestic market	1886,1			16,32%
	TOTAL	11560,5			100,00%

Source: INDP

The country's fish export market is still conditioned by a number of factors, most notably:

- The seasonal nature of the fisheries sector: this greatly limits the responsiveness of the export agents in terms of quantity, regularity and predictability.
- The comparatively high cost of support services onshore, including ice, containers for packaging, services of cold storage, processing and air transportation.
- The administrative costs and high risks involved in the export of fresh food (fresh fish and live lobster).
- Lack of ground support service infrastructure, particularly for certain islands.
- Difficulties in obtaining access to finance for the development of activities in the sector (trading/ export).
- Strong and growing competition in the domestic market (e.g. HORECA) in terms of demand for seafood.

As advocated for by MTIE (2015), the expansion of export capacity should be embedded in a broader strategy to promote and make use of the complementarities between domestic and foreign markets, based on an approach incorporating training and capacity building of stakeholders in the sector, promoting quality products, research, and the introduction of modern technologies to capture and process fish. This approach will in turn, allow the sector to better respond to new opportunities, preferences and requirements of an increasingly wider internal consumer market.

Fisheries value chains: a general overview

The fisheries sector in Cabo Verde has been significantly studied. Studies are often divided by destination of catches and type of vessels, leading to two distinct categories:

(1) Artisanal fisheries: responsible for decentralized fish supply to local communities and islands, and;

(2) Industrial fisheries: responsible for the export, supply of the canning market, and supply of the main urban centres of fish consumption at the country level.

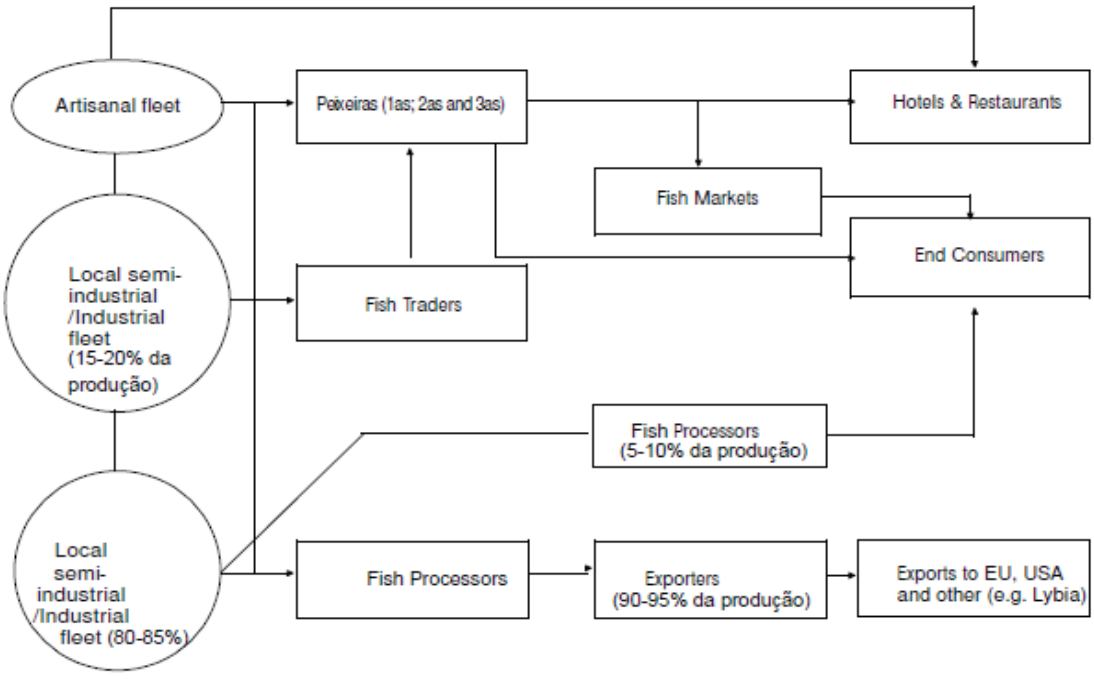
The fisheries value chain in Cabo Verde is quite complex, comprising of a multitude of intermediaries involved in supply and distribution systems. A number of transactions take place in the space between the point of capture and the point of reaching consumers. In general, the fish are collated and sold to HORECA operators, intermediary retailers, or wholesalers (e.g. "peixeiras" or other Cabo Verdean marketing operators) and processors, who then transport the fish and/or fish products to different markets (local, nationwide or external markets) and sell them to the consumer. A thorough description of these actors and their role are given below.

The Value Chain Map (***figure 12***) indicates how the fisheries sector chain currently functions:

(1) The fish are caught and placed on the artisanal fishing vessels, then, directly onto landing sites (the beach) in cold stores, where the "peixeiras"[8], or other fish traders, handle the catch. These intermediaries sell the fish directly to end consumers (including hotels and restaurants) or to local supermarkets. There is also direct trade between local fishermen and the HORECA channel.

(2) From the semi-industrial and industrial fleet, the fish are placed on landing spots (e.g. "complexo de pesca" de Cova da Inglesa in São Vicente) including in semi-processing and processing units (like Frescomar, in São Vicente, and SUCLA in São Nicolau) that prepare fillets, cans, or simply freeze the whole fresh fish. These products are mainly destined for foreign markets (approx. 90-95%). A small part of the catches made by the industrial fleet are sold in the domestic market. It can either be directly exported as bulk product to foreign processors or retailers, or, exported as processed goods. Consequently, Cabo Verdean fish products will end up on the foreign market across the world, back in West Africa, or even re-imported to Cabo Verde after further processing, such as canning or smoking.

Figure 12- Value chain map



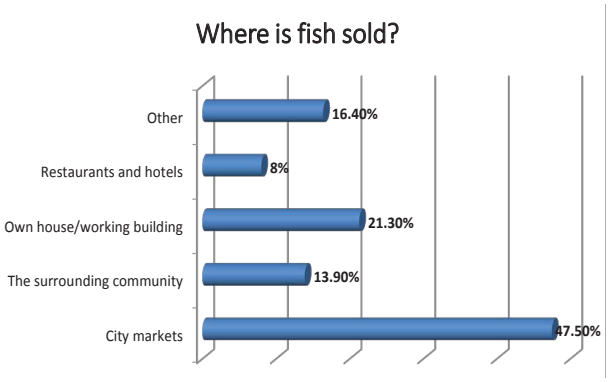
Source: Author's own.

8 The entrepreneurial women, functioning not only as wholesalers and/or retailers, but also as processors, and traders before the products end up on the Cabo Verdean local market.

There are significant differences in the way fish is handled and traded in the domestic market (among the various islands). For example:

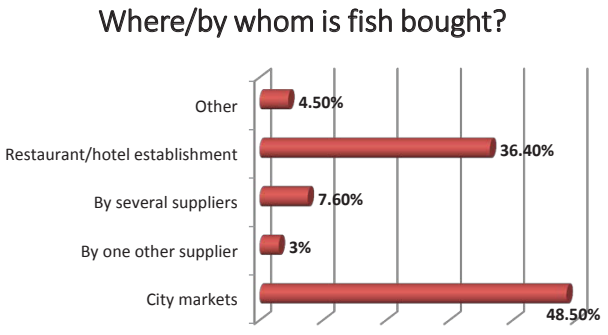
- Many landing sites do not have cooling or freezing facilities available. Occassionally fish can be thrown from the vessels onto the floor, without any hygienic safety measures (for example, no plastic covering).
- The two most prominent islands, in terms of volume of catches and marketing dynamics (and also where the best facilities are located), are Santiago and São Vicente.
- Interestingly, the first sale of fish that are destined for the domestic market, caught by the semi-industrial fleet at Praia and Cova d'Inglesa, is conducted by the vessel owner themselves or by their representative.
- In the case of the island of Santiago (see ***figures 13*** and ***14***), the second and third sales are made in different municipal markets, especially the Assomada market, Tarrafal, Pedra Badejo, with notably poor food safety and hygiene conditions
- In the city of Praia, in addition to several municipal markets, there is a large city market, where the diversity and quality of the fish is great, partly due to the better salubrity conditions. Besides local markets, trading is still largely carried out by an overwhelming number of street marketing agents: fish is acquired by the traders at the landing sites and distributed all-over the city by street saleswomen ("peixeiras") carrying the fish at the top of their heads using plastic bowls, open boxes, or double cabin vans that transport the fish to the most inland spots of the island without safeguarding of food security or the use of isothermal transport boxes. Moreover, the attractiveness of the Praia market in terms of price caused by rising demand and growth and consolidation of the middle class with less time and with greater purchasing power, has contributed significantly to the emergence of new distribution channels in some shopping centres, convenience stores and specialized fish stores ("peixarias"), although with low significance to date, given the total volume of fish marketed in the city capital. This trend of the emergence of new distribution channels should be consolidated once new target markets are developed. This will allow the market to better meet consumer demand and expectations, including through transformed value addition, and by doing so, will contribute to reducing market risks and increasing long-term sustainability, once multiple distribution channels and product diversification allow the market to reach multiple customer venues.
- All the fish landed in São Vicente (see ***figures 13*** and ***14***) flow to the public market at Mindelo where it is sold, this process makes use of refrigerating facilities. The fish traders use simple plastic bowls ("alguidares"), isothermic containers, or old refrigerators, to store the fish bought. Recently, peddling has been used as a form of fish transportation as well. In St. Vincent, the second and third sales take place in the municipal market and occasionally, by street saleswomen ("peixeiras").
- Contrastingly, in the artisanial fishing sub-sector, marketing of fish still strongly relies on personal relationships. As a rule, boat-owners deliver their catch to their spouses who then take charge of peddling.

Figure 13- Fish marketing locations – where the fish is sold (traders)

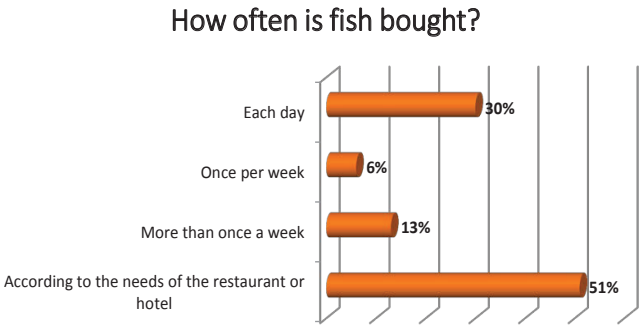


Note: Enquiries involving economic operators from Santiago and São Vicente islands.
Source: Veiga (2015).

Figure 14- Fish marketing locations – end markets (buyers, HORECA)



Note: Enquiries involving economic operators from Santiago and São Vicente islands.
Source: Veiga (2015).



Note: Enquiries involving economic operators from Santiago and São Vicente islands.
Source: Veiga (2015).

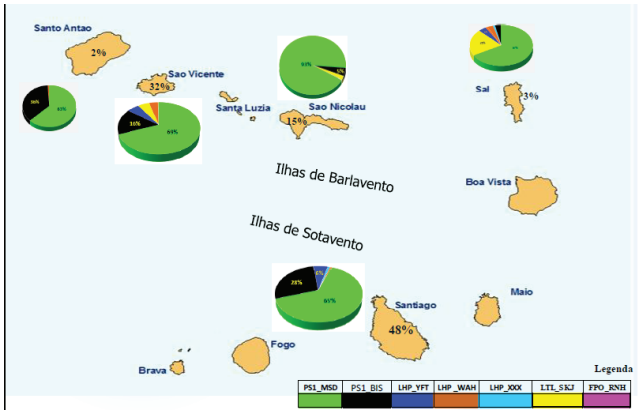
There are 97 landing sites in Cabo Verde, but the major ports of Mindelo (S. Vicente) and Praia (Santiago) are the two sites with the best fisheries infrastructure, including fishing quays, cold storage facilities and ice plants. The islands of Santiago and Santo Antão, with the largest rural populations, account for 45 of the 97 landing sites distributed more or less evenly around the islands. On islands such as Brava, Fogo, Maio, Boavista, Sal, S. Nicolau, and Santo Antão, the major landing sites (typically 1 or 2) are equipped with a quay and/or slipway, used for both commercial and small-scale fishing purposes. Only a minority of the small beach landing sites have some kind of slipway to cater for the artisanal fishermen.

For artisanal fisheries, 30 community support centres ("Centros Técnicos e Sociais" – CTS) have been established, with support infrastructure at 26 sites (e.g. an ice plant, chill room, receiving station, warehouses). However, a number of these small facilities are not functioning at present due to lack of demand since most catches are sold fresh directly in local markets. There are also intermittent maintenance and technical support problems.

The port of Mindelo, on the island of São Vicente, is an important regional hub for a number of foreign fleets. The EU uses it extensively, as well as Chinese longline fleets, as a base for fisheries operations in the region. The services used by the fleets include transhipment of product into refrigerated containers for international distribution, crew exchange and hiring of nationals, shipyard services (at CabNave), and supply of inputs (fuel and supplies).

Catches from industrial and semi-industrial fleets are primarily for export and Cabo Verdean processing industries. The landings of the industrial fleet do not occur systematically on the islands of Boa Vista, Maio, Fogo and Brava: they are effectively concentrated on the islands of Santiago, where the biggest consumption centre of the country is located, and on São Vicente, where the bases for the export of seafood products are located (see ***figure 15***). The industrial fisheries landings from São Nicolau are destined to supply the canning industry and focus primarily on tuna species. Sal and Santo Antão also supply the canning industry, but to a lesser extent, due to less space available for landing, storage and processing facilities. The situation is about to change on Sal island due to works currently underway on the Port of Palmeira, in the facilities of the former Salmar. With reference to these landings, they will be destined to supply hotels and restaurants located on Sal as well as for export. As pointed out earlier on in the report, the continuation of the process into the emergence and consolidation of new distribution channels, along with product diversification, including value addition through transformation, are understood as crucial for Cabo Verde products to increase their competitiveness in both internal and external markets.

Figure 15– Geographic distribution of the landings of the semi-industrial and industrial fishing (2006-2010)



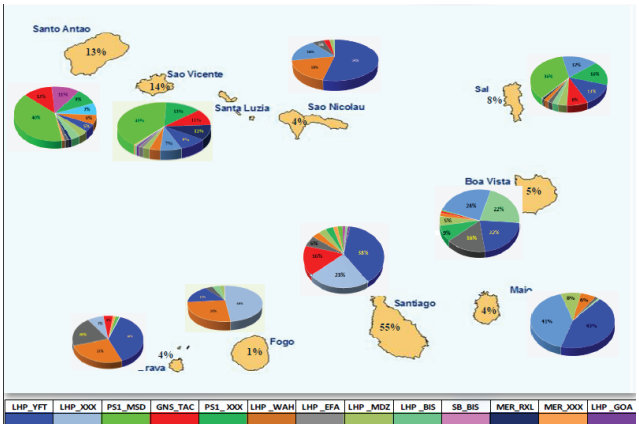
Note: Legend for the codes of the different types of fisheries from table 12.
Source: Monteiro, 2015.

Artisanal fisheries

Thirteen main artisanal fisheries have been identified in Cabo Verde (see ***table 12***) and their respective hauls per island are shown in ***figure 16*** below. Typically, they coexist in Cabo Verde's fishing communities, with fisherpeople shifting between them depending on season, resource availability, and employment opportunities.

The setbacks faced by artisanial fisheries can summarised as: difficulties in commercialisation of fish in domestic markets, problems related to low productivity, and inadequate infrastructure and equipment on shore (Carneiro 2011). These setbacks are a feature on all of the islands, and it is common that fisherpeople travel

Figure 16– Geographic distribution of the landings of the artisanal fishing (2006-2010)



Note: Legend for the codes of the different types of fisheries from table 12.
Source: Monteiro, 2015.

to islands other than their own in order to fish, pending weather conditions and vessel characteristics. Sometimes artisanal fishing vessels travel for about 3 days to fish or transport catches from one island to another, using ice or salt for fish conservation. This process raises questions, not only in terms of product quality, but also surrounding the fishermen's security.

In 2010, the Vessel Monitoring System (VMS) was installed, initially this was used by just 20 vessels, however, it has become mandatory under the Law-decree Nº 32/2012 for all national and foreign semi-industrial and industrial vessels operating within the Cabo Verde EEZ and for Cabo Verdean vessels fishing in foreign waters.[9] Cabo Verde is also in the process of establishing a fisheries digital logbook and electronic transmission of data from vessels using GPRS.

From a gender perspective, the organization of the artisanal sub-sector in Cabo Verde is as follows: capture activities are predominantly male, while women engage in post-capture processing and commercialization. Both men and women act autonomously. Important fish markets include the aforementioned Praia market, in Santiago, and Mindelo's market on São Vicente, as well as markets on the tourism island of Sal. Catches

are also sold in all fishing communities along the coast, as well as in settlements further inland.

Most fish sold on the domestic market is sold and consumed fresh, however, the two most common artisanal processing techniques are salting and smoking the fish in order to sell these on the market.

9 Nevertheless, during the local mission, the author heard several complaints about the system not working.

The larger fish canning plants based in São Vicente, São Nicolau, and Santiago are supplied primarily by the Cabo Verdean semi-industrial and industrial fleets, although some of the supply is imported.

Following the 1999-2003 embargo of fish exports to the European market, Cabo Verde has made significant improvements in its fish storage and processing facilities. Exports have since resumed to the extent that in 2009, fresh and canned fish products topped the list of Cabo Verde's exports, accounting for 39.9% and 29.8% in volume, respectively, and €10.6 and €7.9 million in value, according to data from INE. The supply chain of fresh fish is short and geographically limited because the product is highly perishable. To extend the shelf life of the product it is crucial to ensure adequate handling and preservation practices along the supply chain. The use of isothermal boxes, flexible containers and ice flakes, are necessary to maintain the value of the fish before it reaches the market. Thus the implementation of world-class food safety, quality and traceability standards in the Cabo Verdean fisheries sector is a pre-condition for export-oriented market development.

Pursuing chilled-fish value chains economically attractive for artisanal and semi-industrial fisheries of insular states, such as in Cabo Verde's situation, compared to pursuing value chains of frozen raw fish. For instance, the difference between consumer prices of chilled and frozen fish is approximately 2:1. Efficient downstream logistics have to be developed. A refrigerated supply chain is more appropriate for industrial or large-scale fisheries due to high initial investment costs.

Significant investments were made during recent years involving the creation of modern and well-equipped infrastructure for fish landing, freezing, and cold storage. The cooling complex of Porto Grande acts as a good example of this reinvigorated infrastructure, as well as the renewed fishing complex of Cova da Inglesa, both in Mindelo. On São Vicente, there are works in process to renovate the fishing- and cold-storage complex, as well as in Palmeira, on Sal island. For the artisanial fisheries, refrigeration is used as a means of preservation for fish which have not been sold, rather than as a first resort.

According to Food and Agriculture Organization (FAO), although overall protein consumption has increased quite significantly during recent years in Cabo Verde, the annual per capita food supply from fish and fishery products in Cabo Verde is still low (10.2 kg in 2011, which is around half of the world's per capita fish consumption of 19.2 kg, registered in 2012). This

means that there is still a great opportunity for the supply of Cabo Verde internal market to grow through local fish production.

The marine environment

The continental shelves around Cabo Verdean islands and islets are generally narrow, limiting the productivity of fisheries. The total estimated area of the continental shelf is only 5,394 km^2 (accumulated; with depths of 200m), most of which is located around the eastern islands Sal, Boavista, and Maio (Megapesca 2010). The archipelago is situated in the tropics and isolated from the African mainland by great depths. These marine habitats around the islands are generally characterized by lower primary productivity compared to the upwelling areas close to the West African coast (World Bank 2008).

The data available suggests little potential for fisheries resources to flourish, despite its diverse composition. There are a number of factors that contribute towards this, including:

i) Unfavourable climatic, topological and oceanographic conditions;
ii) Lack of upwelling, including upwelling of bottom waters;
iii) Low and very irregular rainfall, and;
iv) Reduction of the continental shelf.

The influence of upwelling off Mauritania is seen to reach the Cabo Verdean islands, possibly leading to an import of nutrients and chlorophyll production, but this effect appears to be sporadic and of limited consequences in terms of productivity. However, the alternating seasonal influence of the colder canary current[10] and the warmer equatorial currents can hamper the development of rich tropical biota. The medium to long-term future for Cabo Verde sustainable fisheries production relies upon a healthy combination of rational extraction of wild resources and product certification based upon the adoption of eco-friendly production techniques.

Status of marine fish resources

Since 2005, the actions by the Cabo Verdean government with respect to the fisheries sector are guided by the PGRP. According to the Fisheries Management Plan[11], there is a total estimated resource potential of between 36,000 and 44,000 tons, without taking into account other important fishing resources, such as the large pelagic ocean, beaked species (swordfish), sawfish and demersal from the rocky bottom. Furthermore, this estimate does not include deep-water resources such as cephalopods, "conch-goat", barnacles, algae and other molluscs. The non-inclusion of these species is partly explained by the difficulties inherent to fisheries research, exacerbated by a lack of both financial and human capital (MTIE 2015). The current fishing effort undertaken by the Cabo Verdean fleet is displayed in ***figures 20 and 21***.

The main fish stock reserves of Cabo Verde can be grouped into five main categories (Martins, n.d.):

(1) Among the **large oceanic pelagics** is tuna and related species, including the yellowfin tuna (albacora, ***thunnus albacares***), skipjack (gaiado, ***katsuwonus pelamis***), bigeye (patudo, ***thunnus obesus***), the little tunny (merma, ***euthynnus alleteratus***), frigate tuna (judeu ou cachorrinha, ***auxis thazard***) and wahoo (serra ou ilhéu, ***acanthocybium solandri***). These tuna, are essentially oceanic migratory species, with a seasonal path through Cabo Verde waters, although some of the species are believed to be resident to Cabo Verde. As the fish are transoceanic resources, the estimation of these resources and the recommendations for their utilisation are under the responsibility of the ***International Commission for the Conservation of Atlantic Tunas*** (ICCAT), the international commission that evaluates the stocks of these species and formulates recommendations for their utilisation. The latest estimate of between 25,000 and 30,000 tons of potential tuna catches is divided into: 70% from offshore components and 30% from coastal components (World Bank 2008).

However, it is imperative to take note that some tuna species - such as the yellowfin, bigeye and skipjack tuna –are on the ICCAT list of the resources that have already exceeded the sustainable catch level and are at over-exploited levels (MTIE 2015). Foreign vessels appear to be exploiting a substantial part of the offshore tuna resources in the Cabo Verdean EEZ, which fluctuate with the availability of fish. This is why one of the most recurrent claims presented by APESC concerns the implementation of NTZ (no-take zone) corridors in the EEZ. The highly seasonal nature of surface tuna fishing forces some foreign industrial fishing vessels to fish elsewhere along the African west coast.

Year round industrial fishing for tuna by the local fleet that utilise the Cabo Verdean EEZ has proven commercially impossible since tuna stocks are only

10 The North Equatorial Counter Current – NECC / North Equatorial Current – NEC result in occasionally adverse conditions (for either tropical or subtropical/temperate species).
11 The plan is currently under revision as it entered into force in 2005 for a ten-year period, 2004-2014.

available to fish during a 3-4 month window. Since the local fleet has been unable to emulate the commercial performance of foreign vessels, expansion appears questionable. The domestic fleet has recently demonstrated that it lacks the infrastructure and management skills to operate as cost-effectively as its foreign counterparts in the region. In the current situation, achieving profitable commercial operations of the local fleet may only be possible through close, long-term commercial linkages with foreign companies that have a proven track-record in regional tuna fisheries. Considering the available information, it could be assumed that the potential for further expansion of surface tuna fisheries in Cabo Verde appears at present only achievable if conducted by foreign fleets, unless a national fleet restructuring program is put in place, combining fleet re-equipment and renewal, technological upgrade and human resources training and capacitation.

(2) The **small pelagic** stocks are characterized by their volataile numbers, interrelated with fluctuations of environmental and recruitment parameters. Thus, the production potential of these species can vary widely and very quickly. In Cabo Verde, the waters possess four main species of small pelagic species: mackerel scad (cavala preta, ***macarellus decapterus***), bigeye scad (chicharro, ***selar crumenophthalmus***), round scad (cavala branca, ***decapterus punctatus***) and herring (arenque, ***sardinella maderensis***). In recent years there has been a rapid increase in blackspot picarel catches (dobrada, ***Spicara melanurus***) which now constitutes, along with mackerel scad and bigeye scad, the majority of small pelagic catches.

Mackerel scad is one of the main resources exploited by both industrial and artisanal fisheries. It is a small pelagic that is part of the diet of an important fringe of the Cabo Verdean population, mainly due to its affordable cost to all social classes. From 2008, a closed season for mackerel was established (August - September), thus protecting the time of peak spawning (white water) and temporarily reducing the fishing effort. However, there is evidence of a systematic violation of this rule by the operators. Examining the quantity of fish hauls over recent years (average yealy catches of 2,000 tons), it is estimated that there is a potential for the haul to increase to 2,200-2,500 mt/ year, without jeopardizing stocks (Martins 2015). Specifically in relation to big eye scad, the maximum sustainable catch (CMS) stands at 1,000 mt /year.

(3) Demersal fish stocks include a diverse group of species living on the seabed. Characterized by relatively slow populational growth, these species are highly vulnerable to situations of over-exploitation. In Cabo Verde, demersal fish stocks are divided into two major groups according to their habitat: (1) sandy bottoms and (2) rocky bottoms. The group of demersal fish from sandy bottoms includes various species. The most significant catches are from the bream group, especially the sand steenbras (sargo de areia, ***lithognathus mormyrus***), threadfin (barbo, ***galeoides decadactylus***), west african goatfish (salmonete, ***pseudopeneus prayensis***), red mullet (fotche, ***mullus surmulletus***), atlantic bigeye (façola, ***priacanthus arenatus***), bastard grunt (besugo, ***pomadasys incisus***), among others. The demersal group of rocky bottoms includes species such as grouper (garoupa, ***cephalopholis taeniops***), moray eels (moreias, ***muraenidae spp.***), golden african snapper (goraz, ***lutjanus fulgens***), african forktail snapper (dobradão, ***apsilus fuscus***), atlantic emperor (bica de rocha, ***lethrinus atlanticus***), black bream (ruta, ***spondiliosoma cantharus***), among others.

In 1995, some previously under-explored areas were beginning to show signs of an unsustainable exploitation of demersal fish. The banks off the islands of Boa Vista, João Valente, Tarrafal and Bancona, whose annual potential was estimated at 3,000 - 6,500 tons, were examples of unsustainable exploitation (Hodson and Miller, MTIE 2015). Most recent reviews of grouper and sand steenbras in the waters of São Vicente, Santa Luzia and São Nicolau, show that the grouper is already being fished beyond moderate levels, and that sand steenbras is on its way towards exploitation, too (Tariche and Martins, MTIE 2015). Although there are no evaluations for other fishing areas, catches show signs of decline. This is most evident on the island of Santiago, where the signs of an intense exploitation or overexploitation of resources - to 200 meters bathymetric - are very evident.

(4) Lobsters are the species with high demand and commercial value. Lobsters are considered very sensitive to fishing due to their sedentary habits, relatively long life, slow rates of stock recovery, and vulnerability, especially during the molting process. Lobsters are classified according to their habitat: (1) deep-water lobsters, and (2) coastal lobsters. The first group includes a single species, endemic to the archipelago, inhabiting depths between 100 and 350 metres: the pink lobster (lagosta rosa, ***palinurus charlestoni***). Coastal lobsters consist of the royal spiny lobster, green lobster (lagosta verde, ***Panulirus regius***), the brown spiny lobster (lagosta castanha, ***panulirus echinatus***) and the mediterranean slipper lobster (lagosta pedra, ***scyllarides latus***), inhabiting depths of up to 50 meters.

Taking into account the efforts directed towards the capture of these species and current demand, it is

suggested that fishing of these species may be at levels of overexploitation or, at best, lobsters are being intensively exploited along the entire length of the archipelago, especially, in areas near the centres of higher consumption (Sal, Boa Vista, Santiago, São Vicente) and of export output (Sal and São Vicente). While there are no systematic studies to monitor coastal lobster fisheries, the evidence of overexploitation is very clear. Within the composition of the landings of these species, specimens of very small size are visible. The sharp reduction in catches is also an additional piece of evidence of overexploitation of this species. The situation is particularly severe on the island of Sal, and very worrying on the islands of Boa Vista and Maio, due to booming tourism that these islands have been experiencing in recent years. Looking specifically at the pink lobster, the situation is particualrly adverse. According to Martins (2015), there has been:

- Successive decreases in catch per unit effort (CPUE = 0.2);
- A decline of biomass at about 5% compared with the biomass estimated in the 80s.
- Fishing exploitation at aproximately 33-45 metric tons.

Resource conservation measures were implemented several years ago. They included a closed season which is maintained between July and November, and that a 'minimum catch size' has been established. This was set at 24cm in the original PGRP and 11cm in the 2005-2006 plan. A limitation on the number of traps per vessel has also been added in the last two plans (RCM no. 3/2005; 11/2007; 10/2009). These conservation measures add to the management of fishing licences: where a maximum of four licenses are to be issued exclusively to Cabo Verdean shipowners.

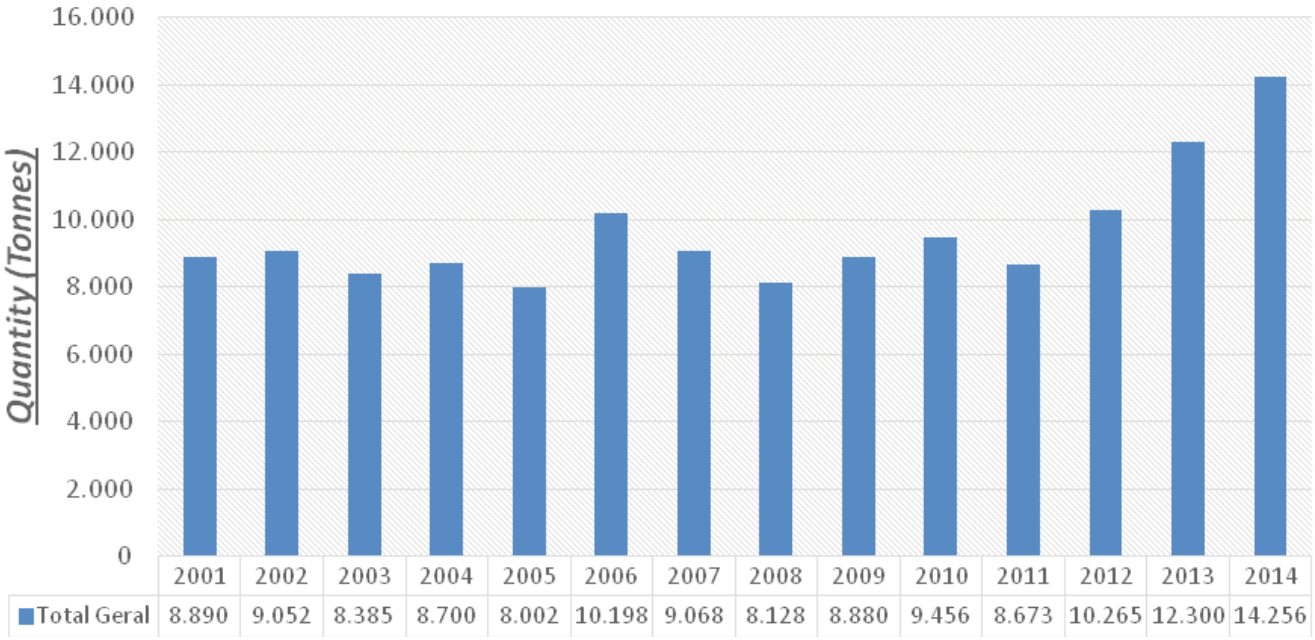
Further resources are also exploited, of which, the market potential is unknown, like the bubonian conch (búzio cabra, ***persististrombus latus***), barnacles (percebes, ***pollicipes caboverdensis***) and limpets (lapas, ***patella spp.***), which traditionally have been targeted with intense collection. Other species, such as squid and octopus, occur in Cabo Verdean waters but the stocks are unknown and do not inform fishing activities.

(5) Surface **sharks and rays** occur in Cabo Verdean waters and are increasingly caught, especially as an accessory species by long-line fishing foreign fleets. In the West African sub-region these resources are intensely over exploited. The deep-water shark species, such as the lowfin gulper shark (gata, ***centrophorus lusitanicus***) living at depths from 300 to 1,400 meters, species of toadfishes (charrocos), the blackbelly rosefish ("fanhama" or "garoupa de madeira", ***helicolenus dactylopterus***) and moray eels may represent some potential for commercial exploitation, but this is limited. An exploration campaign using bottom longlines, held in 2000, showed that between 300 and 600 metres depth there are demersal resources with some potential, with high commercial value in the international market. However, these resources cannot support intense fishing pressures (Menezes et al apud Martins n.d.).

Fishing: current catches

Cabo Verdean fisheries are highly diverse with almost 50 different species for each ton of catch. Domestic production of seafood products reveals a tendency over the years to stabilize catches at around 10,000 tons/year (with an increment in 2013 and 2014 - see ***figure 17*** and ***table 9***), a figure below the global potential of exploitable fish resources at the country level. Despite the intensive effort during the desk research carried out for the preaparation of this report, there is an almost complete absence of scientific research related to the current levels of discards (e.g. catches below minimum sizes, bycatches, etc.) occuring in Cabo Verde's EEZ.

Figure 17- Evolution of total landings (2001-2014)



Source: INDP.

Table 9- Evolution of total landings by fleet (2001-2014)

Unit: Tons

Year / Fleet	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Artisanal fishing	5.649	5.383	5.172	5.259	4.822	4.530	4.633	4.018	4.552	4.617	4.050	4.310	4.374	4.417
Semi and Industrial fishing	3.241	3.669	3.213	3.441	3.180	5.668	4.435	4.110	4.328	4.839	4.623	5.955	7.926	9.839
Total Geral	**8.890**	**9.052**	**8.385**	**8.700**	**8.002**	**10.198**	**9.068**	**8.128**	**8.880**	**9.456**	**8.673**	**10.265**	**12.300**	**14.256**

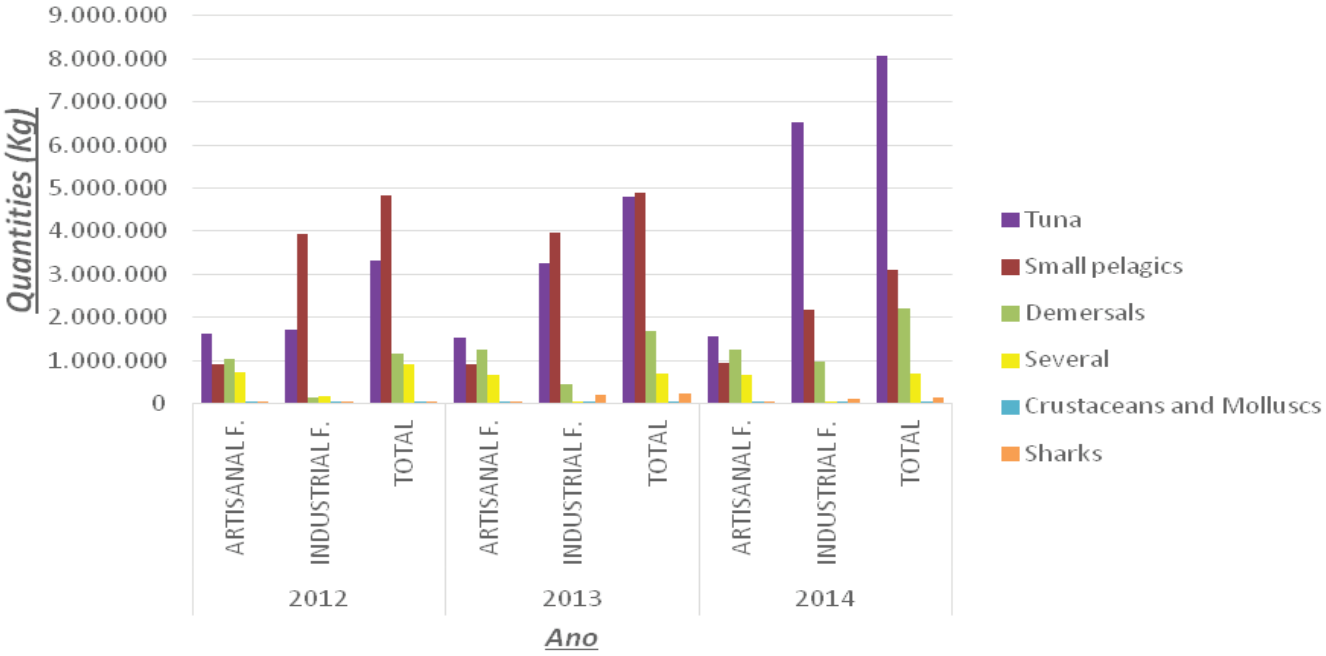
Source: INDP.

The National Institute for Fisheries Development (INDP) lists a total of 97 landing sites in the archipelago which are visited on a more or less regular basis by its staff. The type of boats, fishing effort, and the amount of fish caught are documented by INDP staff. However, precise reporting can sometimes prove difficult since fish are stored immediately once they are caught. As a result, the INDP staff can only ask the fishermen which species were caught and rely on their knowledge and memory of which domestic and migratory fish species were involved (Mundt 2012).

The composition of artisanal fisheries landings reveals a predominance of tuna. In 2014, more than 35% of these subsector landings consisted of tuna. Landings of small pelagic and demersal species constitute the other main catches that make up this subsector. As can be seen, the composition of the landings of artisanal fisheries proves to be much more balanced than that of industrial fisheries, where the concentration of small pelagic is all too evident (see ***figure 18***).

Among the species caught by the industrial fleet, tuna has grown substantially from 2013 to 2014 (66% in 2014 vs. 41% in 2013), decreasing the relative haul of small pelagic species from 50% to just 22%. Catches of demersal species do not exceed 10% of total landings in 2014, and the other species are minimal.

Figure 18 - Total catches by fleet and main groups of species (2012/2014)



Unit: Kg

Year / Groups of species	2013						2014					
	ARTISANAL F.	%	INDUSTRIAL F.	%	TOTAL	% Importance	ARTISANAL F.	%	INDUSTRIAL F.	%	TOTAL	%
Tuna	1.535.790	35,11%	3.247.912	40,97%	**4.783.703**	38,89%	1.547.495	35,03%	6.523.588	66,31%	**8.071.084**	56,61%
Small pelagics	923.623	21,12%	3.953.917	49,88%	**4.877.540**	39,65%	935.233	21,17%	2.169.182	22,05%	**3.104.415**	21,78%
Demersals	1.234.221	28,22%	451.885	5,70%	**1.686.106**	13,71%	1.245.662	28,20%	972.561	9,89%	**2.218.223**	15,56%
Several	651.598	14,90%	35.241	0,44%	**686.839**	5,58%	652.275	14,77%	37.768	0,38%	**690.043**	4,84%
Crustaceans and Molluscs	11.839	0,27%	35.081	0,44%	**46.920**	0,38%	11.878	0,27%	33.273	0,34%	**45.151**	0,32%
Sharks	17.174	0,39%	202.665	2,56%	**219.839**	1,79%	24.950	0,56%	102.253	1,04%	**127.203**	0,89%
TOTAL GERAL	**4.374.245**	100,00%	**7.926.701**	100,00%	**12.300.947**	100,00%	**4.417.493**	100,00%	**9.838.625**	100,00%	**14.256.119**	100,00%

Source: INDP.

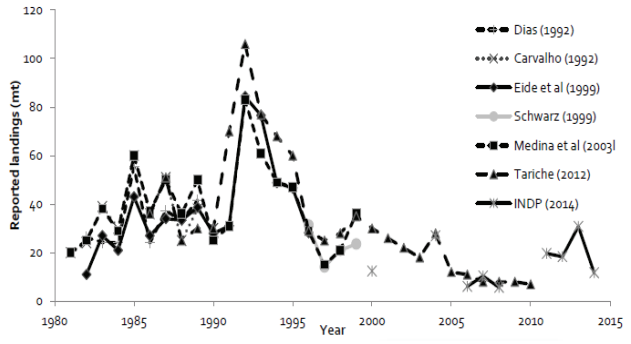
A careful analysis of the data on landings (***figure 18***) reveals that the catch composition is very diverse, varying throughout the year depending on the season for each fishery:

- The ***purse seine*** fishery targets small pelagic species, like mackerel scad. In the recent past much catch has been used as bait for longlines, and for canning production, both for the domestic market and for export: the bigeye scad and their juveniles are used as live bait for pole and line fishing of skipjack tuna (a species extremely important for the canning industry, both for domestic market and export). A smaller portion of the catch is sold for human consumption, thereby playing an important role in ensuring domestic food security.
- Following the great decrease of mackerel scad catches since 2010, the semi-industrial and industrial fleet focused their attention upon frigate tuna, particularly since 2012. This was recognised by local canning factories that conduct significant exports. In 2014, for example, Frescomar, a canning factory located in São Vicente received almost 4,000 tons of "cachorrinha".
- Other tuna species, like the yellowfin tuna ("albacora", ***thunnus albacares***) are caught using handlines and are utilised for filleting, or are sold as whole fresh products, both to the HORECA channel and used for export.
- World catches of the three major tuna species (skipjack, yellowfin and bigeye) totalled over 4.7 million tons according to data reported in 2013 (FAO). The Western and Central Pacific area are the main fishing ground for tunas, with 55% of world catches made here, ahead of the Indian Ocean (18% of the world catch), the Eastern Pacific (18%) and the Atlantic Ocean (9%). The skipjack tuna is the most captured tuna species, followed by yellowfin and bigeye.

Specific to Africa, the total tuna caught in 2013 stood at 197,656 tons. Of this, 13,653 tons (7%) were caught in the EEZ of Cabo Verde. 4,783 tons of tuna catches were caught by Cabo Verde's artisanal and semi and industrial fleet – as per ***figure 18*** - and the remainder by foreign vessels, or foreign owned vessels, that operate under the Cabo Verdean flag.

The pink lobster fishery is a relatively small fishery sub-sector, both in terms of fleet size and catches: only 2 vessels of length 15-26m were still operating in 2014 (INDP), and average yearly catches range between <10 to 40 tons since 2000 (27.7 mt in 2013; 7.8 mt in 2014 – ***figure 19***). However, the pink lobster sub-sector has disproportionately high economic importance: its exports are worth 5-10% of Cabo Verde's total exports.

Figure 19– Reported landings (mt) of pink lobster (1980-2015)



Source: Martins, A. (2015).

Some demersal fish with high commercial value, such as the blackbelly rosefish and sand steenbras, which are very interesting as fresh products, tend to sell internally through the HORECA marketing channel. Moreover, the black swordfish (peixe-espada preto, ***aphanopus carbo***) and other demersal species such as the lowfin gulper shark, could serve as the object of applied research in order to support an exploratory commercial fishing activity and to assess their profitability and competitive potential, within the global market.

Another interesting species, a crustacean called the striped soldier shrimp (camarão-soldado, ***plesionika edwardsii***), has been the object of a resource evaluation by INDP, which etimates potential annual catches arround 200 tons.[12] Further, the West African goatfish, also appears to be interesting as an export destined for European markets, such as the Portuguese market.

12 As per information gathered from one of the presentations attended at the Expomar Fair – Mindelo, during the first mission to Cabo Verde.

The EEZ of Cabo Verde covers an extensive area of about 785,000 km^2, characterised by oceanic waters, and relatively low productivity. However, the gains that can be derived include improved efficiency and effectiveness of both production and distribution processes, transformation, and marketing and not as a result of increased extractive activities.

Training and education

The success of these goals is dependent upon the upgrading of competencies and professional skills of Cabo Verdean economic actors, namely, fisherpeople, boat-owners, and fisheries businessmen and businesswomen. A strategic national agenda included in the ***Integrated Strategic Plan for Technical and Vocational Education and Employment***, published in 2013, looks to reinvigorate education and employment untill 2018 and has already internalized the necessity for the development of skills nationwide, particularly at the level of technical and professional education. Further, the previous government had put a lot of effort into implementing a system for reviewing the higher education system.

Another stakeholder, the University of Cabo Verde (UNI-CV) was formed in 2006 by merging two colleges: ISE (Instituto Superior de Educação) located in Praia (Santiago), and ISECMAR (Instituto Superior de Engenharias e Ciências do Mar) in Mindelo. In 2007, a third school officially joined, the INIDA (Instituto Nacionai de Investigação e Desenvolvimento Agrário) located in São Jorge dos Órgãos (Santiago). The ISECMAR (UNI-CV), offers mid-level academic education in various fields of engineering and marine sciences. It was created in 1984, as the Center for Nautical Training, providing training in fisheries and naval activities, but has since developed into an academic institution, which has been linked to the University of Cabo Verde. In relation to fisheries, it provides training courses for fisherpeople, master fisherpeople, motorists, samplers, observers, with respect to fish handling, legislation, and navigation. Whilst these training courses have not been provided regularly over the last 10 years due to financial limitations, the situation has improved since 2000. In fact, the institution has played an important role in providing the necessary training for officers and crew of the industrial fleet, including those of the 10 pole and line vessels acquired in 2005/6. It also offers a Bachelor's degree in marine biology with the possibility of continuing on to higher studies in Portugal, based on a partnership with the University of the Algarve. Most of the teachers for this course are researchers from the INDP, forging close links with the work of the INDP.

The previous Cabo Verdean government wished to

create a 'School of the Sea' on the island of São Vicente, which will be an independent organizational unit within the University of Cabo Verde (UNI-CV). The school will allow the creation of a "very strong interface" with other state and private institutions and increase the international links already maintained by UNI-CV, most notably with the International "Campus do Mar", led by the University of Santiago de Compostela in Spain, including the Canary Islands. The aim of the school is to invest in the construction of a 'blue economy', which requires the leveraging of strong endogenous knowledge to build a foundation for innovation.

The Employment and Professional Training Institute (IEFP), which falls under the Ministry of Youth, Employment, and Human Resource Development, is the national public entity responsible for implementing policies to promote employment, entrepreneurship, and the training of professionals. Specifically, the aim of the IEFP is to establish partnerships with other public and private institutions, and to promote and implement vocational training in order to meet labor market needs. The IEFP has a network of initiatives covering several Cabo Verdean islands. Of prolific interest are two new Food Processing Centres (one in Santiago, the other in Santo Antão), which are equipped with laboratory facilities to conduct food quality and microbiological analysis. As of yet, the IEFP has not collaborated with either of the two Cabo Verdean main processing conglomerates (Frescomar and SUCLA) on professional training.

If efforts were to be accelerated and extended throughout the entire educational system, from pre-primary to university level, the focus should be on guaranteeing that education, and programs supplied by the educational system, are in line with market needs and the agenda for change (addressing the skills mismatch between the labor force and the needs of employers). The government could act as a dynamic player: promoting collaboration with the private sector and modifying funding mechanisms in order to ensure suitable alignment between demand and supply of employment.

Several policy measures have been adopted to tackle unemployment in the economy, speifically oriented towards promotion of skills development programs, especially for more vulnerable groups (youth and women). This will enable the production of a skilled labor force who have benefited from education that is suited to the Cabo Verdean job market. Moreover, sustainable funding for technical and vocational training needs to be promoted. Reformation of labor market regulations is a priority in order to promote employment opportunities and make the market more flexible to produce better results for job creation. Creation of employment services, intermediary networks, and support services to foster entrepreneurial efforts are also in place (República de Cabo Verde 2012b).

While some interventions, such as the creation of labor intermediaries require immediate action, others, including the development of skills through technical and professional education (TPE), on-the-job-training, and reforms of worker protection, call for the introduction of long-term merit-based assessment systems and strategic planning. The government could expand the programs which promote education and training for entrepreneurship, especially for youth (15-24), considering this is one of the core drivers of innovation value creation in the economy.

The establishment of a local network for fisheries management involving local communities will require considerable efforts in terms of training of personnel in management, book-keeping, data collection, and maintenance of equipment and infrastructure. UNI-CV could play a decisive role in providing the necessary training, particularly vocational training for those interested in the fisheries sector.

Fishing: fleet classification

The current official criteria used by Cabo Verde to distinguish between different types of fishing vessels are ambiguous (***table 10***). During the research conducted as part of this study, it was discovered that there are currently no local fishing vessels in operation (apart from foreign vessels operating under Cabo Verde's flag) which possess the technical specifications to justify their inclusion ***tout court*** in the category of 'industrial fishery fleet', since the vessels in operation lack the dimensions and autonomous capacity needed, to be classified in this way.

Table 10 – Criteria in use to differentiate between different types of fishing vessels

Legislation	Artisanal fishing	Semi-industrial/Industrial fishing
Law-decret 97/87	GT ≤ 55m3	All the other vessels
	Quotient between engine power and total weight of the vessel ≤ 4 hp per ton.	
Law-decret 53/2005	Vessels without bridge ("open mouth"), non mechanized fishing gear, conservation of fish only using ice and salt	All the other vessels

Source: Monteiro (2015).

Domestic fisheries in operation in Cabo Verde are classified in three ways: as artisanal (small-scale) operations, semi-industrial, or industrial fisheries. However, traditional, small-scale fishing is in the majority and since the country does not have a distinct operational fishing fleet, its fisheries sector is shaped by the resources available in national waters, surrounding the islands and islets.

As mentioned by several authors such as Trindade Santos et al. (n.d.), small-scale fishing presents itself as a traditional activity sector whose social importance far exceeds that of what it exemplifies at the macroeconomic-aggregate level of the nation. In fact, small-scale fishing activities are a vital source of employment of the local people, and provide a significant contribution toward the local communities' nutrition and health.

One of the most important upgrades for the country is the production of more reliable fisheries statistics that would guarantee standards for certification. The country could also look to fill in gaps related to volume of discharges due to bycatches and below minimum size catches, per type of fishing fleet and fishing gear. To do so, some preliminary steps must be tackled, namely, a solid and unambiguous revision of statistical concepts (e.g. types of fleet).

Employment

Employment of the local population by the artisanal fisheries sector stood at approximately 3,700 fishers in 2011 (INDP 2012). However, this figure is 2,400 lower than the 1995 employment level, in other words, between the period 1995 – 2011 there has been a 44% reduction in measurable employment in the artisanal fisheries sector. The sharp reduction in the availability of fish resources along the coast, the need to travel longer distances for fishing grounds, and increased security and cost risks, are listed as some reasons for the decline in employment levels. Indeed, in many fishing communities, a growing tendency of young people, particularly men, to migrate to urban centres in search of employment alternatives is present.

Contrastingly, indicators do show an average annual increase of 2.6% tons per boat and 4.2% tons per fisherperson, in terms of the abundance of fish caught in the period 1995 - 2011 (INDP 2012). Further, the number of temporary, or seasonal, fisherpeople is known to fluctuate, depending on weather conditions. Low rainfall and drought usually result in agricultural workers seeking a livelihood in fisheries, but exact figures of this phenomena are unknown (Mundt 2012). The rapid development of the tourism industry has increased demand for local labor, including those who were formerly fisherpeople. The personal income generated from fishing is generally well below the national average, placing pressure on large households in particular (typically 5-7 members). Thus, households that gain their income from fishing activities generally cannot save fragments of their income and members will have low education levels (World Bank 2008).

Within families, men usually undertake fishing while women take care of downstream logistics, namely fish processing and marketing. This would suggest an area to potentially conceive of, and implement, training courses (in product quality and food safety procedures) that involve the whole household, as a way to increase the adherence to such initiatives, simultaneously covering different stages and actors within the small fisheries value chain. Almost 1,000 Cabo Verdean women are economically active as dealers and wholesalers of fish ("peixeiras" or peixeras) (***table 11***) and the average age of the employed peixeras is 40 years old. Within records, there is no data on foreign-employed fishing personnel. In Santiago, the number of artisanal fisherpeople (1,479) account for a great part of the total number of fisherpeople nationally, as shown by ***table 11***. The fact that a large amount of people put their efforts into fishing, without the necessary equipment or vehicles, without decent levels of education and know-how, and their efforts result in low catch rates, means poverty among fishermen is particularly serious and in need of intervention initiatives.

According to the results of the national survey in 2011 (INDP 2012), 1,239 artisanal fishing vessels existed on 70 landing sites in Cabo Verde, of which 72% were motorised.[13] The distribution of vessels per island (***table 13***), their fishing efforts (***figure 20***), and the number of operators are quite heterogeneous. An interesting development since modernization is that the small vessels have started using outboard engines as their primary means of propulsion. The introduction of outboard engines provides operators with a set of advantages resulting in reduced travel time, and consequently, easy access to fishing areas located further away, but most importantly, increased security and less physical labor.

Table 11- Employment in the artisanal sub-fisheries sector in Cabo Verde, 2011

	S. Antão	S. Vicente	S. Nicolau	Sal	Boavista	Maio	Santiago	Fogo	Brava	Total
Fishers	372	279	240	360	183	204	1,479	327	273	**3,717**
Peixeiras	109	92	25	42	26	31	562	67	33	**987**

Source: Agrer (2012).

Along the coast of the different islands of the archipelago, there is a multitude of fish landing sites, located in nearby villages, where the majority of the residents' main economic activity is to partake fishing-related activities. The main operative characteristics of the artisanal fishing fleet of Cabo Verde are described below in ***table 12***.

13 Motorized refers to the fact that the vessel contained at least a diesel motor.

Table 12– Listing of the 13 most important types of fisheries carried out by the artisanal fleet in Cabo Verde – Landing data (2006-2010)

Type of fleet	Fisheries description	Geography	Seasonality (majority of landings)
Artisanal	Handline - Albacora (*Thunnus albacores*)	All islands	April/August
	Handline - Serra (*Acanthocybium solandri*)	All islands	November /April
	Handline - Chicharro (*Selar crumenophthalmus*)	All islands	All year with variations
	Handline - Demersals	All islands	March/August
	Handline - Garoupa (*Cephalopholis taeniops*)	All islands	All year with variations
	Handline - Moreias (Muraena spp)	All islands	October / May
	Handline - Salmonete (Pseudupeneus prayensis)	All islands	January/June
	Purse-seine nets - Cavala preta (*Decapterus macarellus*)	Mainly in Santo Antão, Sao Vicente and Sal	Mainly in the 2nd and last quarter of the year
	Purse- seine nets - multiple species	Mainly in Santo Antão, Sao Vicente and Sal	All year with variations
	Gillnets - Dobrada (*Spicara melanurus*)	Mainly in Santiago and Santo Antão	Between 1st and last quarter of the year
	Beach seine - juveniles of Chicharro (Selar crumenophthalmus)	All islands	September/January
	Plongée diving - Buzio (*Strombus latus*)	Mainly in Sao Vicente, Santiago and Santo	October /February
	Plongée diving – multiple species	All islands	October /February

Source: Monteiro (2015).

Industrial fisheries are of paramount importance, not only as a result of the number of people directly involved in production, marketing and processing the fish, but also due to the outstanding economic contribution that reduces the balance of payments through exports of fisheries products. The supply of the canning industry and the complementary supply of fish to the domestic market reinforce the socio-economic importance of this subsector.

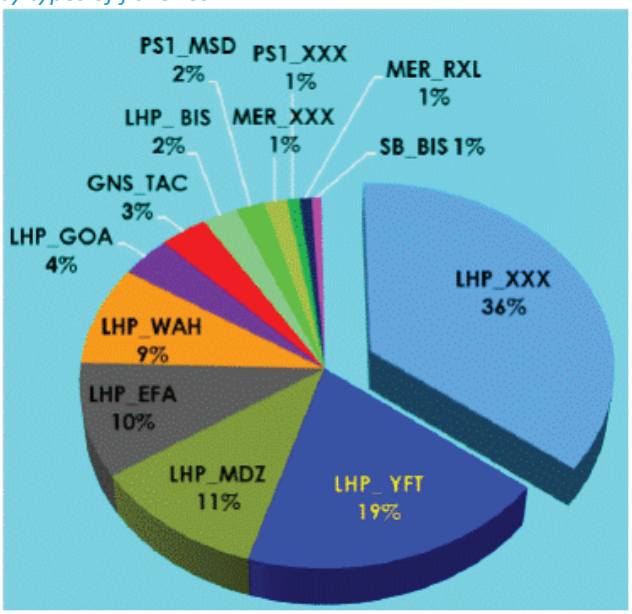
Table 13- Artisanal fishing vessels, Cabo Verde (2012)

	Total Vessels	Handlines	Purse-seine Nets	Gillnets	Beach Seine	Plongée Diving
St. Antão	124	102	3	7	1	10
St. Vicente	93	83	3	2	1	4
St. Nicolau	80	79	0	1	0	0
Sal	120	107	0	1	0	12
Boavista	61	55	0	0	0	6
Maio	68	64	0	0	0	4
Santiago	493	429	4	29	14	16
Fogo	109	99	0	1	0	9
Brava	91	90	1	0	0	0
Total	**1,239**	**1,108**	**11**	**41**	**16**	**61**

Source: Agrer (2012).

According to ***table 14***, at the end of 2010, the country's industrial fishing fleet comprised of a total of 96 vessels with a length between 8 and 25 meters (however, it should be considered that part of these units were inoperative, or, have been discontinued throughout the years). These units are equipped with an internal motor, with power ranging from 35hp to 300hp and have a gross tonnage not exceeding 30 GRT. Most industrial fishing vessels are based at the Mindelo port, the only landing port in the country with adequate support infrastructure for the export market and canning-industry market. The Praia port, situated near the largest center of domestic consumption is the second port of landing for industrial fleet catches. Moreover, a small proportion of vessels from this subsector use the harbor of Tarrafal, in São Nicolau, to land catch for the canning industry. On Sal Island, the fleet alternate their landings in different ports, according to demand.

Figure 20- Fishing effort carried out by artisanal fleet units, by types of fisheries



Note: Legend for the codes of different types of fisheries from table 15.

Source: Monteiro (2015).

Table 14- Evolution of the semi-industrial and industrial fleet in Cabo Verde

Evolution of the industrial fleet – Variation in the number of vessels										
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Windward (Barlavento) region	35	36	35	34	34	36	30	35	33	37
Leeward (Sotavento) region	31	24	31	32	35	30	31	38	55	59
Variation (%)		*-9%*	*10%*	*0%*	*5%*	*-4%*	*-8%*	*20%*	*21%*	*9%*

Source: MTIE (2015).

Fleet efficiency and modernisation are slow to change, as no new industrial vessels have entered into service (Carneiro 2011). The semi-industrial and industrial fishing conditions are highly precarious due to low unitary productivity and poor infrastructure conditions ashore. This fact is harsh for vessels engaged in seasonal fishing of tuna and small pelagic. The weak nature of vessels and the poor fish storage conditions on board the vessels, combined with factors such as high operating costs that result from the need to travel increasingly far from the main landing ports, exacerbate the situation. Thus, improvements to the ports for fish landing, and of the ground support conditions, particularly in the region of Sotavento, would contribute greatly to better profitability of the industrial units based in this region.

The report explicitly recommends activities related to lota and port upgrading in the corresponding section.

Among the multiple factors that explain this reality, the following are noteworthy:

- Fleets are comprised mostly of obsolete units.
- On average, the fleets are old, and thus require high maintenance and repair costs. Inadequate units are also used for multiple purposes.
- Fishing methods are adapted dependent on the different fisheries.
- Vessels are marked by very different types of units and equipped with a variety of engines from various brands, thus making it difficult to create a stock of spare parts and

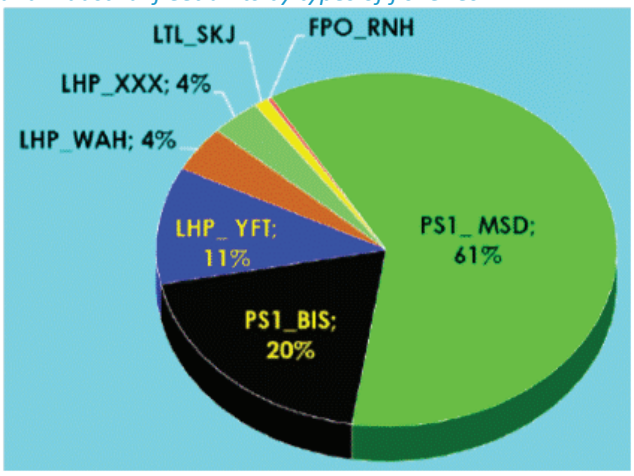
Table 15- Seven important types of fishing carried out by the semi-industrial / industrial fleets in Cabo Verde – Landing data (2006-2010)

Type of fleet	Type of fisheries	Fisheries description	Geography	Seasonality (majority of landings)
Semi industrial / industrial	LHP_YFT	Handline - Albacora (*Thunnus albacores*)	Mainly in Santiago and São Vicente	September/January
	LHP_WAH	Handline - Serra (*Acanthocybium solandri*)	Mainly in Santiago and São Vicente	All year with variations
	LHP_XXX	Handline – multiple species	Mainly in Santiago and São Vicente	All year with variations
	PS1_MSD	Purse-seine nets - Cavala preta (*Decapterus macarellus*)	Mainly in Santiago, São Vicente and Sao Nicolau	Mainly in January/July
	PS1_BIS	Purse-seine nets - Chicharro (*Selar crumenophthalmus*)	Mainly in Santiago and São Vicente	All year
	LTL_SKJ	Pole and line - Gaiado (*Katsuwomus pelamis*)	Mainly in São Vicente, São Nicolau and Sal	Mainly in the last quarter of the year
	FPO_RNH	Creels (traps) – Pink lobster (*Palinurus charlestoni*)	Mainly in Santiago and Sal	December / April

Source: Monteiro (2015).

The industrial fleet operates different fishing gears according to season, including not only long-lines and pole-and-lines for tunas (primarily skipjack, frigate and yellowfin), but also hand-held lines for demersals, purse seines for small pelagics, and traps for deep-water lobster. The lobster fleet is small in size: only four vessels in the early 2000s, and just two operating in 2014. A third segment uses purse seines to catch small pelagic species such as mackerel scad, round scad, and big-eye scad (see ***table 15***). The correspondent fishing effort is shown in ***figure 21***. In late 2010, the industrial fleet employed a total of 1,152 fisherpeople, an increase of around 22% compared to 2000 when the subsector employed 900 fisherpeople (see ***table 16***).

Figure 21– Fishing efforts carried out by semi-industrial and industrial fleet units by types of fisheries



Note: The legend for the codes of the different types of fisheries are listed in table 15.
Source: Monteiro (2015).

In the 1990s, large investments were made in order to adapt the fleet and meet the challenges of modernization. Several modern vessels made of fiberglass and better equipped, were built and put into operation. However, the results of this initiative did not meet expectations as after a trial-period of fishing, it became clear that these units were not viable, at either the country-level or at the sub-regional level. The establishment of a joint venture in Angola, utilising these units and their fishing activities also proved infeasible. Currently, the units are under re-evaluation, and potentially, revitalization and adaptation, in order to make them suitable for multi-purpose and versatile fishing means, including to better meet the challenges of distant fishing. Potentially, long-distance fishing could extend to countries in the ECOWAS sub-region with whom Cabo Verde has a reciprocity agreement.

During field interviews of governmental entities of Cabo Verde that have conducted professional training courses for fisheries sector actors previously, one of the most reoccurring concerns was the extreme difficulty in achieving an adequate involvement of participants. To remedy this, innovative approaches that increase the level of engagement are critically needed, for example, compulsory attendance schemes in order to receive business support, or microfinance, could be put in place in future.

Table 16- Industrial fishing: evolution of the number of fishermen and of fishing effort

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Number of fishermen	900	792	720	732	744	828	792	732	876	876	1152
Effort (days/sea)	4822	3450	5366	5123	2553	1068	1738	4916	4971	6184	7197

Source: INDP (2012).

Foreign fishing vessels

In 2014, a fishing agreement was signed with the EU. The EU and Cabo Verde agreed on a new Protocol to the Fisheries Partnership Agreement. The four-year Protocol replaced the latter Protocol that expired on 31 August 2014. The new Protocol allows 71 EU vessels to fish for tuna and other migratory species in Cabo Verdean waters. In return, the EU has increased its financial contribution to Cabo Verde: €550, 000 per year for the first two years of application, and €500, 000 per year for the final two years. Half of the yearly financial contribution is paid for access to fishing resources and the other half is earmarked for promoting sustainable management of fisheries in Cabo Verde, including reinforcement of control and surveillance capacities, and for supporting local fishing communities. The new protocol provides measures to improve the sustainability of fishing activities such as reducing the abundance of long-line fishing activities, implementing a monitoring mechanism for shark catches, and rolling-out a ban on surface-long-liners and purse seiners fishing within 18 nautical miles of the shore. Both parties committed to all recommendations made by the ICCAT. Notably, the member states with a main interest in the new protocol are Spain, Portugal, and France.

Aquaculture

In 2010, the then government of Cabo Verde, with the support from FAO, developed a ***Strategic Framework for Aquaculture Development*** (2010). This spurred Cabo Verde and FAO to sign and solidify an agreement on a project providing technical assistance that includes actions set out in the strategic framework. The project provides capacity building and training of administrative professionals, as well as development of pilot-experiments.

Under cooperation with China, a similar project has the aim of fattening tuna in cages (mariculture in inshore waters). Preliminary results have been encouraging, including the possibility of extending the experiment to other species. Tuna is of high commercial value, and thus, success of this initiative has great economic promise. However, the experiment ended abruptly due to vandalism and theft.

Under the umbrella of private initiatives, a project for shrimp cultivation is underway. This innovate initiative proposes to grow the whiteleg shrimp (***litopenaeus vannamei***) or ***vannamei*** shrimp in-land. The project will be implemented in phases: starting by producing 50 tons of shrimp per year, and increasing the number until 155 tons per year is reached. The production farm is located in Calhau, São Vicente, and the constructions of nurseries (dugout ponds) were almost complete at the time this report was authored. The project is a joint venture between Cabo Verdean and Brazilian companies. The shrimp will later be used as live bait for the tuna fisheries fleets. They are to replace juveniles of big-eye scad, whose catches are irregular and highly dependent upon upwelling events. The cultivation of the shrimp is considered is semi-intensive; thus, since stocking density used in the nurseries is low and may not even require assisted ventilation. Feed rations and other consumables are imported from Brazil, while equipment is imported from Europe, China and Brazil. The project, at full implementation, will cost €1.5 million. The Dutch government agency, EVD, is involved in financing the initiative with a contribution of €750,000. However, this initiative has suffered severe bottlenecks since the beginning of its implementation, namely, difficulty in accessing financial credit, the absence of finance programmes specifically designed for fisheries and aquaculture activities, environmental constraints, and difficulties in obtaining formal licensing, excessive bureaucracy, and a lacking legal framework for aquaculture activities.[14]

The promotion and development of aquaculture has been suggested as most likely to contribute to increased fish production in the country. On the other hand, the results of research initiatives carried out so far indicate that the viability of development of commercial aquaculture using alien species is unfortunately very limited. Besides environmental impacts and difficulty in obtaining proper licensing, the need to implement demanding safeguard measures to mitigate potential negative impacts, turn these investments into very expensive ones indeed. Aquaculture projects, similar to those briefly outlined above, have definite potential to flourish in Cabo Verde, however, particular concerns arise around farming of endemic species, especially of those species that are currently submitted to an intensive fishing effort as a result of their profit potential.

Feasibility studies that involve site selection, environmental impact evaluation, biological and physiological adaptation of fish, including sanitary and feed requirements, infrastructure assessments (access to local farm labor, access to reliable and low cost sources of energy, transportation networks, logistical support, and communications networks) as well as economic and financial analysis, are critical to identify both the strengths and weaknesses associated

14 The Cabo Verdean Basic Law on Fisheries is currently under revision.It will create, for the first time, a specific framework for aquaculture activities.

with a proposed project. Feasibility studies should be conducted in the case of aquaculture possibilities in Cabo Verde determine whether or not projects can be 'given the green light' in the near future.

Processing

Cabo Verde's manufacturing sector contributed 7.9% of GDP in 2012 (INE 2015a). The main national industries include fish- and food-processing, beverages, tobacco products, and clothing. As aforementioned, Cabo Verde enjoys tariff-free entry to the EU market for wholly originating fish products, but national production is not sufficient to meet raw material demand for processing and export. As a result, Cabo Verde has obtained an exception from the European Commission (EC) to allow for a certain quota of non-originating canned tuna and mackerel products.

In 2013, the global figure for processed tuna products (which includes canned tuna) reached 1,759,372 metric tons (mt) (149,994 mt on the African continent), where the annual consumption of canned tuna in the EU was 700,000 mt (1.2kg / year per capita). According to the FAO, 1,000 mt of canned tuna and other processed tuna forms were produced by Cabo Verde.

For many years, the canning industry constituted an alternative market for industrial vessel catches. Indeed, in 1985, there were six industrial canning units in the country, distributed throughout the islands of Maio, Santiago, Sal, São Nicolau and Boa Vista. Currently, the country has only two operating processing units:

1. **SUCLA:** a national company, located in the municipality of Tarrafal (São Nicolau). The company manufactures tuna intended for the supply of the domestic market and has a processing capacity of about 750 tons/year. SUCLA employs an average of 150 workers, the majority of whom are women. In recent years, the company has made an approach towards tackling the export market, mainly, the world foods market in the United States, where the tuna products are in high demand. SUCLA exported 20,844 and 35,700 tons of canned tuna to the US, in 2013 and 2014, respectively (Almada 2015).

1. **Frescomar:** a company that uses Spanish capital (owned by the UBAGO GROUP MARE, S.L.), located in the city of Mindelo (São Vicente) has an annual production capacity of around 950 tons/year (in 2014, Frescomar processed 14,000 tons of fish). Recently, in June 2015, Frescomar inaugurated a new assembly line for the production of canned tuna loin, guaranteeing another 420 new jobs. The company's products are majoritarily destined for foreign markets, particularly, Spain, the U.S., and other African countries. As a result of a 2009 agreement, foreign-owned Frescomar benefits from tax and customs incentives, which involve ensuring a local content requirement of salt. Frescomar also operates all of the official fish landing sites on Cabo Verde, besides the renovated and expanded fishing complex of Cova de Inglesa (which has 150 tons of storage capacity). Currently, there are investments being made to expand the fishing capacity and the cold storage complex that exists in Palmeira port on Sal island. In recent years, Frescomar's activities have increased substantially, yet the company still relies upon raw fish imports for approximately 80% of their output according to data displayed in Almada (2015). Frescomar complies with Cabo Verdean food policy regulations (including HACCP) as well as other food processing certification standards, such as IFS and BRC.

One of the main environmental problems that arises as a result of increased production is what to do with the production waste and fish remains. ***OJFP, Lda. - Fish-meal Production Industry*** is a company that processes fish waste from Frescomar into 'fish-meals', and recently invested €1.2 million in equipment to cope with the growth of raw material originating from Frescomar and the cold complex of Porto Grande. OJFP is headquartered in São Vicente. OJFP invested in equipment and set up a new line of fish-meal production, increasing production capacity from 20 tons with nine days drying time, to 50 tons with only 24 hours drying time. Currently, OJFP employs 24 workers and its products are entirely exported, predominantly to other West African countries, such as Angola and Côte d'Ivoire.

A new cold storage facility with a capacity of 3,500 tons has recently been opened in Porto Grande (Mindelo), operated by a private consortium, ATUNLO, SA, under the National Company of Ports Administration (ENAPOR). This infrastructure is anticipated to be of critical importance for the Cabo Verdean processing industry, since it will benefit from a stable and secure supply of raw fish, allowing Frescomar, to reduce their high dependence upon fish imports. Specifically, Frescomar's average yearly fish imports stood at over 85% of its raw material. However, during 2015, Frescomar had already bought approximately 5,000 tons of fish that came from Cabo Verde's EEZ. In 2016, Frescomar expects to reach almost 20,000 tons of raw fish material processing.

The dynamics and complexity of the canning sector, particularly in Europe, where the large global canning producers dominate the market, constitutes a major challenge in exporting products from the Cabo Verdean canning industry. In fact, population growth and increased demand for fresh fish both in the domestic market and in exports are major challenges for the canning industry. Thus, the canning industry has consistent difficulties in accessing raw material.

SUCLA has faced major problems in obtaining raw material, especially after the collapse of Interbase, a cold storage service company providing cooling infrastructure. The discontinuity continues to jeopardize Frescomar's fleet landings. Frescomar currently uses Spanish vessels and importing raw material to meet its demand, due to the inevitable and growing product shortage in the Cabo Verdean market. The underlying problem is the limited supply levels national operators can achieve. Moreover, operators view the prices that the canning industries offer for the raw material as uncompetitive, given other options, such as in the internal fresh market. During the author's interview with Frescomar, the official that was interviewed, mentioned that lack of professional training, especially on-the-job training, and lack of ability to upgrade HR capacities are part of the main constraints faced by the company.

The role that transformation of this sub-sector could play for the economy of Cabo Verde as well as for aggregating value and contribution to the structure of supply and demand of the primary fish products overall, is vital. Therefore, developing complementarities with the actors discussed is crucial for the success of fisheries initiatives.

Food quality policy and SPS

The ***Agreement on the Application of Sanitary and Phytosanitary Measures*** sets out basic rules for food safety and animal and plant health standards. The standards should be applied to the extent necessary to protect human, animal or plant life or health and should not arbitrarily or unjustifiably discriminate between countries where identical or similar conditions prevail. Member countries are encouraged to use international standards, guidelines and recommendations where they exist. However, members may use measures which result in higher standards if there is scientific justification. Members can also set higher standards based on appropriate assessment of risks so long as the approach is consistent.

As referred to previously, HACCP procedures are mandatory under Cabo Verde's law. Cabo Verde has nine points of entry where phytosanitary and veterinary inspections are carried out. At the present time there are two laboratory facilities that provide services to the fisheries sector in the country: The LOPP (Official Laboratory for Fishery Products) and INPHARMA/INLAB, a private laboratory owned partly by the state (40%). These laboratories are accredited, for some parameters, by ISO 7025 (2005). There is an on-going process that aims to consolidate the two structures. Importantly, Cabo Verde has inter-agency agreements with food safety authorities of Portugal and Senegal regarding veterinary tests. The country is a member of the ***Codex Alimentarius***, ***the International Plant Protection Convention*** (IPPC), and ***the World Organisation for Animal Health*** (OIE).

In 2014, the government created a new independent agency functioning as a fish products authority, ACOPESCA, whose responsibilities include ensuring compliance with SPS standards, inspections, export certification of fish and fisheries products, and compliance with legal requirements aimed at the prevention of illegal, unreported and unregulated (IUU) fishing (corresponding to Resolution Nº 68/2014). ACOPESCA also coordinates with LOPP. At the regional level, in the country also participates in the West Africa Quality Assurance Programme (WAQP), an EU-funded project, to strengthen and harmonize TBT and SPS measures applied by the ECOWAS member states, and is implemented under UNIDO's guidance.

The SPS agreement increases the transparency of sanitary and phytosanitary measures. In 2013, Cabo Verde notified the SPS committee about the revision of phytosanitary and veterinary inspection fees on imports (and exports) of live animals, meat and meat products, dairy products, eggs, honey, fish and fish products, and certain plants and seeds. For importation, these aforementioned products must be accompanied by a phytosanitary- or veterinary-certificate, issued by the exporting country's NPPO or veterinary service. For basic food hygiene standards, Cabo Verde has implemented HACCP as the compulsory governing system.

ARFA is Cabo Verde's independent food safety agency. Regulated products include food for human consumption, functional and novel foods, supplements and additives (including pharmaceuticals for human use, cosmetics, and biocides). The agency also regulates food processors themselves, and coordinates the food safety activities of SNCA (***Sistema Nacional de Controlo de Alimentos***/ The National Body for Food Controls), a public-private food safety network that meets around five times a year. SNCA functions as a contact point for

the Commission of the National Codex Alimentarius (*Comissão Nacional do Codex Alimentarius*).

In 2009, Cabo Verde issued legislation on its intent to bring food safety legislation into line with SPS standards (Legislative Decree No. 3/2009), summarised in ***table 17***. The decree was followed by the adoption of basic food hygiene standards. In practice, risk analyses are performed by ARFA at the Director General of Agriculture and Rural Development's request.

Table 17- Reform of SPS legislation

Legislation	Content
Legislative Decree No. 2/2009 of 15 June 2009	Establishes general principles in terms of offences against public health, such as slaughtering of prohibited animals or not normally used for human consumption. Establishes responsibilities of operators, procedures in case of non-compliance, and penalties.
Legislative Decree No. 3/2009 of 15 June 2009; Regulatory Decree No. 7/2010	Statement of food safety policy objectives and general principles, including risk analysis, harmonization with Codex Alimentarius standards. Establishes Rapid Alert System (*Sistema Integrado de Alerta Rápido*- SIARA) for notification of risks to human health from food and animal feed.
Decree-Law No. 24/2009 of 20 July 2009	Establishes a labelling regime for foodstuffs.
Decree-Law No. 25/2009 of 20 July 2009	Adoption of basic food hygiene standards ("food sector framework law")
Decree-Law No. 32/2010 of 6 September 2010	Establishes the SNCA.
Decree-Law No. 19/2012 of 19 July 2012	Establishes the National Codex Alimentarius Commission.
Law No. 29/VIII/2013 of 13 May 2013 (as notified in G/SPS/N/CPV/3 of 26 May 2015)	New phytosanitary law: provides, *inter alia*, for the establishment of a national register of regulated plants and operators (Article 16); phytosanitary import and export permits for regulated plants (Article 18); 24-hour prior notice for imports of regulated plants (Article 27).
Law No. 30/VIII/2013 of 13 May 2013 (as notified in G/SPS/N/CPV/2 of 26 May 2015)	New veterinary law: provides, *inter alia*, for veterinary controls of all imports of animals and products of animal origin (Article 16).
Decree-Law No. 42/2013 of 31 October 2013 (as notified in G/SPS/N/CPV/1 of 19 December 2013)	Revision of inspection fees for animals and plants, and fish products.
Law No. 11/2015 of 12 February 2015 (as notified in G/SPS/N/CPV/4 of 8 June 2015	Regime for the production of sugar cane spirits (grog).

Source: WTO (2015).

Later in 2010, the then government decided to establish a National Quality Council (***Conselho Nacional da Qualidade*** – CNQ) to oversee all work related to standardization, metrology, and conformity assessment. The CNQ, which is composed of 19 members, brings together government agencies with competence in these areas, the municipalities' association, the Chambers of Commerce, other professional associations, consumers, as well as academic experts. Simultaneously with the creation of the CNQ, the Quality Management Institute (***Instituto de Gestão de Qualidade*** – IGQ) was established to perform secretariat functions for the national council, as well as to engage in the day-to-day coordination of standardization, metrology, and conformity assessment. The IGQ merged with the ***Intellectual Property Institute*** (IPICV) to form IGQPI in August 2014.

Overall, despite promising reforms, ongoing activities could benefit from Cabo Verdean authorities' implementation of certified field procedures that will allow the creation of effective and reliable quality policy systems covering all levels of the food value chain.

Value addition in the fisheries marketing chain

The schematics of the flow evidenced in ***figure 12***, is a framework upon which data was collected for this study. The following data was collected to conduct a quantitative assessment of the fisheries value chain in Cabo Verde:

1. Fishing boat-owners (artisanal, semi-industrial and industrial fleets):

- Annual average selling prices and **quantities of each species** destined for the local market (fresh), processors and for export.

- **Annual average costs of these.**

2. Processors/ processing:

- Annual average purchase prices and **quantities of each fish species** (raw material) from local fishermen, cooperatives and imports.

- Annual average costs.

- Annual average selling prices and **quantities by type of fish product and market of destination** (local market / national market – wholesalers and retailers / export).

All empirical data used for statistical testing was measured by continuous ratio type. Descriptive statistics were added, when appropriate, to show the spread and variability in the dataset from average values, particularly making use of mean values.

Cabo Verdean fish landings were presented earlier on in this document and percentage values of each cost component were added to the results to provide a clearer idea of where the revenues can be grasped. Export data was also displayed earlier in the value chain analysis section of this report. Further, the annual average fish or fish product price per kg (unit value) sold in the local market, to processors, and to foreign markets was determined using the data collected from the surveys during the missions, and then converted into percentages of total price per stage. The same methodology was used for calculating costs.

Finally, an attempt was made to analyze the various costs involved during both primary production (fishing) and during processing. Although in some instances, this method proved infeasible due to the fact that the data from the questionnaires was not delivered. Thus, for the processing stage of the value chain (processing) data presented in Albaladejo (2015) has been used for Cabo Verdean Mackerel scad. ***Table 18*** summarizes the various types of costs for the case of the two activities analyzed (fishing and processing).

Table 18- Type of cost-additions

Activity	Type of costs involved
Fishing	Workers (wages)
	Fishing gear
	Bait
	Fuel and oil
	Provisions
	Other supplies
	Ship maintenance
	Maintenance of other equipment
	Warehouse maintenance
	Licenses
	Preparation of products for market
	Transport of products to market
	Marketing

Processing	Workers (wages)
	Energy
	Other supplies
	Maintenance of equipment
	Building maintenance
	Licenses
	Preparation of products for market
	Transport of products to market
	Marketing

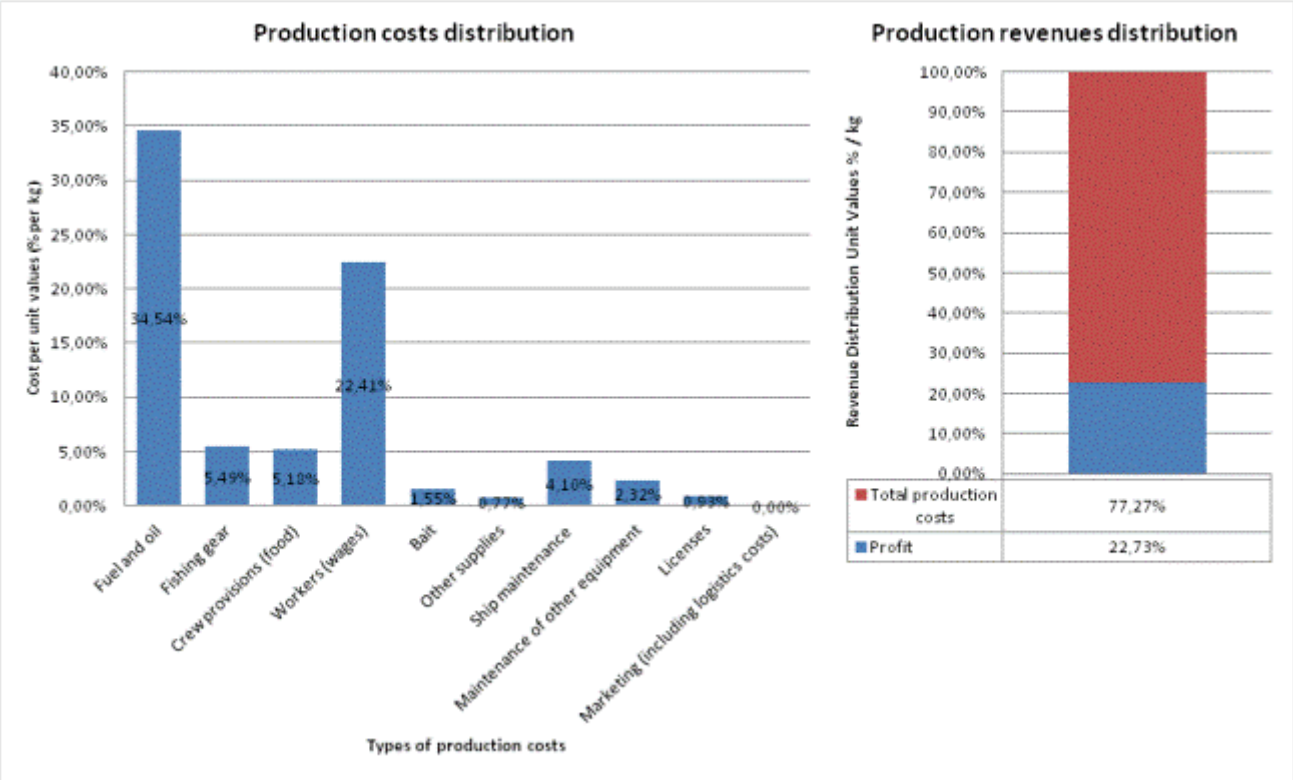
Source: Author's own.

Fisheries – Primary production

Figures 22 to 24 (exemplifying production costs distribution) show what is involved as a fishing boat-owner, to run a vessel for a year. The cost structures for each of the 3 marketing alternatives dealt with in this report are outlined in the graphs (local market, processors and export). By examining the percentage contribution each expenditure category makes toward the annual costs, the allowance that is needed for oil and fuel stands out. This constitutes between 27% - 35% of entire annual expenditure. Salaries of the crew are the next largest contributor to the costs (17%-22%).

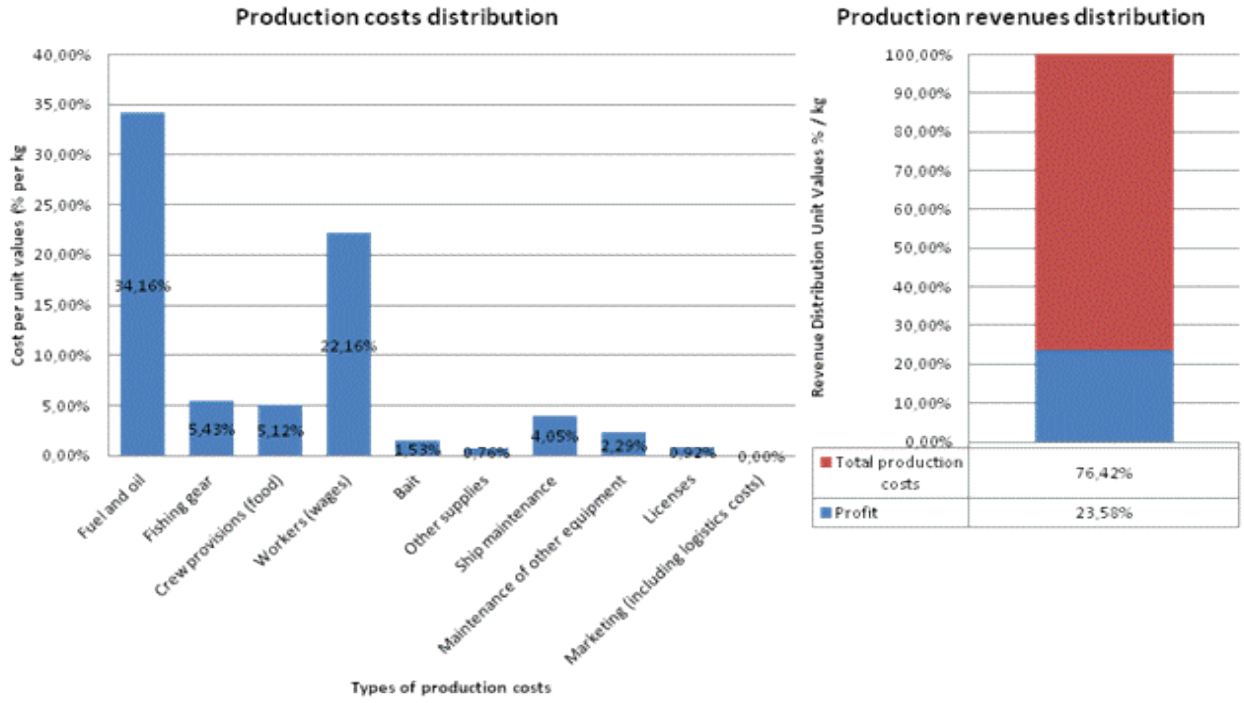
The figures (*22, 24*) also give an account of the distribution of revenue throughout the value chain for the three (3) marketing alternatives. The graphs summarize the spread of revenue through the whole value chain, using average added costs and profits as percentages per kg of fish sold. These were derived as proportions of the whole value chain. Interestingly, the respondents made the most profit when they sold directly to exporters, although, it should be noted that the analysis surrounds a niche product (the lobster) with a particularly peculiar, yet profitable, behaviour. The least profit was made by fisherpeople selling to processors, although this is followed very closely by selling to local market intermediates.

Figure 22-Local market (fresh/chilled)



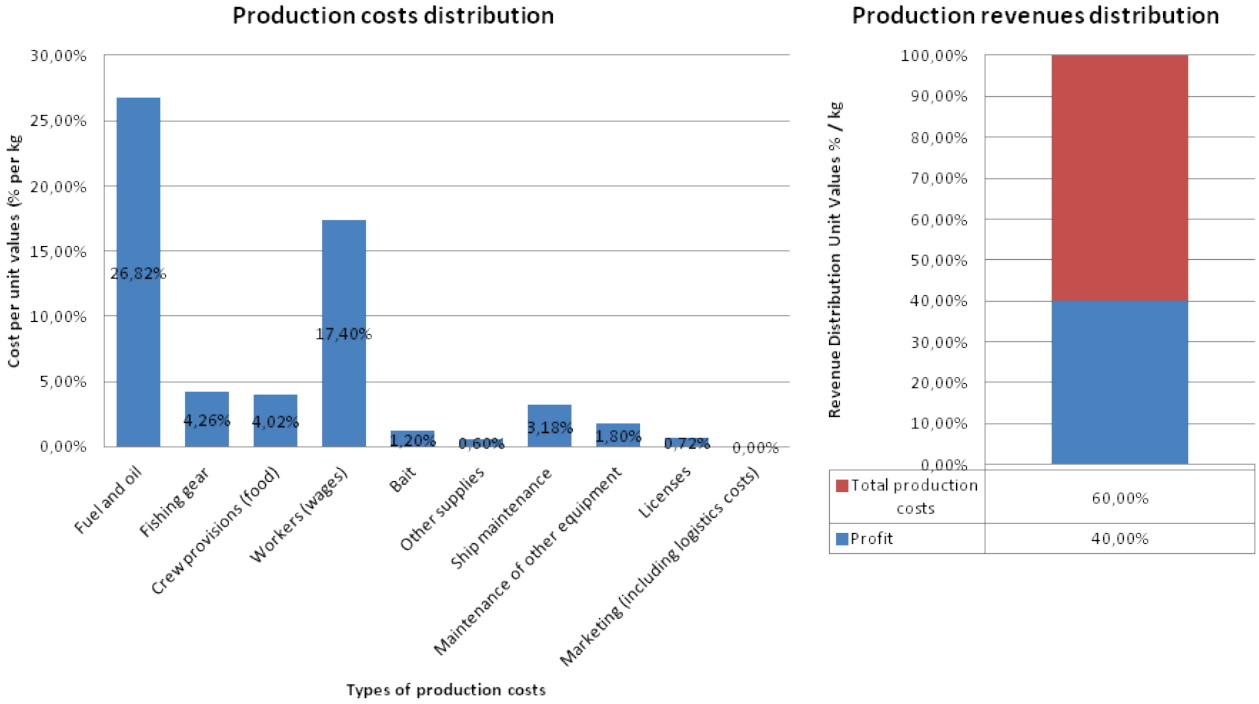
Note: Fish species: wahoo and big-eye scad.
Source: Author's own, based upon data from Type B questionnaires (annex II).

Figure 23– Processors



Note: Fish species: skipjack tuna; frigate tuna and mackerel scad
Source: Author's own, based upon data from Type B questionnaires (annex II).

Figure 24– Export



Note: Fish species: pink lobster.
Source: Author's own, based upon data from Type B questionnaires (annex II).

Fisheries – Trade

Table 19, displayed below, shows a relative equilibrium in terms of the marketing margin related to some important fish species traded on the domestic market. Mackerel and bigeye scads are the most profitable species for Cabo Verde's traders, and other species such as tuna, wahoo, and some demersal fish are very similar.

Table 19- Marketing margins (traders)

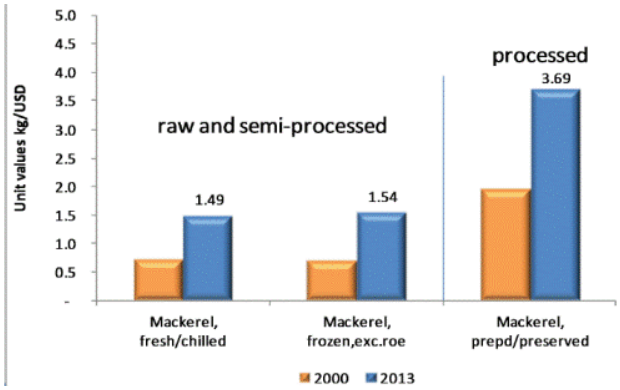
Fish species	Average purchase price	Average resell price	Margin	% (=Margin / Purchase price)
Mackerel scad / Bigeye scad	2,27	2,95	0,68	30,0%
Tuna	3,15	3,94	0,79	25,1%
Wahoo	2,69	3,35	0,66	24,5%
Demersal fish	2,67	3,32	0,65	24,4%
Moray eels	2,72	3,17	0,45	16,7%

Source: Veiga (2015).

Fisheries – Processing

As referred to previously, at the processing stage of the value chain this report utilised data presented in Albaladejo (2015) for mapping out Cabo Verde's mackerel chain.

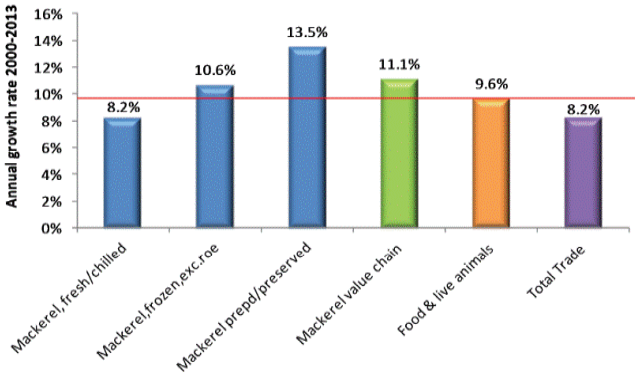
Figure 25- Value added capture (mackerel)



Source: Albaladejo (2015).

The spread of the value-added by Cabo Verde's mackerel semi-processing (*figure 25*) indicates that it incorporates little value (only 3.4%), and the differences increase significantly when analysing the spread between the stages of raw material to processing (≈ + 148%).

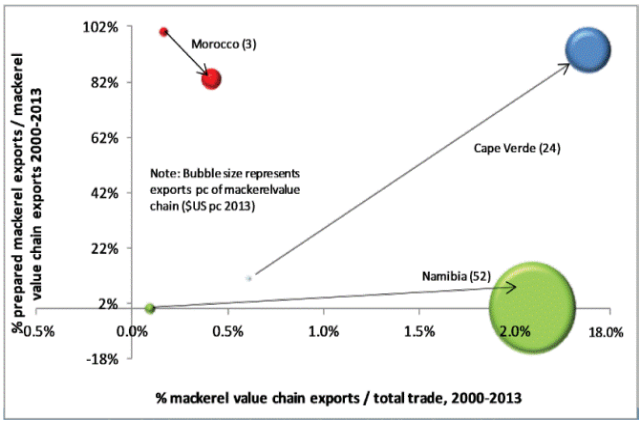
Figure 26- Global demand of mackerel



Source: Albaladejo (2015).

This explains the different behaviours show in relation to the deviation from the mean of the respective average annual growth rates (in the period 2000-2013), as well as with the primary production exhibiting a trend (8.2%) clearly below the average rate of the global value chain (11.1%), and particularly lower than the aggregate of "Food & live animals" (9.6%). From the figures, processed mackerel products denote the highest standard deviation (see ***figure 26***). It also justifies the positive competitive performance of Cabo Verde's prepared mackerel products worldwide (***figure 27***), especially compared with other regional competitors: the favourable trend demonstrates that Cabo Verde's production has been able to excel, which suggests deepening production would be a strategic bet going into the future.

Figure 27- Competitive performance of mackerel

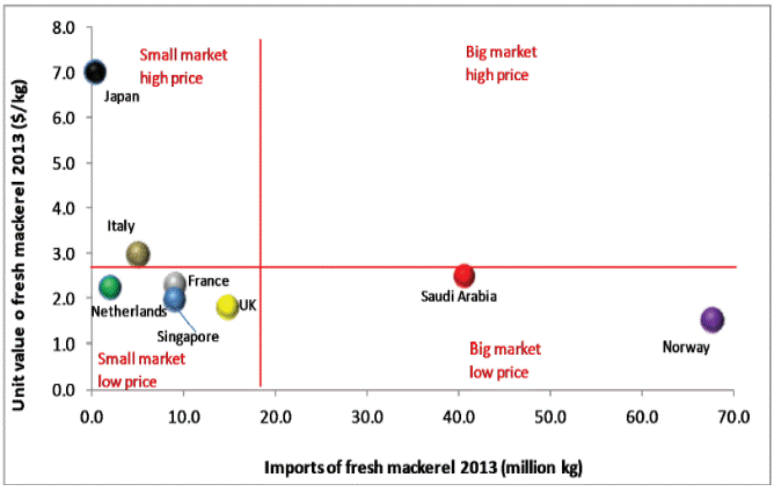


Source: Albaladejo (2015).

Figures 28 and 29 present a worldwide market analysis for fresh and prepared mackerel. From these figures, it is inferred that the attractive markets for fresh mackerel products are Italy and Japan, where the marketing strategy must rely upon differentiated products, since the markets are small, yet demand is high. Central and northern EU markets can also be interesting, but mainly for niche productions (e.g. the "gourmet" segment). However, there are many other factors that can determine the degree of attractiveness of a market, including, the rights of entry, quality parameters, transportation costs, travel times and/ or delivery, existence of substitute products, cultural factors, and so on.

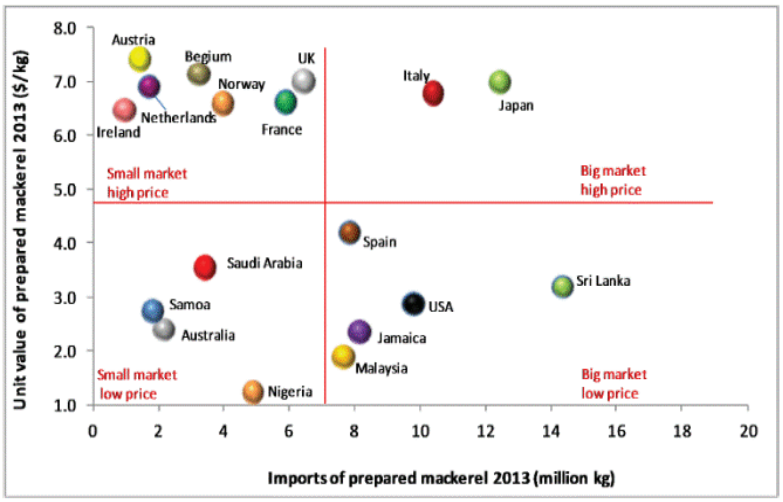
To summarize, the research contained in this report highlights that current human resources training options for boat owners as well as other value chain operators (e.g. semi-processors, processors, and traders) are quite narrow. Skills in value addition, and adequate access to the knowledge and technologies, are needed to meet rising sanitary standards, and increase productivity. This should allow Cabo Verde's production to become more competitive and suitable for differentiation in more demanding, more profitable, foreign niche markets. Moreover, Cabo Verde still lacks adequate organization of primary fish production, as well as inter-professional organizations that involve all relevant stakeholders at all levels of the fisheries value chain from harvesting to marketing.

Figure 28- Attractive markets for fresh mackerel



Source: Albaladejo (2015).

Figure 29- Attractive markets for prepared mackerel



Source: Albaladejo (2015).

IV. CABO VERDE FISHERIES CLUSTER MAPPING

This chapter identifies the architecture and roles played by several cluster actors, elaborates on relevant SWOT analysis, and frames these outputs within Porter´s Diamond Model of Competitiveness.

Fisheries governance

Cabo Verde was among the first countries to ratify the ***UN Convention on the Law of the Sea*** in 1987. In connection to this ratification, a specific fisheries related legal framework was adopted to establish sovereignty over national fishery resources and exclusivity of access (Law Decree No. 17/87). The law reserves the right to all fishing within the territorial waters (a 12 nautical mile zone) for domestic vessels. The definition of 'domestic vessel' was amended in 2014 to include vessels owned in partnership between Cabo-Verdean and foreign nationals, irrespective of the share of foreign ownership. Thus, domestic vessels may be owned by 'collective persons' with a seat in Cabo Verde. Domestic vessels must be registered in the Conventional Register of Ships administered by the Maritime and Ports Agency (AMP). All fishing vessels (artisanal, industrial and hobby fishing vessels included) require licences, valid for the duration of one year and non-transferable. The license fees for domestic fishing vessels are provided for in Law Decree No.45/2008. Industrial fishing licences are issued by the Directorate-General for Marine Resources (DGRN) and licences for artisanal fisheries are issued by the port captain.

The Framework Law for Fisheries ratified in 2005, governs fisheries policy, alongside the ***Fisheries Management Plan*** for 2014-15 and the ***Fisheries Charter*** ("Carta da Política das Pescas") a long-term plan for the fisheries sector in 2013-2018. The Fisheries Management Plan for 2014-15 specifies, inter alia, the restrictions and licensing requirements for the most important fisheries and foreign vessels.

Lobster fishing is reserved for domestic vessels that are 100%-owned by Cabo-Verdean nationals, the state, or other public officials. The industrial fishery of pink lobster is limited to four licensees. Catch quotas for species other than pink lobster have not yet been implemented but most likely will be needed in the future (besides closed seasons and minimum cath sizes) for other species with higher fishing popularity, such as, the grouper, mackerel scad, big-eye scad, or atlantic emperor).

Since 2011, the fisheries sector has been monitored by the Ministry of Infrastructure and Maritime Economy (MIEM), via the Secretariat of State for Maritime Resources (SERM). It is responsible for the definition, coordination, and execution of policies aimed at valorisation, protection, and preservation of marine resources, which encompasses the responsibility of coordinating activities related to the exploitation sea resources, both within the continental shelf as well as across the EEZ.

To advise MIEM and SERM on the definition and coordination of specific policies, the minister is supported by the National Board of Fisheries (CNPRM). CNPRM is constituted under the Law Decree No. 53/2005, and regulated by the Regulatory Decree No. 10/2005, as a consultative body with the objective of ***"advising government in the evaluation, definition, execution and articulation of policies, and in the cooperation between public and private entities and organisations directly or indirectly linked to the fishery sector"***. The minister in charge of the fisheries sector is the Chair of the Council, and other members are appointed by the Minister following proposals from the DGRN. The Council functions as a stakeholder consultative body, and considers a wide range of issues, including budgetary allocations, and proposals for intervention projects by donors.

The duties of the MIEM are pursued through an integrated set of services of direct and indirect administration of the state. DGRN is a service of direct administration of the state with responsibilities in the design, execution, and coordination in the areas of fisheries and marine resources. It has a set of complementary tasks:

1) Support the government in defining national policy, including the management and exploitation of living marine resources.
2) Contribute to the definition and dissemination of legislative measures.
3) Support the negotiation of international agreements and treaties.
4) Cooperate in the formulation and definition of quality standards for seafood products.
5) Grant fishing licenses and authorization to export products, as well as granting other licenses and permissions.

MIEM works on matters relating to the inspection

of the activities of the territorial sea and the EEZ in conjunction with the Ministry of National Defence, the Ministry of Internal Affairs and the Ministry of Justice. Due to the high costs of such operations, the government currently has logistical and financial support from the international community for the intervention in inspection, control, and monitoring of marine and coastal activities. MIEM also works closely with the Ministry of Tourism, Industry and Energy on formulating and implementing cross-sectoral policies.

In 2014, the control and inspection of the quality of seafood products was separated from DGRM and assigned to ACOPESCA. ***The National Institute for the Fisheries Development*** (INDP) is a self-governing institution with administrative and financial autonomy and with its base in Mindelo, as well as regional representation in Praia. It also has a network of extension branches that cover all inhabited islands. INDP's mandate is to carry out studies, develop research actions, and promote the development of fisheries and aquaculture. INDP has three distinct departments, oriented primarily towards: fisheries research, fisheries promotion and development, and studies and projects. Moreover, it is the entity responsible for the sector's statistical database.

Another relevant institution is the Fisheries Development Fund (FDP) established in 1994 as a governmental agency to provide support to the fisheries sector. It had the responsibility of fisheries promotion and development, through the provision of financial incentives to carry out projects and enterprises in the sector. However it was recently closed and its management was assigned to Novo Banco.

In 2009, the government created the Agency for the Development of Enterprises and Innovation (ADEIADEI pursues the promotion, competitiveness, and development of the nation's MSMEs, and carries out a number of projects targeting the nation's youth. Its support may include incubation, financing, mentoring and coaching, and assistance in business development. Further measures include the deployment of professionals, exchange of professional experiences, internships, and active promotion of the diaspora communities' participation.

Already in 2015, the government created ***Cabo Verde Garante*** (a mutual guarantee fund) that will be funded with 50 million CVE to support MSMEs. The maximum loan available to the companies is around CVE 10 million and the fund offers a guarantee of 50 percent of that amount. Companies that benefit from the Cabo Verde Garante fund pay a service fee for funds sustainability. Business owners who want to benefit from government support should submit the relevant projects to Cabo Verde Garante in order to assess feasibility and risks before said MSME is granted access to bank loans. CV Garante was proposed by ADEI and is part of the institution's overall strategy for pursuing access to finance through a combination of multiple mechanisms. The fund will provide MSMEs with limited capital or property, to access commercial bank financing. The mutual guarantee society then provides guarantees for shareholding companies, allowing them access more favourable loans, with lower interest rates, longer payback periods, etc. It is a system for pooling funds to decrease the risks inherent to providing loans to SMEs.

In the executive context, there are two chambers of commerce in Cabo Verde, one in the Barlavento (or northern islands) and one in the Sotavento (southern islands). The chambers of commerce are the largest aggregations of private sector actors in the country and offer their members a variety of services for a fee. These services are all designed to assist entrepreneurs in the establishment, growth, and consolidation of their companies. The most notable programs and services include:

- Organized trips to create greater links between local companies and businesses in other regions and countries.
- Provision of import and export licenses as a means of raising operational funds.
- Promoting the competitiveness of Cabo Verdean SMEs, facilitating their access to innovation, and training and technology transfer, through ***the Growth and Competitiveness Fund*** (Fundo de Crescimento e Competitividade - FCC), which is supported by the Ministry of Finance and Planning and the World Bank. It is open to MSMEs, as well as groups of companies.
- Professional trainings that strengthen skills of managers, decision-makers, and technical staff. An annual training plan is made available on their website and each member can pay to attend those they wish to.

Correspondingly, since independence in 1975 until 1990, there was a strong movement supporting the creation of cooperatives in specific sectors and activities. This was also the predominant form of organization among artisanal fisherpeople, with the creation of thirty-one (31) cooperatives in the country.[15] However, their role in development has been limited and only eight (8) of these cooperatives

15 The dispertion of cooperatives are as follows: Santiago – 21, S. Antão – 3, S. Vicente – 3, S. Nicolau – 1, Fogo – 2, Maio – 1.

are currently functioning. The INDP is making efforts to reactivate and reinforce these cooperatives on islands such as Maio, Fogo and Brava. In Santiago, of seven community support centers that exist (***Centros Técnico e Social*** – CTS), funded in part by the African Development Bank, only two or three are functioning to an decent level.

The major concerns for these associations are the poor standards of land-based support infrastructure, lacking supply of ice, an insufficient credit system for the maintenance and development of the national fleet, and high risks associated with external factors beyond government control.

Local fishery associations are sometimes involved in designing and implementing fishery management plans as well as local aspects of surveillance, control, and the enforcement of fisheries regulations and activities. Ideally, associations could also be involved in activities such as local data collection for fisheries research, existing infrastructure maintenance and management, micro-credit activities, local training and education, and improvement of fish quality, fish marketing and fish prices. Hence, local associations may become general service organizations that are able to earn money by providing a multitude of local services necessary for effective management of local fishing activities.

A further relevant institution, ***the Fishing Boat-Owners Association of Cabo Verde*** (APESC) is a professional organization, founded in 2005. Today it has thirty-two (32) associate members (including both artisanal and semi-industrial and industrial ship-owners and their professional associations), covering all of the islands of Cabo Verde, with the exception of Santiago. APESC has six key intervention axes, namely:

- AXIS 1 - Improve the living conditions of the Cabo Verdean fishing community.
- AXIS 2 - Improve working conditions for fishing vessel owners, supporting them in the acquisition of new fishing vessels, remodel and restore the current, acquiring mills and fishing technology.
- AXIS 3 - Contribute to increased production and helping to introduce new fishing technologies.
- AXIS 4 - Mobilize financial resources for financing fishing activities including provision of services to third parties based on the use of infrastructure and existing equipment.
- AXIS 5 – Manage and maintain the infrastructure and equipment made available to fisheries actors for the promotion of fisheries development.
- AXIS 6 – Cooperate with the relevant state departments of fisheries regarding technical and vocational training of associates and dissemination of new fishing technologies.

Finally, the ***Ports of Cabo Verde*** (ENAPOR) organization is the National Port Authority of Cabo Verde. It constructs and manages all ports of Cabo Verde. The four (4) main Cabo Verdean ports, which are currently under public procedure for concession to private operators, are: Mindelo on São Vicente, Praia on Santiago, Palmeira on Sal, and Porto Novo on Santo Antão. There are also other smaller harbors, like Tarrafal on São Nicolau, Sal Rei on Boa Vista, Vila do Maio (Porto Inglês) on Maio, São Filipe on Fogo, and Furna on Brava. All of them have, at least, two uses, usually for both commercial and small-scale fisheries purposes. Cabnave is a medium sized ship repair yard located in Mindelo (São Vicente). The shipyard was commissioned in 1983, and since then it has carried out a variety of repairs on different types of fishing vessels of many origins.

Support institutions

As previously referred to, Novo Banco, SA, is a credit and micro-finance institution established in 2010. The organization has specific banking credit products that are tailored towards artisanal and industrial fisheries, specifically for the acquisition and construction of vessels, vessel repair and maintenance, the acquisition of specialized equipment (e.g. safety on board and guidance), fishing gear and raw material, as well as for financing working capital. Novo Banco's main shareholders are Correios de Cabo Verde (25%), the Imobiliária Fundiária e Habitat (25%), the Caixa Económica Cabo Verde (20%), the Instituto Nacional de Previdencial Social (20%), the State of Cabo Verde (5%), and the Banco Português de Gestão (5%). As mentioned earlier, the management of the Fisheries Development Fund (FDP) was recently assigned to Novo Banco,[16]which guarantees collateral for the financing for the sector. In fact, according to information collected in the field interviews, for micro-loans under €4,500, FDP can guarantee 70% of the funding. Beyond this threshold, it can guarantee 50% of the funding.

Also relevant to this report, ***the West Africa Regional Fisheries Program*** (WARFP, designated PRAO-CV in Cabo Verde) is a World Bank co-funded aid program established in 2009, with a time horizon of 2019, in which four (4) countries participate (Cabo Verde, Liberia, Sierra Leone and Senegal). Its global objective is to sustainably increase overall wealth generated by the exploitation of marine fisheries resources in West Africa, and the proportion of wealth captured

16 Although the official transfer has not yet been signed.

by West African countries themselves. The combined development objectives of the proposed project is to strengthen the capacity of Cabo Verde, Liberia, Senegal and Sierra Leone to govern and manage targeted fisheries, reduce illegal fishing, and to increase local value-added to fish products.

With reference to complimentary UNIDO activities, following a successful first phase from 2001 to 2005, the second phase of the ***West Africa Quality Programme*** (WAQP), was implemented from 2007 to 2012. The EU is the international donor behind this initiative, and UNIDO is the international implementing agency. The programme comprises private, and public, partners and beneficiaries: including the ECOWAS Commission, the 15 ECOWAS Member States[17] and Mauritania, national organizations, professional associations, and more.

The third phase of the WAGSP is currently underway with the support of UNIDO's Trade Capacity Building team, the official launch of this phase (2014-2018) for Cabo Verde was in June 2015, and national training for communication professionals on quality infrastructure took place in September of the same year. Cabo Verde has actively participated in the programme's harmonization meetings (ECOSHAM), and at the present time, conformity assessment bodies have been preselected to be evaluated within the programme's framework for accreditation. The bodies include: Inlab laboratories (INPHARMA), LABCAL, the Laboratory of Clinic Analysis (LQBOSOVEMILDA) as well as ACOPESCA (Autoridade Competente para os produtos da Pesca), the latter of which is extremely promising for this reports' purposes. Currently, an expert is reviewing the projects moves in Cabo Verde in order to produce a matrix of actions for 2016 and a further WAQSP meeting is planned for this year.

The main objective of the programme is to support the ECOWAS Commission and the 16 West African countries in strengthening the quality of their infrastructure for greater effectiveness, to enhance competitiveness, and support better intra- and inter-regional trade participation. Components and expected results are the following:

- Quality policy: harmonization of national quality policies with the regional one, adoption of a law on consumer information and protection, and establishment of a financial mechanism to sustain the West Africa infrastructure quality.
- Standardization: support of the regional standards' harmonization mechanism (ECOSHAM), adoption of further regional standards, and strengthening of national standard bodies.
- Accreditation: establishment of a regional accreditation system.
- Certification: establishment of a regional product certification system.
- Metrology: establishment of a regional metrology and calibration system.
- Conformity assessment: strengthening of conformity assessment bodies and services.
- Quality culture: creation and strengthening of quality centers of excellence and awareness of the quality culture in the private sector, establishment of national and ECOWAS quality awards, and establishment of a regional database on quality.

In the region, and including Cabo Verde, UNIDO oversees the Country Programme Framework (CPF), a powerful vehicle with the aim to spur inclusive and sustainable industrial development (ISID) as well as working to support member states in implementing their national strategies and policies. Member countries will also serve as significant drivers for inclusive and sustainable development in the region.

The architecture

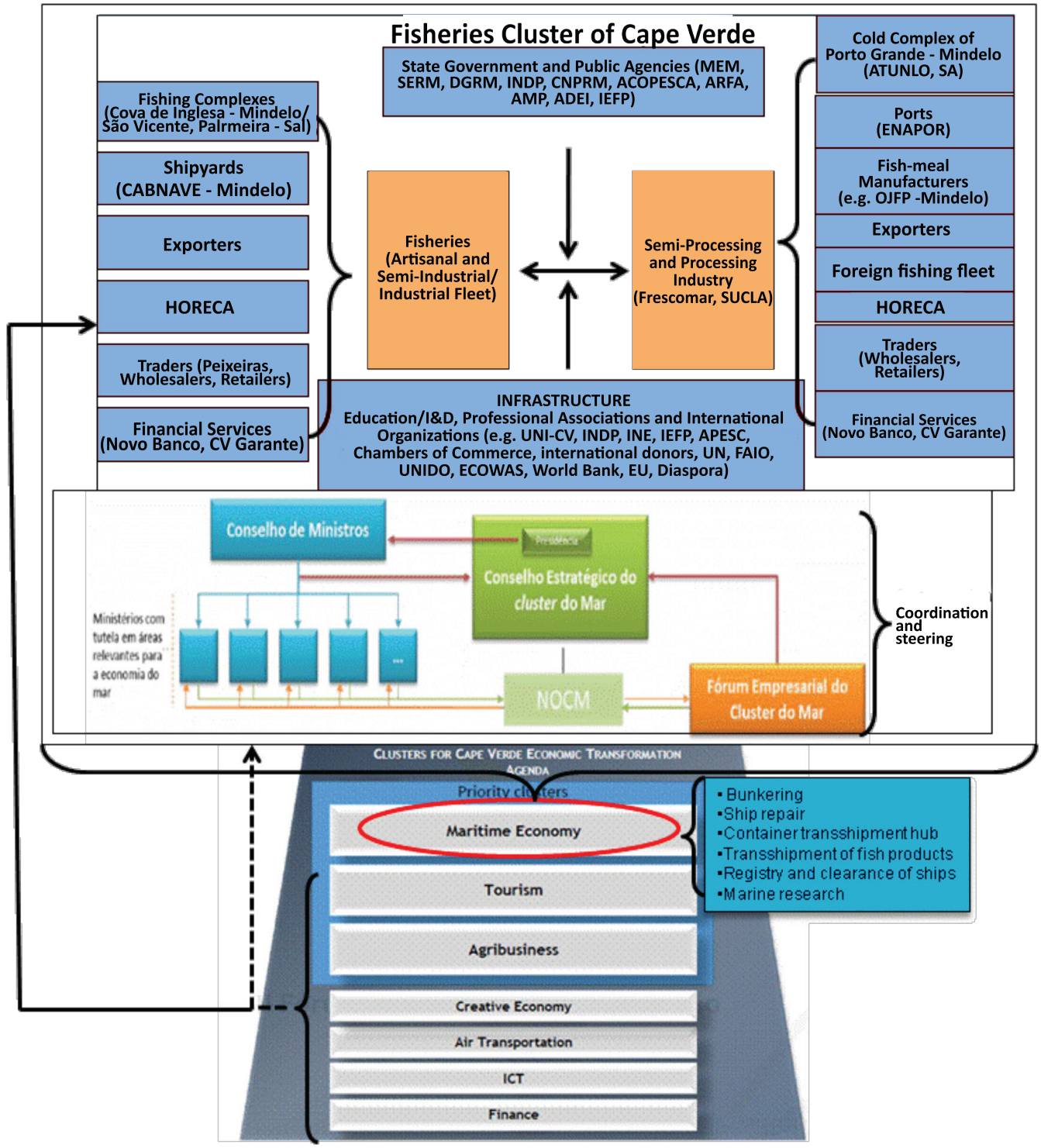
The information presented so far allows the author to present the Fisheries Cluster of Cabo Verde in diagrammatic form, as per ***figure 30***. This schematic represents three different groups of stakeholders that interact in this cluster: the first one, comprises of actors that directly intervene in the fisheries sector – governance and support – as referred to by Professor Michael E. Porter in his seminal work"(…) a geographical proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and externalities"[18]. The second level of the diagram, references top governmental institutions that exert a pivotal role between first and third levels. Their mission involves the coordination and steering of the cluster activities, besides promoting the necessary backward and forward linkages, intra- and inter- sectorally. Finally, the third level of the cluster diagram comprises all the other economic clusters constituting the pillars of Cabo Verde´s Economic Transformation Agenda. Their presence is pre-assumed of utmost importance due to the potential and desirable synergies that could be created within the fisheries sector.

17 Benin, Burkina Faso, Cabo Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo.

18 Porter, M. E. (1998). On Competition. Harvard Busniess Review.

Figure 30– Mapping of the fisheries cluster of Cabo Verde

Source: Author's own, based on Michael Porter's format for describing industry-based clusters.



SWOT analysis

The following section presents SWOT analysis for the Cabo Verde's fisheries sector (*table 20*).

Table 20– SWOT analysis

STRENGTHS

Relatively large EEZ with good chances of expansion
Existence of a wide variety of commercially valuable species
Good knowledge of the fishing areas and great tradition of fishing activity
High tourism potential with excellent opportunities for cross-sector leveraging, specifically with the primary sector (agriculture)
A diaspora population estimated at around one million people
Exploitation of coastal fishery resources confined to nationals
Existence of port infrastructure in the major centers of consumption
Cabo Verde geostrategic position for international transport and a good integration into the global economy - at the crossroads of North America and Africa, and on the intersection of South America and Europe
Existence of an industrial fleet with highly specialized segments (lobster and small pelagic)
Know-how in marine R&D available at INDP and UNI-CV
Fishing devices and methods generally suitable to the sector's situation
Existence of a satisfactory institutional and legislative framework for fisheries
Existence of a growing international and domestic market for seafood products
Under-going and completed private and public investments in fisheries infrastructures and processing facilities (e.g. cold storage and fishing complexes, new production lines for fish processing)
Growing, diversified, and profitable export market
Existence of a National Plan for the Management of Fishery Resources
Existence of professional organizations, and representation of professionals and their communities
Existence of a clear political will for the promotion and sustainable development of the sector
Existence of programs, projects, and cooperation initiatives for the sector's development both promoted by the government and/or international institutions
Growing contribution of the sector to improvement of the trade balance
Existence of specialized repair and maintenance services for industrial fishing vessels (e.g. Cabnave, in Mindelo)
Existence (even with severe resource constraints) of specialized services aimed at fisheries and fish products quality control, and at gathering statistical data about fishing activities
Existence of an adequate legal framework for SPS and food quality system, although suffering from lack of resources, which could guarantee more effective implementation
Existence of downstream industries to process fish waste from the canneries
Good environmental quality of the maritime waters surrounding Cabo Verde due to the low levels of pollution

WEAKNESSES

High energy costs for fishing vessels and processors
Relatively small stock availability in coastal areas, dispersed distribution of fish resources, and high multi-specificity
High fluctuation in catches of live bait (e.g. juveniles of big-eye scad) and lack of viable alternatives for securing bait supply, essential for important fisheries like the pole and line of gaiado
Low productivity and profitability, especially among artisanal fishing operators
Low incorporation of national value and limited product differentiation
Deficit on training and HR capacitation infrastructures
Private sector remains small in size and fragmented, with limited export participation
Limited artisanal vessels in terms of autonomy, safety, and storage capability on board
Old semi-industrial and industrial fleet, requiring urgent replacement or reshuffle
Difficult access to some fishing grounds
Inadequate industrial fleet, limited in terms of the combined use of multiple devices and without cold storage aboard
Excessive concentration of fishing effort in the coastal zone, especially focused on demersal species;
Deficient cold-storage and freezing capacity on some islands
No / inadequate support infrastructure (fishing pier nonexistent on several islands)
Need for a national network of official landing sites and spots for whole selling fresh catch (or “lotas”)
Difficulties in the logistics of inter-island fish distribution
HORECA channel and processing industries highly dependent upon fish imports
Severe bottlenecks to accessing financial credit for investment
INDP, DGRM, and ACOPESCA without representation on some of the islands and consequently instances of weak inspection, control, and surveillance capacity of fishing activities
Monitoring deficiencies, which jeopardizes the quality of official fishing statistics
Shortage of skilled and specialized labor force and limited supply of professional training programmes
Low participation of fishermen (specifically artisanal) to be involved in training programmes, also due to awareness and limited dissemination initiatives
Predisposition for street vending of fish, in poor sanitary conditions
Lack of financial resources to finance research activities, exploratory fisheries, and transfer of innovative fishing technology
Limited knowledge of potential deep sea resources
Absence of resource co-management processes
Increasing abandonment of the fishing sector by young people
Limited human capital for investigative tasks of stock exploitation, analysis, and assessment
Intensive and over-exploitation of higher commercial value resources
Inadequate support service for the organization of sector professionals
Underutilization of opportunities for export
Failure to capitalize on fish marketing valorization, e.g. through higher quality products and eco-friendly labelling
Severe financial constraints and lack of specific legal framework for aquaculture and mariculture development
Difficulty in the export of fish landed by most non-resident operators on São Vicente
Lack of raw material for canning industry
Increasing imports of seafood, including shellfish, lobster, clams, frozen fish, among others by the local HORECA
High number of family-based microfirms with weak managerial capacity and limited technological absorption
Low sector-wide education levels
Lack of coastline and maritime spatial plans
Lack of scientific research studies to determine the current levels of discards (e.g. catches below minimum sizes, bycatches, etc.) occurring in Cabo Verde’s EEZ
Underutilization of opportunities and options offered under the fisheries agreements with other countries in the region (e.g. Mauritania).

OPPORTUNITIES

Opportunities for greenfield investments in tourism to ensure its long term sustainability and increase revenues, whilst increasing benefits to local people and the economy's sectors
Exploitation of lesser known deep demersal species with high commercial value
Growing demand for seafood products both domestically and internationally
High potential for the development of renewable energy sources.
Cooling infrastructure expansion (in Mindelo and undergoing in Palmeira – Sal) and the improvement of fish landing sites (e.g. Cova de Inglesa, in Mindelo)
Preferential access to the EU and ECOWAS markets with exemption of import tariffs (GSP Agreement). Cabo Verde was also elected for AGOA under the Memorandum of Agreement for LDCs
Existence of high valued endemic species (e.g. pink lobster, "garoupa de Madeira", among others) that could significantly benefit from geographic and eco-friendly capture certification
Strong cultural and historical connection with the sea
Available fisheries management plan with clear guidance on the potential of certain resources and conservation measures
Availability of international partners to participate in cooperation networks (R&D, marine resources conservation, etc.)
Existence of fisheries agreements with other countries in the region, which facilitates access to resources elsewhere
Existence of institutions with expertise in the fields of R&D, statistics, and training and capacity empowerment (UNI-CV, INDP, INE, IEFP)
Recent creation of CV-Garante can ameliorate the severe financing constraints
Good conditions for development of aqua-culture for production of native species
Existence of professional associations willing to participate in the search for sectorial bottlenecks
Product differentiation and market segmentation
Cluster development approaches and joint actions / consortia
Existing demand for frozen tuna fillets and canned tuna loins
Better perspectives for the raw material supply of local canneries from landings of the foreign fishing fleet made possible with the construction of the Cold Complex of Porto Grande, in Mindelo

THREATS

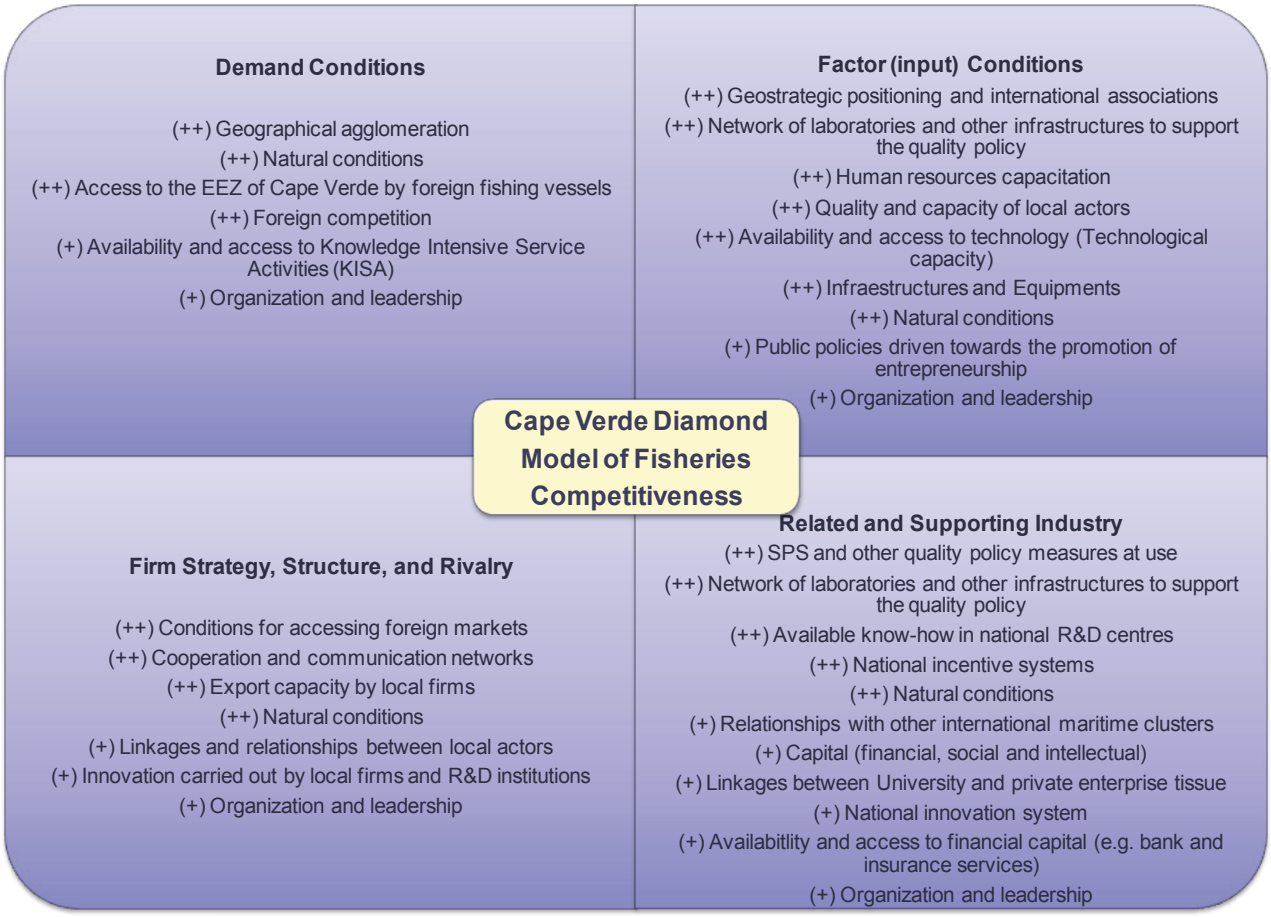
Rising cost of production (e.g. energy – fuel, bait, … for vessels and electricity, water, raw materials, … for processors)
Degradation of some of the more important commercial fishing resources, especially those in the coastal areas
Illegal fishing of protected species, permanently or during closed seasons, and inefficient or poor control by the authorities of this type of activities
Limited surveillance and control of IUU practices
Ageing of industrial fleet and replacement difficulty
Increasing food quality demands from foreign importers
Financial access
Increasing pressure over the purse seine and pole and line local industrial fleet for tuna catches, due to the heavy competition from big foreign purse seiners
Competition in the international market from countries with greater fish resources and/or lower production costs and/or lower demand in terms of environmental conservation
Climate change and its effects

Diamond model

Table 21 below presents the diamond model of competitive advantage with reference to the fisheries cluster of Cabo Verde, created with data collected from the type A questionnaires and the SWOT analysis. The factor conditions displayed below are those chosen by more than 50% of interviewed stakeholders combining the "moderate" and "strong" positive effects (highlighted in red – ***annex I***), and also including those that get more than a 50% quota of preferences in the aggregate "ST positive" which combines the "weak", "moderate", and "strong" positive impacts on the cluster. The latter, although evaluated as having a positive effect on the fisheries cluster of Cabo Verde, are not yet well appreciated by the stakeholders, and therefore, the ones that should be given priority when designing development initiative proposals should be aimed at enhancing competitiveness.

To sum up, the effective development of the Cabo Verde´s fisheries value chain, and of the sea cluster as a whole requires efficient mechanisms in place to promote organization, and encourage dialogue and communication between and within stakeholder groups. This in turn will lead to the exploration of wider opportunities in product development, product diversification, and market development.

Table 21- Adaptation of Porter's Diamond Model (Porter, 1990) for the case of the Cabo Verdean fisheries cluster



Source: Based upon the results from the type A questionnaires and SWOT analysis – also shown in annex I.

V. RECOMMENDATIONS

This chapter outlines the most suitable development strategies for enhancing the competitiveness of Cabo Verde fisheries and contributing to the livelihoods of fishing communities. The strategies were developed following stakeholder meetings and field missions. The strategic operative measures presented below are those unanimously chosen by the stakeholder's panel in relation to the most demanding scenario.[20] These measures support a set of initiatives which could form recommendations to enhance the competitiveness of Cabo Verde fisheries.

The biggest challenge faced by of Cabo Verde fish producers is their difficulty in obtaining finance, particularly to increase the radius of their fishing activities. A larger radius would allow fish producers to compete with foreign fleets operating within the Cabo Verde EEZ and eventually also to make use of fishing agreements with neighbouring countries. Greater access to finance would also facilitate fish producers' ability to meet the stringent quality and safety standards imposed on their products for local markets (fresh/chilled products) as well as for the HORECA channel.

A development tool used extensively by the Business Environment, Cluster and Innovation Division in the Department of Trade, Investment and Innovation at UNIDO is cluster development, which offers opportunities for MSMEs to overcome barriers to growth. UNIDO's approach to cluster development places great importance on strengthening the cluster's governance mechanisms by changing patterns of interactions among cluster stakeholders and establishing, or reinforcing, institutions that can lead and coordinate joint actions. Through coordinated joint actions the cluster can reach a higher level of performance. Good performance in turn increases the cluster's "social capital stock" (embodied e.g. in the trust, shared values). In many instances, cluster strategies would be a positive move in the direction of developing the Cabo Verdean fisheries sector.

MSME's limited access to finance impedes their ability to handle more products, to expand their businesses, to upgrade their operations (both qualitatively and quantitatively), or, simply to fulfil their urgent needs for renovating fishing vessels. The main areas where interventions are needed include:

- access to ice at most landing centres,
- cold storage facilities,
- appropriate hygiene and safety conditions aboard fishing vessels (especially those from the artisanal fleet),
- the overall state of fish handling infrastructure at sporadic and diverse landing spots across the islands (see ***table 22***).

These deficiencies have impeded competitiveness and have imposed heavy market access constraints on Cabo Verde's fisheries productions (HORECA, and exports more severely). A major improvement would be to create an environment that enables the sector to transition from informality to formality, especially for the artisanal fishing fleet's marketing activities.

Certification of fisheries products depends on the effective implementation of control protocols and verification by testing samples at accredited laboratories equipped for fish and fisheries product analysis. Cabo Verde would benefit greatly from producing more reliable and comprehensive fishing statistics which would ease compliance certification to international standards and provide a foundation for national quality monitoring on a long-term, sustainable basis.

20 ST positive plus, which combines the "moderate" and "strong" positive effects - highlighted in red in annex I.

Table 22- Fish handling infrastructure (existent in Santiago and São Vicente islands)

Communities	Fish handling infrastructure	Conservation status
ISLAND OF SANTIAGO		
Port of Praia	Fishing pier Ice machines Water Fuel	Very good Good Available Available
Cidade Velha	None	N/A
Porto Mosquito	Social Technical Center Ice machine Cold storage chamber	Needs rehabilitation Broken Broken
Pedra Badejo	Social Technical Centre Ice machine Cold storage chamber	Reasonable Broken Reasonable
Calheta	None	N/A
Tarrafal	Fisherman's Centre Ice machine	Reasonable Broken
Ribeira da Barca	Social Technical Center Ice machine Cold storage chamber Processing room	Good Good Good Very good
Rincão	Ice machine	Broken
ISLAND OF SÃO VICENTE		
Porto de Cova d'Inglesa	Fishing pier, ice machines and cold storage facilities Fuel Water	Very good Available Available
S. Pedro	Fisherman's Centre	Good
Salamansa	Fisherman's Centre	Good
Calhau	Fisherman's Centre	Good
Fish Market ("Mercado de Peixe)	Cold storage chamber	Good

Note: Survey of the economic operators from Santiago and São Vicente islands.
Source: Veiga (2015).

The transportation systems used for fish products between production and landing centres and for semi-processing[21] or local market centres are deficient or inefficient, leading to important post-catch quality losses, even on the two better equipped islands, Santiago and São Vicente (see ***tables 23*** and ***24***). This is mainly due to a lack of official landing sites (or "lotas") that are adequately equipped to guarantee food safety requirements.

Equally significant constraints are the lack of hygiene and food safety standard measures aboard fishing vessels, specifically due to deficient packaging of products and the excessive time lost before fish is landed. Besides the increased risks for local consumers that buy these fish and products at local fresh markets, potential exports and market access to hotels and restaurants are also hindered for such produce. The difficulty and high costs of complying with all safety measures, due to the lack of knowledge, prior to the sales themselves, also contribute to a very significant degree of informality, and continued informality, within the sector.

Table 23-Freshness assessment of the fish landed

ISLAND	No. of landings evaluated	Total per freshness category		
		Cat. Extra	Cat. A (Good)	Cat. B (Regular)
São Vicente	36	19 (52.8%)	12 (33.3%)	5 (13.9%)
Santia-go	21	13 (65%)	7 (35%)	1 (5%)
TOTAL	57	32 (56.2%)	19 (33.3%)	6 (10.5%)

Source: Barbosa, Monteiro and Silva (2015).

Current human resources training options for boat owners, as well as other value chain operators (e.g. semi-processors, processors and traders), are quite narrow due to a lack of training service providers that can administer training courses on handling/processing technology. Moreover, product and production technology innovation needs adequate international assistance to guarantee the dissemination of knowledge. Beyond sufficient access to knowledge and technologies, skills in value addition are needed to meet rising sanitary standards, to increase productivity and/or quality to make Cabo Verde's products more competitive and suitable for differentiation in a demanding, but also more profitable, foreign niche market.

Given the difficulties in effectively involving potential users in professional and training courses, innovative approaches are needed to increase the level of engagement of the fisheries value chain actors especially those in artisanal fishing. Within Cabo Verdean families, men usually undertake fishing activities while women take care of downstream logistics, namely, fish processing and marketing. There is therefore potential gain in training courses (e.g. regarding production technology, product quality and food safety procedures) that involve the whole household as a way to increase and sustain participation in courses. The overall initiative to increase capacity and promote product diversification could also increase access to jobs for women in Cabo Verde. This is a pertinent poverty reduction strategy since female headed-households tend to be 1.5 times more likely to be poor than those headed by men. If women do have decent income, they tend to spend more on the entire family, as stated earlier in this report.

Table 24- Assessment of other quality parameters of the fish landed

Landing site	Number of landings evaluated	Total per temperature range			Hygiene level of the sur-faces	Hygiene level of the han-dlers	Good practices assess-ment concerning fish handling
		T (0 – 4 ◦ C)	T (5 – 10 ◦ C)	T (> 10 ◦ C)			
São Vicente	36	15 (41.7%)	11 (30.5%)	10 (27.8%)	Medium	Medium	Medium
Santiago	21	7 (33.3%)	12 (57.2%)	2 (9.5%)	Low	Medium	Low
TOTAL	57	22 (38.6%)	23 (40.4%)	12 (21.0%)	Low	Medium	Low

Source: Barbosa, Monteiro and Silva (2015).

21 Not including those carried out in fishing complexes like Cova d'Inglesa and destined for local canneries

Cabo Verde needs to adopt a cluster development strategy to promote a conducive environment for broad-based and inclusive forms of development. Due to their small size, individual MSMEs are often unable to realize economies of scale, utilize new knowledge and technology, benefit from knowledge spillovers. Ultimately, Cabo Verde fisheries cannot adequately take advantage of market opportunities that require product innovation and/or upgrading or compliance with international standards. Therefore, this report highly recommends initiatives that encourage enterprises and institutions to undertake joint actions that could ultimately yield benefits to the cluster as a whole and the communities in which they are embedded.

This report also points to the potential of aquaculture projects to have a large development impact in Cabo Verde. Farmed endemic species substitute for wild catches especially for those species that are now more intensely farmed. There is evidence that there is commercial potential for fresh and semi-processed and processed fish to meet local and especially external market demand. These fish may be more suitable to be used as raw materials for processing or as live bait for other fisheries. Feasibility studies involving site selection, environmental impacts evaluation, fish biological and physiological adaptation, including sanitary and feed requirements, existing infrastructure (access to local farm labor, access to reliable and low cost sources of energy, transportation networks, logistical support, and communications networks) and economic and finance assessment, are critical to identify both the strengths and weaknesses associated with the proposed aquaculture project. This will allow a determination as to whether or not limitations warrant disqualification of the proposed project from further consideration.

Effective development of the value chain requires better mechanisms to encourage dialogue between and within stakeholder groups. This will lead to the exploration of wider opportunities in product development, product diversification, and market development. To do so, Cabo Verde needs better organization of primary fish production as well as inter-professional organizations that involve all relevant stakeholders at all levels of the fisheries value chain from harvesting to the end markets.

The medium–long term future for Cabo Verde's sustainable fisheries production relies upon a healthy combination of rational extraction of wild resources and product certification based upon the adoption of eco-friendly techniques. The additional gains that can be derived from the sector will be primarily from improved efficiency and effectiveness of both production and distribution processes, transformation, and marketing but not as a result of increased extractive activities. Whenever necessary, active measures to support all those that want or need to leave fishing activities must be put in place, for instance, through re-training and diversification of activities. The implementation of co-management processes could constitute effective tools for more sustained and integrated fisheries governance, capable of gathering wills and promoting the necessary engagement of all stakeholders by appealing to greater participation and empowerment of local actors in the decision-making processes. To do so, adequate development policies must be put in place to support the establishment of local networks for fishery co-management, involving local fisheries-dependent communities, and other pertinent stakeholders in the fisheries value chain. This, however, will require considerable efforts in terms of training personnel in management techniques, bookkeeping, data collection, maintenance of equipment and infrastructure. The UNI-CV could play a decisive role in providing the necessary training, vocational and otherwise, for those interested in leaving the fisheries sector.

Below, tangible recommended outputs and activities for the development of the Cabo Verdean fisheries sector are outlined. Conducting these activities would contribute to the Economic Transformation Strategy, the Strategic Trade Development Plan 2015-2020, the GPRSP III, the Country Programme Framework, as well as multiple SDGs and to inclusive sustainable development overall:

Investment Promotion and Technology

I) Output: A National Technological Centre for coordinating and disseminating codes of good practice for fisheries value chains is set up and in motion

Keywords: Innovation, research into diversification, ideas, training

Thematic areas: Industrial investment, quality and food standards, quality management, technology, sustainability

Relevant SDGs: 2, 4, 9, 16

Main counterparts: UNIDO, foreign universities and university partners, the SCI

Other stakeholders: NOCMAR

Beneficaries: Fisherpeople and fisheries associations and MSMEs specializing in catching and storing fish, researchers and research institutions

Activities:

1. Research and feasability studies: investigation of the existing human capital and qualified resources available to set up the technological centre, feasability and financial appraisal of physcial outputs in relation to the establishment of a technological centre, synergies and potential partnerships identification and building
2. Relationship building: with foreign universities and research institutions with similar specialisations
3. Procurement/sub-contracting: for identification of premises and equipment to establish a phsycial prescence as the specialised technological centre
4. Hiring of staff and development of programmes
5. Establishment of a work programme for the duration of the project
6. Supply technical and technological support to companies acting in the maritime economy
7. Prepare and disseminate technical information to fishing boat-owners and processors
8. Conduct and foster R&D and guarantee an adequate dissemination of the results
9. M&E: monitoring & evaluation, including final evaluation

Estimated duration: 4 years

Notes:

This centre constitutes both the strategic consultant body for leaders of the various initiatives and the forum that gathers and congregates several key players of the fisheries cluster of Cabo Verde, thus allowing the occurrence of backward and forward linkages

The eco-certification of the pink lobster fishery under the MSC (Marine Stewardship Council) Standard is to be one of the first goals of the Technological Centre

II) Output: A revolving fund with the purpose to upgrade artisanal fishing vessels is established and operationalized

Keywords: Access to finance, upgrading, infrastructure, equipment, vessels, safety, sustainability

Thematic areas: Invesment, finance, upgrading, infrastructure

Relevant SDGs: 1,8,9

Main counterparts: Ministry of Infrastructure and Maritime Economy among others, business and fisheries regulatory agencies, as well as NOCMAR and the SCI

Other stakeholders: Business development service providers (BDS), (a) chosen finance/banking institution(s)

Beneficaries: Fishing boat owners, including youth and women, fisheries MSMEs, the fisheries sector

Activities:

1. Preparation: thorough mapping of the financial sector in Cabo Verde
2. Awareness raising workshops to be held with financial partners, to buy them into the idea that fisherpeople are in fact creditworthy if accompanied appropriately, which in turn will open a new market segment for the financial sector
3. Establishment of the revolving fund office and corresponding application procedure to recieve a loan from the fund
4. Visibility: an intensive outreach campaign with regard to options for financial support
5. Favorable terms (for both sides) are developed in order to ensure a sustainable business model, thereby also ensuring equal access to MSMEs with the penultimate objective of poverty reduction
6. Calls for proposals (applications to the revolving fund by fisherpeople)
7. Inception: meetings of project staff, financial experts and successful loan applicants
8. Introduction of successful loan applicants to their business counsellors
9. Disbursement of loans and regular (at intervals) business counselling sessions
10. Evaluation of pay-back/rate of return
11. Investigation of the potential to scale-up/keep the revolving fund running
12. Monitoring and evaluation

Estimated duration: 3-4 years

Standards and Trade Facilitation

III) Output: Landing sites are upgraded and equipped with ice factories and suitable cold storeage facilities

Keywords: Landing infrastructure, ice factories, cold storage facilities

Thematic areas: Industrial investment, quality and food standards, hygiene assurance, industrial upgrading

Relevant SDGs: 2, 8, 9

Main counterparts: Private-sector companies with assistance from UNIDO (as the intermediary), the SCI

Other stakeholders: Cabo Verde Maritime Cluster Operational Core (NOCMAR)

Beneficaries: Fisherpeople and fisheries associations and MSMEs specializing in catching and storing fish (a significant amount of beneficiaries to be youth and women)

Activities:

1. Inception/research phase: research of current landing sites across X locations/islands, and current state of these landing sites and whether cold storage facilities exist identified (or lack of)
2. Feasibility studies conducted around landing sites upgrading and creation of cold storage facilities (incl. risk assessments)
3. Feasibility studies conducted assessing the viability of building, and sustainability of, ice factories in specific locations
4. Synergies and relationship building: establish detailed information on how sites could be upgraded drawing on technical expertise
5. Competitive bidding processes for the contract of upgrading identified landing sites and developing new ones
6. Development of strategic partnerships with the contract-holding company who can carry out landing site upgrading/creation as well as relationship building with other counterparts/stakeholders, nationally and locally
7. Implementation: upgrading landing sites and creation of sites and ice factories in the most optimal locations
8. Procurement: buying equipment, where equipment is placed in most appropriate areas for fisheries promotion
9. Sustainability: synergies are created with research institutes and national organisations working to promote sustainability of fisheries activities
10. M&E: monitoring & evaluation, including final evaluation

Estimated duration: 2 years

IV) Output: National industrial fleet is upgraded and suitable for harvesting sustainable catch

Keywords: Vessel upgrading and purchasing, procurement, catch, fishing yields, sustainablity, economic competitiveness

Thematic areas: Innovation, quality, industrial upgrading, investment, economic competitiveness

Relevant SDGs: 8, 9, 12, 14

Main counterparts: UNIDO, NOCMAR and the SCI

Beneficaries: Fisherpeople and fisheries associations

Activities:

1. 1. Policy activities: implementation of a policy support framework to operationalize the upgrading of Cabo Verde's fishing infrastructure suitable. This should be addressed as an ecosystem-based fisheries management programme with the aim of enhancing the competitiveness and viability of Cabo Verde's fisheries, with consideration for the reduction of the impact of fishing activities on the marine environment. The following should be taken into account:

- the current fish stock biomass (estimation of the maximum sustainable yeld of the potential catches) and geographic distribution of the available commercial halieutic resources (not only within the Cabo Verde's EEZ, but also considering fishing possibilities in foreign waters of countries with which Cabo Verde has international fishing agreements)
- the number of fishing vessels to be added (new) or incremented (renewed) into the national fleet, with an indication of their fishing capacity. This balance between sustainable catch potential and fishing fleet upgrading (namely, fishing capacity) should also take into account the estimated number of vessels to be renovated, periodically (e.g. due to temporary closed areas and seasons. The tonnage

and fishing capacity of vessels to be withdrawn (due to obsolescence) from the fleet during the period within which the programme is to be implemented should also be considered

2. Purchase of, or construction of, new fishing vessels and the modernization or conversion of fishing vessels already in use
3. Physical targets set up for the desired future capacity of the fleet in terms of:

- Structural characteristics - size and/or capacity of vessel units (vessel length, tonnage or HP/Kw);
- Technical measures to be adopted (depending on the target species and/or the environmental sensitivity of the fishing grounds): minimum landing sizes and minimum conservation sizes, specifications for design and use of gears, minimum mesh sizes for nets, requirement of selective gears to reduce unwanted catches, limitations of by-catches (catches of unwanted or non-target species), measures to minimize the impact of fishing on the marine ecosystem and environment
- Type and capacity of on-board equipment (guidance instruments and positioning systems, sonars and other fish-finding equipment, storage facilities for catches conservation, working and safety conditions for fishers and vessels)

4. Development of professional training, new professional skills and learning programmes aimed at the dissemination of knowledge, innovative practices, and the acquisition of new professional skills, in particular linked to the use of new technologies, sustainable management of marine ecosystems, hygiene, health and safety activities in the maritime sector, innovation and entrepreneurship
5. A start-up support programme for young fisherpeople for the first acquisition of a national fishing vessel
6. Investigation of plans to scale-up
7. Monitoring and evaluation, including final evaluation

Estimated duration: 3-4 years

V) Output: A Quality Management System (QMS) specific to fisheries and fisheries value chains in Cabo Verde is established

Keywords: Food safety certificates, ISO certification, discontinuation of non-official landing sites, hybrid fish-product auctions

Thematic areas: Food safety, quality and food standards, product differentiation, quality management

Relevant SDGs: 1, 3, 8, 9, 12, 14

Main counterparts: UNIDO projects such as the WAQSP, private-sector companies with assistance from UNIDO (as the intermediary), the SCI

Other stakeholders: DGRN, ACOPESCA

Beneficaries: Fisherpeople and fisheres assosications and MSMEs specializing in catching and storing fish (a significant amount of beneficaries to be youth and women)

Activities:

1. Research phase: international benchmarking (drawing on country examples, such as in Portugal, Spain, France) to examine possible models of fish-product auctions, as well as mapping Cabo Verde's fish food chain circuit with identification of critical points and operators involved
2. Quality Management System: development of a platform to guarantee food safety, compliance with quality standards, and create value for consumers in Cabo Verde, with specific reference to fisheries produce. The Quality Management System should be audited and verified by independent certification bodies to ensure conformity to internal standards, ISO norms, laws and regulatory requirements
3. Preperation and implementation of a National Registration of Fish Processing Establishments
4. Development of a Quality Management Plan (QMP) and a 'Fish and Seafood processers step-by-step guide'
5. Establish and conduct awareness-raising activities of the QMS standard
6. Define the facility compliance requirement (construction and operations) and the facilities inspection manual
7. Creation of a facility for self-evaluation reporting to be used by economic operators
8. Implementation of fish inspection programme compliance management process

9. Marketing and branding: estbalishment and promotion of a 'quality brand' in line with the standards activities for produce of fisheries value chains (may be conducted in conjunction with suggested cluster activities within the cluster output)
10. Sustainability: synergies created with research institutes and establishment of ongoing use of the Quality Management System
11. M&E: monitoring and evaluation, including financial evaluation

Estimated duration: 1.5 years

VI) Output: Practical policy advice and capacity building assistance is provided to the Government of Cabo Verde and relevant parastatals [can be conducted in conjunction with statistics output]

Keywords: Revision of statistical concepts, provision of technical advice to support formalization of enterprises, streamlining policy, inventory, licensing

Thematic areas: Invesment in institutions, capacity building, training

Relevant SDGs: 8, 9, 14, 16, 17

Main counterparts: The Government of Cabo Verde, relevant parastatals, UNIDO, the SCI

Other stakeholders: MIEM, DGRN, DGIC, INDP, INE and the Regional Fisheries Management Organizations (RFMOs)

Beneficaries: The Government of Cabo Verde, NOCMAR, the fisheries sector and all actors involved in fisheries activities

Activities:

1. Research phase: research into current governmental capacity and reach in terms of monitoring and managing maritime economies and the national fisheries sector. This can involve a number of (public and private) stakeholder meetings
2. Invitation extended to specialist experts and policymakers to join working groups and prepare and conduct trainings for capacity building
3. The working group and trained speciaists will work in the following areas: recommendations on catch volumes with limit reference points and target reference points, the allocation of fishing rights, in measures to avoid bycatch, and other aspects of fisheries management
4. Responsibilities of various aspects of fisheries management are to be clearly defined and hierarchically structured
5. Government observers to be deployed and operating costs are covered by the fisheries enterprises themselves, in turn, generating funds for the research community
6. Monitoring and evaluation: throughout the project, and in the form of a final evaluation

Estimated duration: 2 years (initial phase)

Business Environment, Clusters and Innovation

VII) Output: Fisheries cluster is established and cluster activities commence (pilot)

Keywords: Business, private sector, proximity, cluster development, MSMEs

Thematic areas: Clusters, linkages, business services, private sector development

R**elevant SDGs:** 9, 17

Main counterparts: Private-sector companies with assistance from UNIDO (as the cluster development specialist and coordinating agency), the SCI

O**ther stakeholders:** NOCMAR

Beneficaries: Fisheries MSMEs and fisherpeople themselves (training activities should draw on persons from vulnerable groups)

Activities:

1. Research including benchmarking analysis to select among the international maritime clusters, successful case studies, that are alike to the Cabo Verdean reality (e.g. Portugal, Spain, Norway)
2. Creation of a formal cluster by means of selecting MSMEs to participate in X locations, training local (or Portuguese-speaking) cluster agents (CDAs) by contracting 'master trainers' or an external cluster consultancy
3. Inception meetings for cluster formulation and initial awareness raising as well as formulation of a work-plan for cluster(s)

4. Synergies with public institutions in the implementation of cluster support initiatives
5. Working activities for the cluster (conducted on the project working budget), to promote products
6. Cluster-member enterprises assisted in the formulation, implementation and monitoring of joint action plans as well as creation of end-market access for products
7. Scaling up and replication plans for potential international synergies, or expansion, nationally
8. Monitoring and evaluation: throughout the project, and in the form of a final evaluation

Estimated duration: 2 years

VIII) Output: Human capital pool for the fisheries cluster is trained and skills matched to the needs of the sector

Keywords: Vocational education and training (VET), entrepreneurs

Thematic areas: Human resources, entrepreneurship, quality management, marketing, business strategy and planning, skills upgrading, investment, capacity building

Relevant SDGs: 4, 8, 9

Main counterparts: Joint initiatives between UNIDO and UNI-CV

Other stakeholders: the SCI, NOCMAR, fisheries MSMEs

Beneficaries: Fisherpeople, youth, females, and creation of linkages/exchange with young researchers - in support of formalization of enterprises, staff of fisheries organizations, entrepreneurs, university students

Activities:

1. Research: Nationwide diagnosis involving surveying thematic areas where expertise is most needed related to the fisheries sector and investigation of fisheries value chain
2. Preparation, in conjunction with UNI-V, of a research programme based on the initial diagnosis
3. Procurement/sub-contracting: initial expertise for the programme and overall running (with the university or experts)
4. First intake of specialised researchers (pilot)
5. After a time, investigation of the quality and and type of research being produced
6. Feasibility studies for scaling up: investigation of possible expansion of initial phase (further phases or complimentary programmes)
7. M&E: monitoring & evaluation, including final evaluation

Estimated duration: 2 years (pilot)

Renewable Energy and Environment

IX) Output: Renewable energies in the fisheries sector in Cabo Verde are explored and their use promoted

Keywords: Green energy, renewable activities, sustainability, environment, climate change concerns

Thematic area(s): Renewable energy, investment, sustainability, innovation

Relevant SDGs: 7, 9, 12, 15

Main counterparts: MSMEs in the fisheries sector in Cabo Verde, with assistance from UNIDO. Possibility to work in conjunction with the University of Cabo Verde

Other stakeholders: the SCI, NOCMAR, DGRN, DGIC, INDP, Fisheries organizations

Beneficaries: Fisheries MSMEs themselves, business owners, employers, and the wider community

Activities:

1. Demonstrate the technical feasibility and commercial viability of renewable energy projects in X locations in Cabo Verde
2. Set-up a renewable energy fund to procure equipment and provide resources for training activities related to renewable energy in the fisheries sector in Cabo Verde
3. In conjunction with the government of Cabo Verde, and other relevant international organisations, strengthen and promote the legal and regulatory framework conductive to the development of small to medium scale renewable energy projects in the fisheries sector in Cabo Verde
4. Strengthen national institutional capacity and raise awareness of market players, enablers and general public actors in relation to renewable energies related to fisheries activities.
5. Scaling up and replication plans for potential international synergies, or, expansion nationally

6. Monitoring and evaluation: throughout the project, and in the form of a final evaluation

Estimated duration: 2 years

X) Output: Training scheme for young researchers in Cabo Verde is established and aquaculture initiatives are identified for diversifying and sustaining fisheries value chains

K**eywords**: Product development, product quality improvement, new/innovative fishing technologies , exploration of new possibilities for local production diversification (transformation and product differentiation), ecology

Thematic areas: Innovation, quality, upgrading, marketing, branding, investment, ecology, sustainability, environment

Relevant SDGs: 2, 8, 9, 14, 15

Main counterparts: The SCI, research institutions (universities), businesses within the fisheries sector with assistance from UNIDO (as the intermediary)

Other stakeholders: NOCMAR, UNI-CV

Beneficaries: CEOs and businesses themselves (in fisheries, aquaculture, fish processing and trade), entrepreneurs, and researchers

Activities:

1. Research: international benchmarking analysis of successful cases that can be imported and implemented in Cabo Verde (e.g. Norway, Denmark, Canarias/Spain)
2. Establishment of research agreements with foreign universities specialized in maritime research
3. Implementation of a traineeship program for young researchers specialising in biodiversity, ecology, agricultural value chains
4. Creation of specialized interface structures for communication of research and ideas to university and private firms by young researchers Specific programmes of education and training for firms' employees who wish to become specialized in this field (in conjunction with selected universities)
5. Feasibility studies conducted by researchers, to discover aquaculture production possibilities (the focus oriented towards endemic and/or local wild finfish and other fish groups species with commercial potential both for internal and external markets – e.g. blackbelly rosefish, sand steenbras, grouper, lobsters like the pink lobster, striped soldier shrimp – or others that are interesting for their importance as raw materials as live bait for tuna fishing or for the canning industry – e.g. bigeye scad, mackerel scad, some tuna species (captured using tuna traps)
6. Research actions involving research trips (e.g. Portugal, Canarias – Spain, Norway)
7. Feasibility studies including cost-benefit analysis of future aqualculture possibilities
8. M&E: monitoring & evaluation, including final evaluation

Estimated duration: 2-3 years

Entrepreneurship, Job Creation and Human Security

XI) Output: Technical skills, of those directly involved in the national fisheries value chains, are upgraded

Keywords: Technical skills, capacity building, training

T**hematic areas:** Capacity building, investment, skills upgrading, human resources

R**elevant SDGs:** 2, 8, 9, 10

Main counterparts: UNIDO, UNI-CV and the SCI

Other stakeholders: The future School of the Sea (UNI-CV), IEFP, NOCMAR

Beneficaries: Sailors, drivers of vessels, fishing support personnel, fisherpeople

Activities:

1. Research/inception phase: Investigation and identifcation of those directly involved in the fisheries value chains in X locations in Cabo Verde as well as identification of national resources to partner with (institutions, companies, professional organisations)
2. Preparation of a training and capacity building program based on research conclusions
3. Procurement/sub-contracting process: subcontracting (e.g. to foreign universities and/or specialized firms) for vocational trainining in areas where there is an evidence of a skills shortage

4. Implementation: provision of training by trained 'master trainers' in order to meet competencies of job descriptions (provided by partner sub-contracted)
5. Feasibility studies for scaling up: Investigation of possible expansion of initial phase (further phases or complimentary programmes)
6. M&E: monitoring & evaluation, including final evaluation

Estimated duration: 1 year (initial phase)

Notes:

An initiative that would need multiple phases and continued funding for sustainability

Statistics

XII) Output: Certified system for fishing statistics production (necessary due to the existence of overfishing/sustainability assurance of resource, in order to move toward eco-certification steps)

Keywords: Monitoring system, statistical database, best practices, diversification

Thematic areas: Stastics, industrial investment, monitoring, quality assurance and management, sustainability, investment

Relevant SDGs: 2, 8, 9, 12, 14, 15

Main counterparts: UNIDO (with specialist inputs from UNIDO statistics), UNI-CV, the SCI

Other stakeholders: INDP, INE

Beneficaries: All actors, including governmental actors, involved in the fisheries sector in Cabo Verde

Activities:

1. Define terminology and framework for indicators of performance: a guide is needed to firstly, define the terms used in relation to sustainability indicators and, secondly, to provide a consistent framework for their use
2. Capture experience nationally and internationally including experiences of what has been tried, and with what results, culminating in a critical review. The review should separately examine the experience with respect to (i) the target species, (ii) the direct ecosystem support of the target species (e.g. habitat and food requirements), (iii) the broader ecosystem (e.g. both dependent and essentially independent species), (iv) economic performance, and (v) social performance. It should also categorise the types of fishery situation being managed, and the information available on the fishery
3. Review and consolidation of experiences of use of sustainability indicators (including broader ecosystem issues) in other country contexts
4. Development of guidelines for using sustainability indicators
5. Establishment of a working group to develop national guidelines for using sustainability indicators
6. Develop and test options for sustainability indicators
7. Consolidation of existing experience to develop a national approach
8. Authoring the database and mechanism for frequent reporting
9. Testing of the database and monitoring
10. Inputting of data and dissemination of how to use the system
11. M&E: monitoring & evaluation, including final evaluation

Estimated duration: 2 years

Agriculture and Food Processing

XIII) Output: Processing procedures in the fisheries sector are upgraded

Keywords: Food processing, industry

Thematic areas: Agricultural upgrading, food processing, industry, innovation, investment

Relevant SDGs: 2, 8, 9

Main counterparts: The SCI, private-sector companies with assistance from UNIDO (as the intermediary)

Other stakeholders: DGRN, INDP, and fisheries organizations

Beneficaries: Fisherpeople and fisheries associations and MSMEs specializing in catching and storing fish (a significant amount of beneficiaries to be youth and women)

Activities:

1. Elaboration of a nationwide diagnosis for the surveying of current needs per fishing community and/or per island
2. Preparation of the acquisition procedures for equipment, codes of good conduct/practice, and the application of the Total Quality Management (TQM) to each group of actors in the fisheries value chain
3. Procurement of necessary equipment and expertise to upgrading the processing segments of the value chain which were identified as needing assistance in the first phase of the project
4. Piloting of the upgraded site/processing situations
5. Training of selected personnel, in the use of equipment and production procedures
6. Plans to scale-up are developed
7. Monitoring and evaluation throught the pilot project (including data of outputs/percentage increases as a result of upgraded processing) and final evaluation

Estimated duration: 2 years

VI. ANNEXES

ANNEX I

Questionnaire Type A

Institutional Stakeholders

SWOT Analysis

Contribution towards the strengtheness of the Cape Verde Fisheries cluster

Negative (-) ← 0 → Positive (+)

	ST Negative(1+2+3)	(1) Strong (- - -)	(2) Moderate (- -)	(3) Weak (-)	(4) Neutral (nula)	(5) Weak (+)	(6) Moderate (+ +)	(7) Strong (+ + +)	ST Positive (5+6+7)	ST Positive Plus (6+7)
EXTERNAL DIMMENSION										
Geostrategic positioning and international associations WTO African Union and African Economic Community Economic Community of West African States (ECOWAS)	14,29%	14,29%	0,00%	0,00%	14,29%	14,29%	0,00%	57,14%	71,43%	57,14%
Access to the EEZ of Cape Verde by foreign fishing vessels (fishing agreements- see Table 2)	28,57%	14,29%	0,00%	14,29%	14,29%	0,00%	28,57%	28,57%	57,14%	57,14%
Relationships with other international maritime clusters	14,29%	0,00%	0,00%	14,29%	14,29%	28,57%	42,86%	0,00%	71,43%	42,86%
Foreign competition	14,29%	0,00%	14,29%	0,00%	14,29%	14,29%	42,86%	14,29%	71,43%	57,14%
Conditions for accessing foreign markets	28,57%	28,57%	0,00%	0,00%	0,00%	0,00%	28,57%	42,86%	71,43%	71,43%
INTERNAL DIMMENSION										
SPS and other quality policy measures at use (see table 2 below)	14,29%	0,00%	14,29%	0,00%	0,00%	14,29%	28,57%	42,86%	85,71%	71,43%
Network of laboratories and other infrastructures to support the quality policy	28,57%	14,29%	14,29%	0,00%	0,00%	0,00%	42,86%	28,57%	71,43%	71,43%
Capital (financial, social and intellectual)	28,57%	0,00%	28,57%	0,00%	0,00%	28,57%	0,00%	42,86%	71,43%	42,86%
Public policies driven towards the promotion of entrepreneurship	28,57%	28,57%	0,00%	0,00%	14,29%	14,29%	14,29%	28,57%	57,14%	42,86%
Linkages between University and private enterprise tissue	28,57%	14,29%	14,29%	0,00%	14,29%	28,57%	14,29%	14,29%	57,14%	28,57%
Human resources capacitation	14,29%	0,00%	14,29%	0,00%	0,00%	14,29%	42,86%	28,57%	85,71%	71,43%
National innovation system	14,29%	14,29%	0,00%	0,00%	14,29%	28,57%	42,86%	0,00%	71,43%	42,86%
Quality and capacity of local actors	14,29%	0,00%	14,29%	0,00%	0,00%	28,57%	28,57%	28,57%	85,71%	57,14%
Export capacity by local firms	28,57%	0,00%	0,00%	28,57%	0,00%	14,29%	14,29%	42,86%	71,43%	57,14%
Geographical agglomeration	14,29%	14,29%	0,00%	0,00%	14,29%	14,29%	42,86%	14,29%	71,43%	57,14%
Linkages and relationships between local actors	28,57%	0,00%	0,00%	28,57%	0,00%	42,86%	14,29%	14,29%	71,43%	28,57%
Innovation carried out by local firms and R&D institutions	14,29%	0,00%	14,29%	0,00%	14,29%	42,86%	14,29%	14,29%	71,43%	28,57%
Available know-how in national R&D centres	28,57%	0,00%	14,29%	14,29%	0,00%	14,29%	28,57%	28,57%	71,43%	57,14%
Availability and access to technology (Technological capacity)	28,57%	14,29%	0,00%	14,29%	0,00%	14,29%	28,57%	28,57%	71,43%	57,14%
Availability and access to Knowledge Intensive Service Activities (KISA)	14,29%	0,00%	14,29%	0,00%	14,29%	28,57%	14,29%	28,57%	71,43%	42,86%
National incentive systems	28,57%	0,00%	0,00%	28,57%	0,00%	14,29%	14,29%	42,86%	71,43%	57,14%
Availabitlity and access to financial capital (e.g. bank and insurance services)	28,57%	0,00%	0,00%	28,57%	0,00%	28,57%	0,00%	42,86%	71,43%	42,86%
Cooperation and communication networks	28,57%	0,00%	14,29%	14,29%	0,00%	0,00%	57,14%	14,29%	71,43%	71,43%
Organization and leadership	28,57%	14,29%	0,00%	14,29%	0,00%	28,57%	14,29%	28,57%	71,43%	42,86%
Infraestructures and Equipments	14,29%	14,29%	0,00%	0,00%	0,00%	14,29%	42,86%	28,57%	85,71%	71,43%
Natural conditions	14,29%	14,29%	0,00%	0,00%	0,00%	0,00%	71,43%	14,29%	85,71%	85,71%

Questionnaire Type A

Institutional Stakeholders

Negative — Contribution towards the strengthness of the Cape Verde — Positive

(-) ← 0 → (+)

Strategy	ST Negative(1+2+3)	(1) Strong (- - -)	(2) Moderate (- -)	(3) Weak (-)	(4) Neutral (nula)	(5) Weak (+)	(6) Moderate (+ +)	(7) Strong (+ + +)	ST Positive (5+6+7)	ST Positive Plus (6+7)
Technological Learning **(Training & Capacitation)**										
Promoting the adherence of young people to work in this sector through joint initiatives envolving the UNI-CV and other educational institutions	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	80,00%	20,00%	100,00%	100,00%
Increase the offer of professional training courses (e.g. Production technology, Quality production systems, Work safety and hygien, Marketing, Sailors/Masters/Drivers); Promote safety and hygien procedures and equipments aboard the fishing vessels	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	80,00%	100,00%	100,00%
Promote an adequate gender policy	0,00%	0,00%	0,00%	0,00%	20,00%	0,00%	80,00%	0,00%	80,00%	80,00%
Processes optimization / Synergies										
Promote measures destined to garantee a more equal distribution of revenues within the value chain distribution, namely with the creation of Producers Organizations with intervention also in the marketing of production	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	80,00%	20,00%	100,00%	100,00%
Increase the scale of local production through a more effective use of the existent productive capacity and the reshuffle of the local fishing fleets	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	80,00%	100,00%	100,00%
Implementation of quality assurance systems at company level	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	80,00%	100,00%	100,00%
Increase the consuption of local fish products by the HORECA channel and therefore contributing to reduce the high depency of the latter from imports	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	40,00%	60,00%	100,00%	100,00%
Install a network of small industrial units that can concentrate production at the fishing communities of the various islands and forward it to cold and freezing centers / processing units or for internal distributors (fresh/fillets)	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	80,00%	100,00%	100,00%
Exploiting new consumption trends / Search for new markets										
Prospect new foreign markets for exports	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	80,00%	80,00%	80,00%
Inventory of local productions more suitable to export	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	40,00%	40,00%	80,00%	80,00%
Better use of the state economic diplomacy to access new foreign markets	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	80,00%	80,00%	80,00%
Implement mitigating measures of the main constraints experienced by companies when they want to start exporting, namely: . Barriers to entry: . Insufficient support at the national level for internationalization . Ignorance of the law in force in other countries . Lack of production scale . High quality requirements in target markets . Too high internationalization costs	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	80,00%	80,00%	80,00%
Implement a national quality control system with protocols with accredited laboratories, and production traceability procedures (from the consumer back to the producer)	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	60,00%	80,00%	80,00%
Start the process leading to the quality certification of some regional halieutic productions of excellence	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	0,00%	60,00%	80,00%	60,00%

Questionnaire Type A

Institutional Stakeholders

Negative — Contribution towards the strengtheness of the Cape Verde — Positive

(-) ← 0 → (+)

Strategy	ST Negative(1+2+3)	(1) Strong (- - -)	(2) Moderate (- -)	(3) Weak (-)	(4) Neutral (nula)	(5) Weak (+)	(6) Moderate (+ +)	(7) Strong (+ + +)	ST Positive (5+6+7)	ST Positive Plus (6+7)
Exploiting new consumption trends / Search for new markets										
Prospect new foreign markets for exports	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	80,00%	80,00%	80,00%
Inventory of local productions more suitable to export	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	40,00%	40,00%	80,00%	80,00%
Better use of the state economic diplomacy to access new foreign markets	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	80,00%	80,00%	80,00%
Implement mitigating measures of the main constraints experienced by companies when they want to start exporting, namely: . Barriers to entry: . Insufficient support at the national level for internationalization . Ignorance of the law in force in other countries . Lack of production scale . High quality requirements in target markets . Too high internationalization costs	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	80,00%	80,00%	80,00%
Implement a national quality control system with protocols with accredited laboratories, and production traceability procedures (from the consumer back to the producer)	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	60,00%	80,00%	80,00%
Start the process leading to the quality certification of some regional halieutic productions of excellence	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	0,00%	60,00%	80,00%	60,00%
Regional Innovation Systems and relevance of Knowledge Intensive Business Services (KIBS)										
Creation of the Cape Verde Sea Technological Centre, with the following duties: . Technical and technological support to companies acting in the maritime economy; . Promote technical and technological training of human resources; . Encourage improvements in the quality of products and industrial processes; . Prepare and disseminate technical information to fishing boat-owners and processors; . Conduct and foster R&D and garantee an adequate dissemination of the results.	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	80,00%	100,00%	100,00%
Invest in qualified human resources, projects and infrastructures of science and technology associated with the sea, supporting the establishment of consortia between R & D centers and enterprises so as to facilitate the transfer of knowledge and technology for businesses and promote entrepreneurship	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	80,00%	100,00%	100,00%
Promote the employment of researchers as well as the use and incorporation of locally developed technology; development of partnerships between UNI-CV and private universities and companies (e.g. pilot projects with integration of junior researchers in companies) to ensure the appropriateness of the research carried to the interests of Cape Verde firms;	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	60,00%	40,00%	100,00%	100,00%
Importance of knowledge flows and the role of knowledge spillovers										
Streamline the approach of companies to research centers, by conducting the survey of the results of existing research projects that may be usefulness for businesses; identifying and creating an access channel, within the research centers, to the intermediation with private companies	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	20,00%	60,00%	100,00%	80,00%
Boost bilateral technology transfer with other economic sectors and countries (other maritime clusters) through the establishment and participation in transnational networks	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	40,00%	60,00%	100,00%	100,00%

Questionnaire Type A

Institutional Stakeholders

Negative — Contribution towards the strengtheness of the Cape Verde — Positive

(-) ← 0 → (+)

Strategy	ST Negative(1+2+3)	(1) Strong (- - -)	(2) Moderate (- -)	(3) Weak (-)	(4) Neutral (nula)	(5) Weak (+)	(6) Moderate (+ +)	(7) Strong (+ + +)	ST Positive (5+6+7)	ST Positive Plus (6+7)
Development of New Processes and New Products										
Implement a system of indicators to monitor the innovation processes developed at national level, to promote an ex-post evaluation of their impact at company level in areas such as: . Development of a new product or a major change in an existing product; . Introduction of a new production process; . Implementation of a new accounting system or human resource management system or major changes made on thereof; . Implementation of a new or significantly improved organizational method, of design or marketing;	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	80,00%	100,00%	100,00%
Incentive systems / Entrepreneurship										
Induce a new approach to regional policy instruments, seeking to support the emergence of new taylor fit incentive schemes aiming specifically at: - increase the pull effect exerted by new companies / businesses that fill the gaps still existent in the maritime cluster, giving priority to public incentives driven towards the creation of spin-offs / start-ups / R&D projects capable of adding value and fill the flaws in the regional production system	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	40,00%	60,00%	100,00%	100,00%
Promote an international road-show - to attract capital and "talent" based on the appreciation of the strengths and opportunities of Cape Verde as an ideal place for the installation of innovative businesses in this area	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	20,00%	60,00%	100,00%	80,00%
Ensure adequate public dissemination of the existent financial support tools (e.g. incentive schemes, credit lines, colateral guarantees) among economic operators;	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	20,00%	60,00%	100,00%	80,00%
Economic regulation (including reduction of context costs)										
Promote an inventory of the main difficulties experienced by companies at licensing level and ensure its presentation to the competent coordinating authorities for the purpose of possible simplifying procedures	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	80,00%	20,00%	100,00%	100,00%
Financial and Logistical Support										
Building a competitive regional economic base, which must result from a cross / strong commitment between: . material investment (rehabilitation of infrastructure, creation of areas for corporate hospitality, business and logistics centers, incubators and industrial services), and . intangible investment (human resources training)	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	60,00%	40,00%	100,00%	100,00%
Promote the creation of a package of financial instruments specificly adjusted for sectorial companies, protocolated with banking institutions and encompassing: - Provision of seed capital / venture capital to support innovative businesses; - Operationalize an adequate mutual guarantee fund envolving public and private actors - Creation of short time credit lines to assist possible contingences of firms and also the financing of innovation and internationalization processes	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	40,00%	60,00%	100,00%	100,00%
Relationships and complementarity among actors (linkages)										
Gather information about potential domestic suppliers for the companies of the fisheries cluster	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	100,00%	0,00%	100,00%	100,00%
Promote workshops in order to increase the inter-knowledge and the interrelationship between the various actors of the Sea sub-clusters	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	80,00%	0,00%	100,00%	80,00%

Questionnaire Type A

Institutional Stakeholders

Negative — Contribution towards the strengtheness of the Cape Verde — Positive

(-) ← 0 → (+)

Strategy	ST Negative(1+2+3)	(1) Strong (- - -)	(2) Moderate (- -)	(3) Weak (-)	(4) Neutral (nula)	(5) Weak (+)	(6) Moderate (+ +)	(7) Strong (+ + +)	ST Positive (5+6+7)	ST Positive Plus (6+7)
Networking										
Promote technical visits at other international maritime clusters, identify and implement benchmarking activities based on the observation of success examples that can be replicated	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	60,00%	20,00%	100,00%	80,00%
Awareness and dissemination										
Creation of the Web site "Sea of Cape Verde" for disclosure initiatives and other relevant information, as well as undertake the promotion of regional products and services related to the maritime economy;	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	60,00%	20,00%	100,00%	80,00%
Improve the leverage potential inducing effect exerted by tourism, so as to increase the flow and dissemination of the fisheries cluster productions and thus contributing to upgrade the qualification of the national tourism sector	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	40,00%	60,00%	100,00%	100,00%
Environmental awareness										
Create an observatory for monitoring / tracking of fishery resources and activities, endowed with effective operational capacity, to increase the knowledge available about the resources and the socio-economic importance of these activities	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	20,00%	60,00%	100,00%	80,00%
Promote marine biodiversity protection, restoring degraded habitats and safeguarding the essential areas for the conservation and management of natural resources (e.g. install a network of artificial reefs off the coast of several islands);	0,00%	0,00%	0,00%	0,00%	0,00%	20,00%	20,00%	60,00%	100,00%	80,00%
Allocation of Infrastructure and Equipment										
Promote the development of adequate port conditions and infrastructures that contribute to ease of operation under competitive and safety conditions (not only physical, but also guaranteeing the compliance with hygiene and sanitary conditions)	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	40,00%	60,00%	100,00%	100,00%
Geographic situation										
Enhance the privileged geographic location of Cape Verde in the context of West Africa and at the crossraods of major maritime routes that cross the Atlantic	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	100,00%	100,00%	100,00%

ANNEX II

QUESTIONÁRIO

NOTA: O presente questionário visa apenas a recolha de dados com o objectivo de elaboração de um diagnóstico sectorial. As informações por este meio recolhidas são estritamente confidenciais e não será feita qualquer menção nominativa à origem dos dados.

1. CARACTERIZAÇÃO DA EMPRESA

Nome da empresa

1.1 Estatuto jurídico: (seleccione)

Outro. Qual?

1.2 Cargo do respondente: (seleccione)

Outro. Qual?

1.3 Localização da Sede Social: (seleccione)

Outro. Qual?

1.4 Localização da atividade corrente: (seleccione) (seleccione) (seleccione) (seleccione) (seleccione) (seleccione)

Outro. Qual?

1.5 Nacionalidade da maioria do capital social: (seleccione)

1.6 Dimensão da empresa

	Total		Mulheres		Geral
	Nº	%	Nº	%	
trabalhadores permanentes:					(seleccione)
trabalhadores temporários:					

Volume de negócios: (seleccione)

1.7 Actividade principal exercida: (seleccione)

Se indicou Outra. Qual?

R:

1.8 Antiguidade da empresa (actividade): (seleccione)

1.9 **Para além da atividade principal indicada, também se dedica:**

	☐
Pesca	**(seleccione)**
Aquicultura	**(seleccione)**
Congelação de pescado	**(seleccione)**
Refrigeração de pescado	**(seleccione)**
Outra conservação de pescado	**(seleccione)**
Processamento - Filetagem	**(seleccione)**
Processamento - Conservas	**(seleccione)**
Comerciantes - grossistas	**(seleccione)**
Comerciantes - retalhistas	**(seleccione)**
Outra conservação de pescado	**(seleccione)**
Comerciantes locais - e.g. peixeiras	**(seleccione)**
Exportador	**(seleccione)**
Outro	**(seleccione)**

Se indicou Outra. Qual?

R:

2. RECURSOS HUMANOS

2.1 **Nível de qualificação dos RH**

	Nº	**%**
Ensino primário		
Ensino secundário		
Bacharelato		
Licenciatura ou superior		
Sem qualificação		

2.2 **Identifique as principais necessidades ao nível da formação dos Recursos Humanos da empresa (por ordem decrescente de prioridade)**

(Seleccione)
(Seleccione)
(Seleccione)
(Seleccione)
(Seleccione)

Se indicou Outra. Qual?

R:

2.3.	**Tem enfrentado dificuldades ao nível do recrutamento de recursos humanos?**	**(seleccione)**

Em caso afirmativo, indique o grau de dificuldade em função do cargo a ocupar (Fraco; Moderado; Forte)

Trabalhador indiferenciado	**(seleccione)**
Administrativo	**(seleccione)**
Técnico especializado	**(seleccione)**
Técnico superior	**(seleccione)**

3. MERCADO

3.1 **Destino da produção e sua distribuição relativa**

		(%)
Mercado local	**(seleccione)**	
Mercado nacional	**(seleccione)**	
Exportação	**(seleccione)**	

(em caso <u>afirmativo,</u> identifique os principais mercados de exportação - países estrangeiros)

		(%)
Portugal	**(seleccione)**	
Outros países da EU	**(seleccione)**	
Outros países da CPLP	**(seleccione)**	
EUA	**(seleccione)**	
Japão	**(seleccione)**	
África Ocidental	**(seleccione)**	

Outro. Qual?

3.2	**Se já exporta indique a forma como comercializa nos mercados externos** — **(seleccione)**

Se indicou Outra. Qual?

R:

3.3	**Se não exporta, conta fazê-lo num futuro próximo ?** — **(seleccione)**

3.4	**Indentifique as principais dificuldades à exportação (por ordem decrescente de importância)**
	(seleccione)
	(seleccione)
	(seleccione)
	(seleccione)

Se indicou Outra. Qual?

R:

3.5 **Tem algum sistema de certificação de qualidade implementado**

(seleccione)
(seleccione)
(seleccione)

Se indicou Outro. Qual?

R:

3.6 **Canais de comercialização**

		(%)
Venda directa ao consumidor	**(seleccione)**	
Venda directa a hoteis	**(seleccione)**	
Venda directa a restaurantes	**(seleccione)**	
Mercados locais	**(seleccione)**	
Mercados nacionais	**(seleccione)**	
Processadores (congelação)	**(seleccione)**	
Processadores (conservas)	**(seleccione)**	
Processadores (filetagem e outros)	**(seleccione)**	
Cooperativas / Organizações de Produtores	**(seleccione)**	
Comerciantes locais (e.g. peixeiras)	**(seleccione)**	
Comerciantes Retalhistas	**(seleccione)**	
Comerciantes Grossistas	**(seleccione)**	
Exportação	**(seleccione)**	
Outro	**(seleccione)**	

Se indicou Outro. Qual?

R:

3.7 **Expedição da produção (meio de transporte)**

		(%)
Rodoviário	**(seleccione)**	
Marítimo	**(seleccione)**	
Aéreo	**(seleccione)**	

3.8 **Tem meios próprios para expedição (transporte) da produção até ao mercado de destino**

(seleccione)

No caso do transporte para o mercado não ser feito por meios próprios, identifique a origem dos expedidores

		(%)
Empresas locais	(seleccione)	
Empresas de outras regiões do País	(seleccione)	
Empresas estrangeiras	(seleccione)	

3.9 Concorrentes

Identifique os principais concorrentes (por ordem decrescente de importância)

	(seleccione)
	(seleccione)
	(seleccione)
Outro. Qual?	

No caso de ter mencionado os concorrentes estrangeiros, identifique os principais países (por ordem decrescente de importância):

	(seleccione)
	(seleccione)
	(seleccione)
	(seleccione)
Outro. Qual?	

3.10 Já esteve ou pensa vir a estar, num futuro próximo, envolvido em parcerias com outros agentes locais ou nacionais (seleccione)

Se Sim,quais?	(seleccione)
	(seleccione)
	(seleccione)
	(seleccione)

Se indicou Outra. Qual?

R:

Se Sim, com que objectivo?	(seleccione)
	(seleccione)
	(seleccione)
	(seleccione)

Se indicou Outra. Qual?

R:

3.11 Fornecedores

Origem dos fornecedores		(%)
Empresas locais	(seleccione)	
Empresas de outras regiões do País	(seleccione)	
Empresas estrangeiras	(seleccione)	

3.12 Outros atores do cluster marítimo de Cabo Verde

Tem relações de negócio com empresas do sector:

Bunkering	(seleccione)
Construção e reaparação naval	(seleccione)
Hub de transshipment de contentores	(seleccione)
Transshipment de produtos da pesca	(seleccione)
Registo e despacho de navios	(seleccione)
Turismo náutico	(seleccione)
Outro.	(seleccione)

Se indicou Outra. Qual?

R:

3.13 Atores de outros cluster marítimos internacionais

Tem relações de negócio com empresas:

Pesca / Aquicultura	(seleccione)
Transformação e comercialização de produtos da pesca	(seleccione)
Construção e reparação naval	(seleccione)
Portos e transportes marítimos	(seleccione)
Universidades e centros IED	(seleccione)
Outro.	(seleccione)

Se indicou Outra. Qual?

R:

3.14 Indique as principais dificuldades que sente ao nível da sua actividade (classifique : Fraco; Moderado; Forte)

Infraestruturas públicas (rodoviárias, telecomunicações, portos, etc)	**(Seleccione)**
Infraestrutura produtiva interna (equipamentos/instalações)	**(Seleccione)**
Limitação ao aumento de produção	**(Seleccione)**
Limitação à expansão da actividade	**(Seleccione)**
Realização de investimentos internos (renovação/qualidade/formação/inovação)	**(Seleccione)**
Custos de produção elevados	**(Seleccione)**
Ausência de estruturas de concentração / armazenagem da produção	**(Seleccione)**
Ausência de infraestruturas de frio / conservação	**(Seleccione)**
Ausência de infraestruturas de processamento / transformação	**(Seleccione)**
Ausência de entrepostos para exepdição para outros locais	**(Seleccione)**
Dificuldades no relacionamento com os clientes	**(Seleccione)**
Dificuldades no relacionamento com os fornecedores	**(Seleccione)**
Problemas no relacionamento com os distribuidores	**(Seleccione)**
Dificuldades no relacionamento com a Administração Pública	**(Seleccione)**
Dificuldades ao nível da comercialização	**(Seleccione)**
Concorrência interna excessiva	**(Seleccione)**
Fraca organização do sector a que pertence	**(Seleccione)**
Concorrência externa excessiva	**(Seleccione)**
Ausência de um sistema nacional eficaz de SPS ou outra na área da qualidade	**(Seleccione)**
Dificuldade de acesso aos mercados de exportação	**(Seleccione)**
Baixa qualificação dos Recursos Humanos	**(Seleccione)**
Acesso à inovação	**(Seleccione)**
Burocracia excessiva	**(Seleccione)**
Excesso de fiscalização	**(Seleccione)**
Licenciamentos	**(Seleccione)**
Exigências ambientais	**(Seleccione)**
Acesso ao financiamento	**(Seleccione)**
Seguros (inc. seguros de exportação)	**(Seleccione)**

Outra. Qual?

R:

No caso de ter assinalado dificuldades ao nível do licenciamento (efeito moderado ou forte), identifique por ordem decrescente de importância:

(seleccione)
(seleccione)
(seleccione)
(seleccione)
(seleccione)
(seleccione)

Se indicou Outra. Qual?

R:

3.15 **Considera que estar localizado em Cabo Verde constitui uma vantagem comparativa face aos concorrentes de outros países?** **(seleccione)**

3.16 **Considera que Cabo Verde tem potencial para constituir um pólo de competitividade e inovação (cluster) para as actividades ligadas ao mar?** **(seleccione)**

Em caso de resposta <u>afirmativa</u> identifique aqueles que são em sua opinião os pontos fortes da região (classifique: Fraco; Moderado; Forte):

Empresas	**(Seleccione)**
Conhecimento disponível (Centros de Investigação nacionais)	**(Seleccione)**
Administração pública (central e local)	**(Seleccione)**
Sistema de apoios	**(Seleccione)**
Sistema Financeiro (banca)	**(Seleccione)**
Redes de cooperação	**(Seleccione)**
Associações empresariais	**(Seleccione)**
Infraestruturas existentes	**(Seleccione)**
Condições naturais	**(Seleccione)**
Isntituições de cooperação internacional / ONGs	**(Seleccione)**
Outro? Qual?	

3.17	**Qual o seu grau de confiança / expetativa face ao clima económico bo médio/longo prazo?**	**(seleccione)**

3.18	**Identifique qual a estratégia de desenvolvimento que pretende seguir no curto-médio prazo (por ordem decrescente de importância)**	**(seleccione)**
		(seleccione)
		(seleccione)
		(seleccione)
		(seleccione)

Se indicou Outra. Qual?

R:

4. INOVAÇÃO

4.1 Identifique se a empresa no decurso do último ano introduziu:

Um novo produto ou uma alteração profunda num produto já existente	**(seleccione)**
Um novo processo produtivo	**(seleccione)**
Novo sistema de contabilidade ou de gestão de recursos humanos ou mudanças profundas ao nível dos mesmos	**(seleccione)**
Novo ou significativamente melhorado método organizacional ou de marketing	**(seleccione)**

4.2 Indique se realizou, nos últimos 3 anos, algum investimento nas seguintes áreas (por ordem decrescente de gastos)

	(seleccione)
	(seleccione)
	(seleccione)
	(seleccione)
	(seleccione)
	(seleccione)

Outro:

4.3	**Já participou em parcerias para a promoção da inovação?**	**(seleccione)**

Se <u>sim</u>, indique a origem geográfica dos parceiros	**(Seleccione)**

Se sim, indique o tipo de parceiros envolvidos

(seleccione)
(seleccione)
(seleccione)
(seleccione)

Outro:

QUESTIONÁRIO

5. CADEIA DE VALOR - PESCA

5.1 Porto de registo das embarcações

	Nº ou % de embarcações
(seleccione)	
(seleccione)	
(seleccione)	
(seleccione)	
(seleccione)	
(seleccione)	

Outro. Qual?

R:	

5.2 Tipo de embarcação

	Nº ou % de embarcações
(seleccione)	
(seleccione)	

5.3 Idade média das embarcações

(seleccione)

5.4 Tipo de Frota

	Nº ou % de embarcações
(seleccione)	

Tipo de artes usadas

(Seleccione)
(Seleccione)
(Seleccione)
(Seleccione)
(Seleccione)

Se indicou Outra. Qual?

R:

Outro Tipo de Frota

	Nº ou % de embarcações
(seleccione)	

Tipo de artes usadas

(Seleccione)
(Seleccione)
(Seleccione)
(Seleccione)
(Seleccione)

Se indicou Outra. Qual?

R:

5.5 Espécies capturadas

DESCARGAS ANUAIS

Quantidades médias anuais e Preço médio venda

		Mercado em fresco		Processadores		Exportação	
		Quant. (Kg, %)	P.venda (ECV)	Quant. (Kg, %)	P.venda (ECV)	Quant. (Kg, %)	P.venda (ECV)
albacora (Thunnus albacares, Yellowfin tuna)	(seleccione)						
atum gaiado (Katsuwonus pelamis, Skipjack tuna)	(seleccione)						
ilhéu/serra/judeu (Acanthocybium solandri, wahoo)	(seleccione)						
merma (Auxis thazard, Frigate tuna)	(seleccione)						
cachorra (Euthynnus alletteratus, Little tunny)	(seleccione)						
cavala (Decapterus macarellus, mackerel scad)	(seleccione)						
dobrada (Spicara melanurus, picarel)	(seleccione)						
chicharro (Selar crumenophthalmus, big-eye scad)	(seleccione)						
carnaval (Cephalopholis taeniops, Bluespotted seabass)	(seleccione)						
salmonete (Pseudupeneus prayensis, West African goatfish)	(seleccione)						
moreias (Muraenidae, moray eels)	(seleccione)						
Lagostas	(seleccione)						
Lulas, Chocos e Polvos	(seleccione)						
Outro	(seleccione)						

Se indicou Outro. Qual?

R:

5.6 Custos

CUSTOS MÉDIOS ANUAIS

		Custos (ECV)	%
Salários	(seleccione)		
Artes de pesca	(seleccione)		
Isco	(seleccione)		
Combustível	(seleccione)		
Oleo	(seleccione)		
Provisões	(seleccione)		
Outros fornecimentos	(seleccione)		
Manutenção de embarcações	(seleccione)		
Manutenção de outros equipamentos	(seleccione)		
Manutenção de instalações	(seleccione)		
Licenças	(seleccione)		
Preparação da produção para o mercado	(seleccione)		
Transporte da produção para o mercado	(seleccione)		
Comercialização	(seleccione)		
Outro	(seleccione)		

Se indicou Outro. Qual?

R:

QUESTIONÁRIO

6. CADEIA DE VALOR - TRANSFORMAÇÃO

6.1 Tipo de transformação

(Seleccione)
(Seleccione)

Outro. Qual?

6.1 Tipo de produto

(Seleccione)
(Seleccione)
(Seleccione)

Outro. Qual?

6.2 Matérias primas

COMPRAS ANUAIS

Quantidades médias anuais e Preço médio compra

		Produtores		Associações / Cooperativas		Importação	
		Quant. (Kg, %)	P.compra (ECV)	Quant. (Kg, %)	P.compra (ECV)	Quant. (Kg, %)	P.compra (ECV)
albacora (Thunnus albacares, Yellowfin tuna)	(seleccione)						
atum gaiado (Katsuwonus pelamis, Skipjack tuna)	(seleccione)						
ilhéu/serra/judeu (Acanthocybium solandri, wahoo)	(seleccione)						
merma (Auxis thazard, Frigate tuna)	(seleccione)						
cachorra (Euthynnus alletteratus, Little tunny)	(seleccione)						
cavala (Decapterus macarellus, mackerel scad)	(seleccione)						
dobrada (Spicara melanurus, picarel)	(seleccione)						
chicharro (Selar crumenophthalmus, big-eye scad)	(seleccione)						
carnaval (Cephalopholis taeniops, Bluespotted seabass)	(seleccione)						
salmonete (Pseudupeneus prayensis, West African goatfish)	(seleccione)						
moreias (Muraenidae, moray eels)	(seleccione)						
Lagostas	(seleccione)						
Lulas, Chocos e Polvos	(seleccione)						
Outro	(seleccione)						

Se indicou Outro. Qual?

R:

6.3 Custos

CUSTOS MÉDIOS ANUAIS

		Custos (ECV)	%
Salários	(seleccione)		
Energia	(seleccione)		
Outros fornecimentos	(seleccione)		
Manutenção de equipamentos	(seleccione)		
Manutenção de instalações	(seleccione)		
Licenças	(seleccione)		
Preparação da produção para o mercado	(seleccione)		
Transporte da produção para o mercado	(seleccione)		
Comercialização	(seleccione)		
Outro	(seleccione)		

Se indicou Outro. Qual?

R:

6.4 **Vendas**

VENDAS ANUAIS

Quantidades médias anuais e Preço médio venda

		Mercado local		Mercado nacional (grosso/retalho)		Exportação	
		Quant. (Kg, %)	P.venda (ECV)	Quant. (Kg, %)	P.venda (ECV)	Quant. (Kg, %)	P.venda (ECV)
inteiro	(seleccione)						
granel	(seleccione)						
esvicerado	(seleccione)						
escamado	(seleccione)						
filetes	(seleccione)						
conservas	(seleccione)						
outro	(seleccione)						
outro	(seleccione)						

Se indicou Outro. Qual?

R:

SCHEDULE OF WORK **FISH CLUSTER MISSION**

DAY		HOUR	ORGANIZATION	LOCAL	MEETING PERSON	POSITION	NOTES
25-Out	Su.	23:05	ARRIVAL PRAIA				
26-Out	2ª	14:00	ARRIVAL MINDELO				
		15:00 to 17:30	Workshop "EXPOMAR"	INDP	15:00 - 15:45 - "Cabo Verde - Uma base para a investigação no atlântico" - Dr. Carlos Monteiro 16:10 - 16:45 - "Perspetivas para o desenvolvimento da aquacultura em Cabo Verde" - Doutora Márcia Valadares Costa 16:45 - 17:15 - "Base de dados - espécies em Cabo Verde" - Dr. Carlos Monteiro		
27-Out	3ª	09:00	Chamber of Commerce of Barlavento (CCB)	CCB	Mr. Adriano Cruz	General Secretary	- Represents Private Sector in the North Islands
		10:00	Fish Products Authority (ACOPESCA)	ACOPESCA	Mrs. Maria Correia Mr. Carlos Barbosa	Members of the Board	
		11:00	National Institute of Fish Development (INDP)	INDP	Mrs. Osvaldina Silva	President	- with Mr. Albertino ??? (Research Director)
		14:30	CABNAVE	Cabnave	Mr. Patrício Silva Mr. Domingos Santos	Directors	
		18:00	Consultor Nacional	Dom Paco	Mr. Amiro Faria	Expert	
28-Out	4ª	09:00 to 10:30	Workshop "EXPOMAR"	Auditório "Onésimo Silveira"	09:00 - 09:45 - Apresentação Pública Plano Estratégico do Cluster do Mar - Dr. Poças Esteves SAER -Portugal		
		10:30	Fish Association of Cabo Verde (APESC)	NOCMAR	Mr. João Lima	President	
		11:30	Port and Maritime Agency (AMP)	AMP	Mr. Antonio Cruz Lopes	President	
		13:00	NOCMAR	Dokas	Mr. Franklim Spencer	Coordinator	- Also Carlos Delgado (NOCMAR)
		15:00 to 20:00	Workshop "EXPOMAR"	ENAPOR	15:00 - 16:45 Encontro Nacional dos Armadores de Pesca de Cabo Verde -APESC 16:50 - 17:05 Coffee Break		
29-Out	5ª	08:30 to 09:30	Workshop "EXPOMAR" Seminário I - Políticas para o Setor da Economia Maritima	CCB	08:30 - Receção dos Convidados 09:00 - Nota de Boas Vindas - Coordenador do NOCMAR 09:15 - Abertura Oficial S. E. a Ministra das Infraestruturas e Economia Marítima		
		09:45	Local Business Man - Aquicultura	NOCMAR	Carlos Santos	Entrepreneur	
		10:45	West Africa Quality Programme	WAQP	Joana Flor	National Coordinator	
		11:30 to 12:30	Workshop "EXPOMAR" Seminário I - Políticas para o Setor da Economia Maritima	CCB	11:30 - Crescimento Azul - Estratégia seguida por Cabo Verde - Dr. Alberto Salazar da Silva - FAO 12:00 - Debate 12:30 - Encerramento Presidente da CCB-AE		
		15:00	EXPOMAR	ENAPOR	Entrada em Funcionamento Oficial do Entreposto de Frio do Mindelo - Enapor - S.E. Primeiro-Ministro		

SCHEDULE OF WORK **FISH CLUSTER MISSION**

DAY		HOUR	ORGANIZATION	LOCAL	MEETING PERSON	POSITION	NOTES
		16:30	EXPOMAR	Cova Inglesa	Inauguração do Novo Complexo de Pesca de Cova de Inglesa- S.E. Primeiro-Ministro		
		17:00	EXPOMAR	FIC	Inauguração Oficial da IV Edição da Expomar - S.E. Primeiro-Ministro		
		20:00	EXPOMAR (Fair)	FIC	20:00 - 22:00 - Horário Público		
30-Out	6ª	08:30	Frescomar	Frescomar	Manuel Monteiro	Director	
		10:00	Armadores Semi-Industriais	NOCMAR	Sr. Zeca Sr. Miguel Fortes	Donos	
		11:05 to 12:30	Workshop "EXPOMAR" Seminário II - A Sustentabilidade Financeira do Cluster do Mar	CCB	11:05 O Futuro da Industria do atum no mercado globalizado –Que alternativas para CV - Anfaco Cecopesca - Espanha 12:05 Debate 12:35 Encerramento Coordenador do NOCMAR		
		15:00	ENAPOR	Enapor	Mr. Carlitos Fortes	President	
		17:00	General Directorate of Marine Resources	Mindelo Hotel	Mr. Juvino Vieira	General Director	
		19:00	EXPOMAR (B2B Meetings)	FIC	17:00 - 20:00 - Visitas e Contactos profissionais		
31-Out	Sa.	19:00	Lux Cluster of Sea	FIC	Paul Marceul	Manager	
		12:00	UniCV - Technical Collegue of Engineeting and Marine Science (ISECMAR)	FIC	Mrs. Dora Pires Mr. Daniel Lopes	Deputy Dean	
		21:00	EXPOMAR	Hotel Porto Grande	Jantar de encerramento com presença de S.E. a Ministra do Turismo, Industria e Desenvolvimento Empresarial		
01-Nov	Su.	10:30	Free time - Visit Baia das Gatas				
		20:00	PRAIA DEPARTURE				
02-Nov	2ª	08:30	UNIDO	UN	- Preparation of the "Cluster Development" presentation		
		11:00	Agency for the Development of Enterprises and Innovation (ADEI)	Plateau	Mr. Frantz Tavares	President	
		14:30	General Directorate of Industry and Trade (DGIC)	MTIDE	Mr. Amilcar Monteiro	General Director	
		16:00	West Africa Fishing Program (PRAO-CV)	???	Mr. Anibal Medina	Coordinator	
03-Nov	3ª	09:00 to 11:00	Presentation Session "Cluster Development"	Hotel VIP	08:45 - Quests reception 09:00 - Opening ADEI e DGIC 09:20 - UNIDO Presentation "Cluster Development" 10:00 - Debate 11:00 - Coffee Break		
		14:00	Vocational Training and Employment Institute	IEFP	Mr. Vargas Melo	President	

SCHEDULE OF WORK

FISH CLUSTER MISSION

DAY		HOUR	ORGANIZATION	LOCAL	MEETING PERSON	POSITION	NOTES
		???	Ministry of Infrastruture and Marine Economy	Plateau	HE Mr. Sara Lopes	Minister	- Debriefing
04-Nov	4ª	???	European Union	Prainha	Mrs. Cassandra Pereira	Cooperation attaché	
		???	FAO	United Nations	Mr. Remi NonoWomdim	Representant	
		???	United Nations Resident Coordinator	United Nations	Mr. Ulrika Richardson	RC	- Courtesy visit
05-Nov	5ª	00:55	LISBON DEPARTURE				

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