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FINAL REPORT

IMPACT OF INTERNATIONAL FISH TRADE FLOWS IN AFRICA

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ABBREVIATIONS AND ACRONYMS

AFPEK	Association of Fish Processors and Exporters of Kenya
ARIMA	Auto-Regressive Integrated Moving Averages
ATLAFCO	Ministerial Conference on fisheries cooperation among African States bordering the Atlantic Ocean
AU-IBAR	African Union Inter-African Bureau for Animal Resources
AU-MS	African Union Member States
CAMFA	Conference of African Ministers of Fisheries and Aquaculture
CAS	Catch Assessment Survey
CEDEAO	Economic Community of West African States
CEMAC	Economic and Monetary Community of Central Africa
COMESA	Common Market for Eastern and Southern Africa
COOPI	Cooperazione Internazionale Relief Foundation
DWFN	Distant Water Fishing Nations
EAC	East African Community
ECOWAS	Economic Community of West African States
EFMIS	Enhanced Fish Market Information Service
FAO	Food and Agriculture Organization of the United Nations
FCWC	Fishery Committee of the West Central Gulf of Guinea
FGD	Focus Group Discussion
FishSTAT	FAO database of Fisheries and Aquaculture Statistics
ICCAT	International Commission for the Conservation of Atlantic Tunas
INFOPECHE	Intergovernmental organization of trade in fishery and aquaculture products in West Africa AU-MS
INFOSA	Intergovernmental organization of trade in fishery and aquaculture products in Southern Africa AU-MS
INFOSAMAK	Intergovernmental organization of trade in fishery and aquaculture products in North Africa AU-MS

IOTC	Indian Ocean Tuna Commission
IUU	Illegal unregulated and unreported
KII	Key Informant Interview
NEPAD	New Partnership for Africa's Development i
NPCA	NEPAD Planning and Coordination Agency
PF&RS	Policy Framework and Reform Strategy
PRA	Participatory rural appraisal
REC	Regional Economic Community
RFB	Regional Fisheries Body
RFMO	Regional Fisheries Management Organization
SACU	Southern African Customs Union
SADC	Southern African Development Community
SWIOFP	South West Indian Ocean Fisheries Project
UEMOA	Economic and Monetary Union for West Africa
WTO	World Trade Organization
Angola IPA	Institute for the Development of Artisanal Fisheries & Aquaculture (IPA-Angola)

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1. INTRODUCTION

1.1 Background

Globally, fish and fish products present some of the most important aquatic resources both in terms of quantity traded and per capita consumption. The trade in fish and fishery products plays a major role in the industry through creation of employment, food supply and income generation at the village, national, regional and global levels. It is also a huge contributor to economic growth and development in several African countries through foreign exchange. The global demand for fish and fishery products, and seafood on the wider scale is a key driver for the production and exploitation of these resources especially in developing countries including the majority of the African Union Member States (AU-MS). Consequently, this demand for seafood also has huge impacts on the national and regional programmes geared towards sustainable exploitation and rational utilization of the aquatic resources.

Over the last decades, there has been a significant increase in the share of fishery and aquaculture production from Africa entering international trade inform of varied foods and feed products. This is a clear indication of the sector's growing level of market-openness and integration into the international trade. Domestic and intra-regional trade in fish and fisheries products from both marine and inland waters is an important and well developed pillar of many national and regional economies of the African States, although the trade networks at both national and regional levels remain quite informal.

Consequently, efforts to improve the fish trade and marketing sector in many of the AU-MS is faced with numerous constraints including poor infrastructure and insufficient support especially on policy issues; market-related measures like eco-labelling and related certification processes, private standards for environmental and social purposes; multi-lateral trade negotiations on fishery subsidies in the World Trade Organization (WTO); increased traceability requirements including requirements for the European Union (EU) market to combat illegal unregulated and unreported (IUU) fishing; fish-health and aquatic bio-security issues; growing legal pressure on companies to demonstrate due diligence in food risks; an increasing sense of corporate social responsibility as well as increased demands by domestic consumers on both quality and quantity of the traded fish products.

Furthermore, the cost of certification and compliance is often very high and such schemes have led to undesirable impacts especially on poor and vulnerable groups including the small-scale fisheries and aquaculture enterprises. The situation is augmented by the existence of several Fisheries Access Agreements (FAAs) in many of the AU-MS, granting licenses to Distant Water Fishing Nations (DWFN) to exploit the fisheries resources in offshore waters where small-scale fishers might be technologically limited. However, the high quality fish and fish products from these DWFNs are exported to the fishing nations in most cases, leaving the AU-MS with limited choices and dependence on the fishery "discards" from the DWFN vessels, or imports of low-quality fish and fishery products processed from the by-catch of these same vessels to

supplement their food and protein requirements. The import of the cheaper "low quality" fish and fishery products interferes with the demand and supply dynamics in the AU-MS, and may thus deter any efforts to develop quality fish and fishery products through both the local capture fisheries as well as aquaculture enterprises. In view of these constraints, the fisheries policy objective of the AU Commission on "Responsible and Equitable Fish Trade and Marketing" aimed to harness significantly, the benefits of Africa's' fisheries and aquaculture endowments through accelerated trade and marketing, bearing in mind that the concepts of good management practice and responsible fish trade must run hand-in-hand if all economic and associated benefits are to accrue to the participating communities and states.

The biggest challenge to actualizing the above objectives has been the lack of a clear understanding of the trade-flows of fish and fishery products within and between the AU-MS as well as the dynamics of the trade in fish and fishery products within the continent. Efforts to develop a "healthy" fish and fishery trade within the national boundaries of the AU-MS and, regionally among the Regional Economic Communities (RECs) blocs has further been constrained by the import of low quality and cheap "trash-fish" or fishery "discards" from outside the AU-MS. These imports negatively impact the sustainability of local fisheries further putting the livelihoods of the small-scale fisher folks at risk.

In view of the above constraints and others that have similarly hindered sustainable development of the sector, the AU-IBAR and the NEPAD Planning and Coordination Agency (NPCA) implement the activities of the Fisheries Governance Project funded by the EU in line with the principles of the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa, as adopted by the African Heads of State and Government. The overall goal of the project was to strengthen institutional capacity to enhance governance of the fisheries and aquaculture sector for improved livelihoods, food security and economic growth. A key activity of the project was to enhance advocacy, lesson learning for knowledge sharing, and capacity for increased investments to foster reforms in the fisheries sector, focusing on strengthening the capacity for evidence based advocacy. This was done through assessment of the trade flows in fish and fish products in Africa with special focus on key contributions of the fisheries sector to economic growth, and wealth creation among others. The assessment also highlights the impediment to trade, documenting and packaging of documents on best-practices and lessons-learnt on fisheries reforms and management. Additionally, the assessment identified some of the underlying factors deterring external fish trade as addressed through appropriate policies and governance mechanisms including incorporation and enforcement of trade liberalization policies of the RECs' into the national regulations of AU-MS. Lastly, the consultancy identified policy entry points that would support high level advocacy fora, to ensure that lessons of efforts to reform fisheries governance at country and regional levels were collected, documented and disseminated to create awareness and generate political goodwill among the policy and decision makers of the AU-MS.

The disposition of catch after capture is of interest both for economic flow assessment as well as for food security planning. However, the economics of production, marketing, supply and demand are often beyond the mandate of the managers. In spite of this, a clear understanding of the post-harvest products flows would verify the overall production and declared catches (especially where data coverage is sparse), assess fishery benefits in terms of license costs and fishery returns, and aid the development of sustainable fishery markets for the coastal fisher-folks who are often the most impacted by flawed trade-flows. Furthermore, knowledge of the fish and fish product flows is also a prerequisite for the design of efficient port sampling programmes and statistics management. This is also particularly important for large fishing vessels and cases of IUUs, and can help in tracing unreported catches along the fishery value-chains especially at trans-shipment and export nodes. Therefore, in order to achieve sustainable fishery practices at the village level, fishery, national and regional levels, a clear understanding of the fishery trade flows was important as well as the analysis of trade flows for key fisheries. For example, statistics show that over 70% of the Indian Ocean tuna is caught off the waters of Eastern Africa but despite this huge potential, the fishery landings in the AU Eastern Africa coastal and island states remains low, and most of the resources are reported by Distant Water Fishing Nations (DWFNs). In response to the AU-IBAR call to conduct assessment of the impact of international fish trade flows in Africa, this survey traced the post-harvest flow of fish and fishery products within the AU-MS covering both intra- and inter-regional exports and imports by species, quantities and qualities to inform improved management and increase benefits to the local, national economy and regional economies. The assignment was carried out in close consultation with the AU-IBAR.

1.2 Rationale

The "Policy Framework and Reform Strategy (PF&RS) for Fisheries and Aquaculture in Africa, 2014" of the African Union Commission (AUC) aimed to create a conducive and enabling environment for the fish sector to generate equitable, social and economic development in Africa. In view of the numerous constraints faced by AU-MS in achieving "Responsible and Equitable Fish Trade and Marketing", and recognizing the fact that the concepts of good management practice and responsible fish trade must be complementary if economic and associated benefits are to accrue, the AUC policy aimed to “significantly harness the benefits of Africa’s’ fisheries and aquaculture endowments through accelerated trade and marketing”.

Therefore, in the PF&RS for Fisheries and Aquaculture in Africa, the AUC outlined various Strategies and Actions for fisheries reform to:- (i) Improve and align trade system between Member States in the same RECs, (ii) Improve quality and safety of products to better access regional and international markets; (iii) Develop mechanisms for improved intra-regional trade liberalization; (iv) Put in place efficient fish-trade information systems; (v) Develop mechanisms to increase quality fish consumption within Africa; (vi) Enhance the capacity of fisheries and aquaculture traders for Small

scale fisheries and aquaculture traders, Semi industrial- and Industrial traders; (vii) Improve the capacity of countries to implement traceability mechanisms and, (vi) Develop a common fisheries trade framework.

In this context, the role of AUC, through the African Union-Inter African Bureau for Animal Resources (AU-IBAR) and, NEPAD Planning and Coordination Agency (NPCA) was to monitor the implementation of the PF&RS and reporting to Conference of African Ministers of Fisheries and Aquaculture (CAMFA), as well as facilitate new initiatives to improve understanding of the importance and role of fisheries and aquaculture to Member States. The gains made in the implementation of PF&RS in developing responsible and equitable fish trade and marketing, could only be evaluated through a clearer understanding of the fish and fishery products trade flows within and out of the AU-MS. It was also important to clearly identify and define the over-arching issues of analyses of trade flows for key fisheries to enhance sustainable fishery practices at community, national and regional levels. However, despite the huge potential of the AU-MS fisheries, landings have remained low although under-reporting is also evident due to flourishing informal trade (Defaux V and Hjort, 2012; Hara, 2017a & b; Hara *et. al.*, 2017; Meke, 2017; Ongango, 2017a & b;). The presence of the DWFNs who rarely get the catches verified at the local ports has also complicated the data reporting mechanisms (ODI and porCausa, 2016). The overall situation has been augmented by importation of low quality "trash fish" making the remedying of trade "flaws" and development of sustainable fishery markets an uphill task (pers. observ.).

Statistics indicate that in 2017, the AU-MS fish and fish products imports were estimated at a staggering value of US$ 4,796,867,000 (3.7 % of global fish imports) with the imports basically aimed at meeting the protein requirements at national level. Ironically, these countries also export fish and fish products worth US$ 11,036,031,000, an estimated 8.5 % of global fish exports (AU-IBAR, 2016). There was a need to put into proper context the motivating forces for these discrepancies, with clear understanding of the full implications in terms of socio-economics and food security by decision-makers. This report establishes the value and volume of fish and fish products involved in AU-MS international fish trade and the position of the AU-MS, including the impacts of the trade in order to decipher the overall implications of the fish and fish products trade dynamics. Due to the difficult in tracing most of the traded products by species, the fish and fish products imports were categorized in groups as finfish, shellfish and other products except where data on species and families was available. The Survey traces the complex post-harvest flow of fish and fishery products between AU-MS and overseas countries with focus on imports and exports of fish and fishery products into and out of the AU-MS, and by extension into the continent. Within the framework of the PFRS policy area on enhancing "Responsible and Equitable Fish Trade and Marketing" by significantly harnessing the benefits of Africa's fisheries and aquaculture endowments through accelerated trade and marketing, with an overall goal documenting the impact of international trade on the AU-MS to inform stakeholders and for informed decision making.

1.3 Objectives of the Consultancy

The overall objective of the consultancy was to conduct an assessment of fish and fishery products trade flows, and, evaluate and develop a comprehensive document on the socioeconomic and food security impacts of the fish imports and/or exports into and out of Africa.

The specific objectives were to:

1. Evaluate the volume and appropriately determine the value of fish and fishery products importation into Africa and similarly for their exportation out of the continent;

2. Assess the impact of fish importation and exportation (both in term of quantity and values) on economy of AU-MS and the overall continent;

3. Determine the Impact of fish importation and exportation into and out of Africa on fish production and trade from Aquaculture, Inland and Marine fisheries of Africa as well as on the consumption pattern and food security;

4. Establish the consequence and influence of imported fish and fishery products on Inter- and Intra-regional trade in fish and fishery products in Africa;

5. Identify and categorize countries of origin/destination and establish the various fish importation and exportation routes (legitimate and illegitimate) and methods including unauthorized shipment or transfer, non-compliance with fish import and export licensing and WTO conditions;

6. Identify the underlying factors and fundamental motivating dynamics encouraging fish importation and exportation into and out of the continent;

7. Develop action plans to efficiently and effectively communicate the economic value and socioeconomic consequences of fish importation to the policy and decision makers that will generate impactful political will;

8. Produce a comprehensive technical report on the value and socioeconomic consequences of fish importation into Africa;

9. Produce an advocacy paper on the value and socioeconomic consequences of fish importation/ exportation into/out of Africa;

10. Identify the Main Actors of the fish supply chains associated with exports and imports in Africa;

11. Assess the amount/volume traded (fish / fishery product exports/imports) along the supply chain, by major species/category if possible and, financial flows and the impacts on the local production and economies.

12. Assessment of informal fish trade flows and associated impacts; with indication of volume and value.

2. SCOPE AND FIELD WORK LOGISTICS

The scope of the survey was limited to the AU-MS, focussing on the export and import of fish and fish products with an aim evaluate and comprehensively document the socio-economic and food security impacts of the imports/export into and out of Africa. The study identified the main routes, from the export markets (national markets) to the fish consumer centres (destination fish markets), initially between the AU-MS, and eventually into and outside Africa. This was conducted through identification of the main actors in the fish and fish products value chains at the key nodes and associated marketing structures; and quantification of the amount/volume traded along the supply chain, by fish groups (very little data was available on the exports by species, safe for a few groups categorised along families), as well as the associated financial flows from the local markets to the export markets and consumption centres.

The main groupings for the assessed fish and fishery product flows were; (i) Dried, smoked, salted, or brined fish, (ii) frozen fish (excluding fish fillets and similar fish meat), (iii) Live, fresh/chilled or smoked molluscs (in shell or not), (iv) Other fish fillets and fish meat, minced/not, fresh, chilled or frozen, and (v) Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine. However, most of the data fell short of identifying the imports/exports by species or species groups/families.

The consultancy conducted a country by country analysis, widening to the regional trade blocs and, and into inter-country trade, into/out of the regional trade blocs and finally, the overall exports and imports out of and/or into the African continent with outline of the origin and destination markets. In this regard, the five (5) Africa Union Member States regions (Figure 1) were used in the analysis.

At the country level, the analyses were conducted at institutional level, with targeted focus on the fisheries departments and associated departments/ministries, including the ministries of trade, departments of customs and excise, revenue authorities and fisheries research institutions among others. Further, analysis of fishery trade flows at the regional and international level was based on data from the Regional Fisheries Bodies (RFBs) (IOTC, ICCAT, INFOPECHE, INFOSAMAK, ATLAFCO and other organization where updated data was available), Regional Economic Bodies (RECs) (e.g. ECOWAS etc.), RFMOs, FAO FISHSTAT, Rabobank®, COMTrade Statitistics, ITC TradeMap, TrendEconomy (TE), DIT/BEIS database, Ghemawat, ResourceTrade.earth, and other institutions where some data could be sourced owing to the difficulty in getting primary data at the country level. A regional field survey was conducted covering the Eastern Africa (Kenya), North and West Africa (Morocco, Senegal, Cote d'ivoire) and southern Africa (Zambia). For the regions that were not visited including Central Africa AU-MS, desktop analysis was used to collate the data needed for this region in addition to AU-IBAR FishTrade Think Tank meetings attended in Nigeria (Abuja, August 2017) which

brought together representatives from all the AU-MS regions. Furthermore, additional reviews of the AU-MS corridor analysis of fish trade were reviewed to include any omissions /commissions on the Fish Trade Survey at the continental level.

In the corridor analysis notably, the tendency of fishers from remote villages to dry and sell their fish as dried products as per market demand, and partly due to lack of cold storage facilities (pers. observ.), dried fish and fish products often formed the bulk of the traded fish and fish products within the rural setups (Defaux V and Hjort, 2012; AU-IBAR, 2016; Hara *et. al.*, 2017; Meke, 2017). The schedule of the activities for assessment of the impact of international fish trade flows in Africa during 2017 is shown in Annex 4.

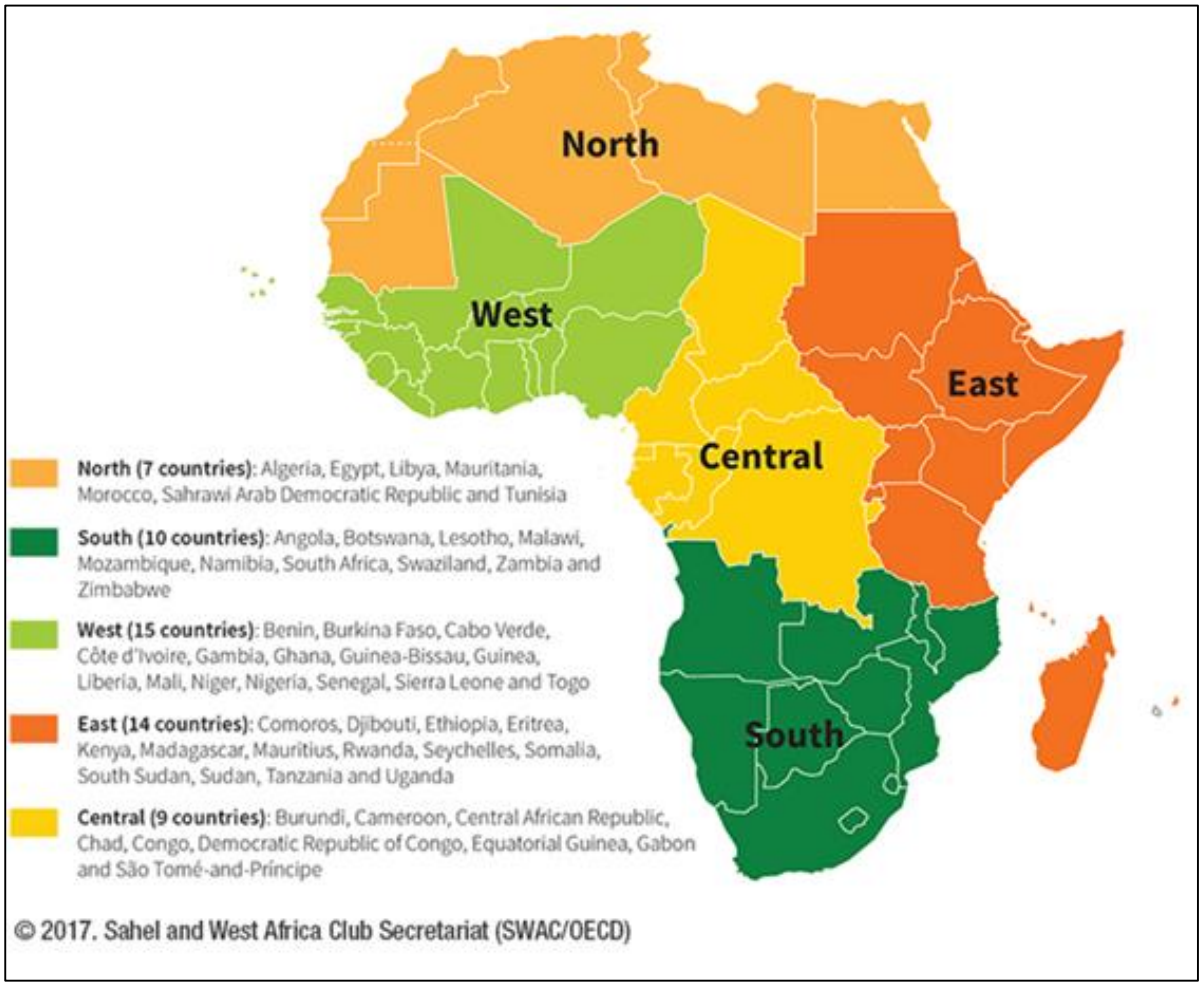


Figure 1: Regions (5) of the African Union member States (AU-MS)

3. SURVEY METHODOLOGY AND DATA COLLECTION

3.1 Overall approach

For the purpose of this study, the definition of the exports and imports followed the standard systems of recording merchandise; (i) the general trade and (ii) the special trade which are mainly differentiated by the storage modalities; whether ware-housed and/or re-exported after warehousing.

In all cases, the "general trade" figures are expectedly larger than the corresponding "special trade" figures because the latter exclude certain trade flows, such as goods shipped through bonded warehouses. The total fish and fish products trade was therefore defined according to the "general trade" goods covering all the types of inward and outward movement of fish and fish products through the AU-MS including movements through customs warehouses and free zones in imports and exports, which either add to or subtract from the stock of fish and fish products resources of each AU-MS, territory, region or economic bloc. In all cases the exports were valued at the transaction value which often compounds the cost of the goods, transportation and other costs such as insurance (as well as "tip-offs), covering all costs to bring the fish and fish products to the exit points or frontier of the exporting AU-MS ("free on board" valuation). Imports were valued at transaction value plus the cost of transportation and insurance (as well as "tip-offs") to the exit points or frontier of the importing AU-MS. In some cases, and especially within small-scale fish and fish product trade, and more so in the informal trade routes, the consultancy used estimates of transportation and taxes (mainly informal payments and tip-offs) at the prevailing market conditions. The analyses were conducted at three levels of frameworks; Micro-, Meso- and Macro-levels, combined with key informant interviews at country, regional and continental level with personnel from the departments of fisheries (Kenya, Zambia), FAO, Regional Fisheries Organizations (Morocco and Cote d'ivoire), WTO (Zambia) and other stakeholders involved in the fish and fishery products trade in the AU-MS.

3.2 Online Structured Questionnaires and KII Interviews

The survey employed online structured questionnaire interviews (Online Survey available at: http://Fish-Trade-Flows-in-Africa.speedsurvey.com as we well as a hard copy version of the same, and a number of tools for key informant interviews. Checklists were employed to ensure that all required data and information on the fish and fish products trade is captured, using questionnaires both in English and French as was deemed appropriate depending on the language of the AU-MS. The Sample of the questionnaire is shown in Annex 6.

3.2.1 Analysis of the Fishery dimensions

In order to understand the dimensions in the various fisheries, the consultancy analysed the fishery data on the main traded fish and fishery products groups (linked to the target and non-target groups), players involved, fishery types (artisanal, small-scale commercial, semi-commercial, and industrial), landings (volumes and value) within the AU-MS, consumption levels (volumes) and export quantities. Secondly, socio-economic data including consumption patterns at household levels, national consumptions vis. a vis. exports, volumes and values traded along the value chains and imports (if any) into the markets at village, national and regional levels in addition to exploitation and value chain analysis, including market competitive strategies, structure of fish and fish products markets, level of integration in the general markets, market performance of the fish and fish products existing policy, legal framework and institutional arrangements for fishery management of the fishery markets were also analysed. Additional information analysed include management of the fish and fish markets at local markets, national and regional levels, social analysis of the fish and fish products markets using stakeholder analysis matrices, political mapping, network analysis, country social analysis and analysis of drivers/factors in the fish and fish product trade.

3.3 Field Survey and Data Collation

The collection and collation of fisheries data and information through desktop and field surveys with:

a) Interviews with traders, fishery managers and other stakeholders in the fisheries sub-sector as target groups that interact with the fisheries

b) Analysis of storage and processing requirements, including ice production, cold storage, fish product development, and transport options;

c) Market analysis for demand, prices, quality needs and trends in relation to structure and sustainability of the market supply as driven by demand, and its role in trade flow patterns and stability.

d) Identification of markets types; primary/secondary/tertiary for fish and fish products, their segmentation and/or access by different fishery sub-sectors

e) Assessment and mapping of fish market routes and trade flows, market strategies and linkages along the fish value-chain to maximize value addition by and for the fisher folks, local and national/regional economies and identification of price sensitivities, and blocking and enabling factors.

f) Assessment of the business development and investment patterns that inform business economics and competitiveness of the fisheries sub-sector in AU-MS countries, and fishery community governance structures that stimulate and regulate sustainable fisheries in the AU-MS,

To achieve the above objectives, PRA tools including Focus Group Discussion (FGD), Key Informant Interviews (KII) and scoring of management issues were used.

3.3.1 Ranking of issues for Economic/Livelihood analysis the fisheries

The fishery actors were used to identify the major groups of fish in terms of importance within the context of the "smaller economies" of the fishing villages, the level of community participation, ecosystem impacts of the fish trade, management structures and issues affecting the fish and fish products trade, and livelihood sources in the fisheries and markets. The issues within each category were then ranked using pair-wise procedure to identify the stakes at various levels, stakeholder involvement, socio-economic impact of the fish and fish trade, and the challenges in the trade among the AU-MS.

3.3.2 Mapping of the fish and fish Product trade flows

The fish and fish product sources and local markets in the AU-MS were identified through virtual FDGs. Within each region, the distribution of fish ports and markets based on distance from the nearest urban markets, nature of the fish markets, including trade routes based on market type (e.g. Cooperative, municipal or city market) and any other relevant information was collated and sketched on maps for geo-referenced mapping of the trade routes and regional markets. The main fish and fish product categories based on market types/corridors were identified for analysis to guide relevant recommendations on legislation and management plans for the markets. Furthermore, wide consultation of related surveys including the AU-IBAR corridor analysis for fish trade flows, Globefish, the International Monetary Fund World Economic Outlook Database, World Factbook (Country Profiles), FAO FishSTAT, TradeMap (International Trade Centre Database), COOPI, The Sea Around Us Data Base, COMSTAT Data Hub, the World Statistics and Data Research FACTFISH, UN ComTrade and the Observatory of Economic Complexity Database.

3.4 Desktop Analysis

3.4.1 Identification of Priority fish and fish product markets

A structured desktop review was conducted to identify the key species / fish and fish products traded in the AU-MS, the main trade centres and market hubs and, major market routes and marketing structures. This involved rapid fishery profiling based on fishery secondary data on traded fish groups, followed by determination of the key indicators and factors, and further grouping of the traded fish and fish products according to their relative economic contribution, social value, national importance, availability of the traded fish and fish products (all year vs. seasonal), existing market

structures especially with regards to post-harvest handling and processing, value chains, trade routes and magnitude. Special attention was paid to the informal trade and possible corridors for IUU fisheries based on data and information from fishery statistics, grey literature and research publications. Sources of information for the fish groups and traded fish and fishery products was derived from secondary data including, but not limited to the following sources:

a) Fishery Frame surveys (number of players involved by fishery type and region);
b) Fishery catch data/landing statistics and or catch Assessment Survey (CAS) data on volumes and value;
c) Publications and independent socio-economic studies;
d) Fisheries Department records on registered vessels, fishers etc.;
e) Department of customs administration statistics on fishery exports based on country of origin and export;
f) Globefish reports for fish and fish products (imports into the EU, middle East, South East Asia, Japan etc.);
g) Trade statistics from the regional fishery institutions including the Indian Ocean Tuna commission (IOTC), SWIOFP, IOTC, ATLAFCO, INFOPECHE, FCWC.
h) FAO fisheries statistics and Fact-sheets on international fish trade and world fisheries;
i) FISH INFOnetwork;
j) Rabobank World Seafood Trade Maps;
k) World Trade Organization (Economic Research and Statistics);
l) Marine Stewardship council (MSC) fishery statistics on exports;
m) Shipment-by-shipment registers from the associations of fish exporters in the AU-MS e.g. AFPEK Kenya;
n) Statistics reports of IUU vessels in marine waters of the AU-MS fisheries;
o) Statistics on landings/exports and assessment of locally traded fish species based on fish auctions, village fish markets etc.;
p) Various studies and reports on seafood trade, quality assurance and compliance, WTO trade negotiations and impacts on fisheries.

3.4.2 Assessment of the fisheries

3.4.2.1 Spatial distribution of the major fish markets and trade routes in AU-MS

To understand the spatial distribution of the fish and fish product markets (linked to the fisheries) and the associated trade routes, a desk review of the number of traders involved based on categorization of traded fish and fish products groups was conducted using data and information from fishery statistical bulletins, associations of fish exporters and the departments of custom administrations in the AU-MS as well as regional trade blocs (RECS). Where detailed CAS data was available, it was collated into the data sets used for analysis of the fish and fish product trade flows.

3.4.2.2 Temporal trends in the fish and fish products trade

To determine the short-term and long-term catch trends in the fish and fish products trade linked to seasonality of species/groups landings within the AU-MS, Statistical Bulletins from the departments of Fisheries, FAO Fisheries Statistics database were consulted and time-series catch data collated for the species/groups in the fisheries. Trend-line fitting on time-series data and time-series analysis of the fishery catch data was conducted using Cumulative Sum (CUSAM) and Auto-Regressive Integrated Moving Averages (ARIMA) to detect changes and determine temporal trends, respectively. The short and long term predictions for traded volumes in particular markets were extrapolated from the time-series data based on cyclic product volume indices of the moving averages. In cases where there was no data on value or quantity, the values were extrapolated from the exports/import data, pegged at ≈US$ 2000-2500/Mt for exports and ≈US$ 900-1500/Mt for imports depending on the fisheries category (Fish, Crustaceans, Mollusks and Live fish categories), and the fact that most AU-MS only import cheaper bycatch products compared to their exports of prime catches.

3.4.2.3 Valuation and Quantification of fish and fish products trade

The social and economic value of the fish and fish product trade was analysed from the primary questionnaire data supported by secondary sources including published data on prices, value of fish and fish product volumes at various notes on the value chain export and trade in fish and fish products. Structure-conduct-performance (SCP) analysis were conducted to determine the structure, competitive strategies including barriers to entry as well as conduct of the fish and fish product trade. Key sources of the data for this analysis included primary data from the structured questionnaires as well as collated data from the departments of fisheries at national level, country trade statistical bulletins, FAO fisheries statistics, and any other sources of data including earlier surveys on fish and fish products trade within the AU-MS.

3.4.2.4 Income Levels and Equity in the fisheries of the AU-MS

The distribution of wealth within and between the various categories of fish trade actors, analysis of the income levels of small-scale formal and informal traders, medium level dealers and large scale players in the regional trade was conducted using two equity indices; the Gini's coefficient; a measure of inequality of income or wealth, and the Schultz index as a measure of income metrics. These indices were used to analyse the equity levels among the fish and fish product trade players to understand the statistical dispersions in the distribution of incomes within the fish and fish products trade. This information would be important in guiding the options available for the maximization of the socio-economic benefits from fish and fish products trade to the main actors and trickling down to the fisheries/fishers who are often left at the initial nodes of the fish and fish trade value chain due to wide disparities in the distribution of

income/wealth within fisheries and markets.

Further, logistic curve-fit regression analysis was used to assess any correlations between various factors and the distribution of income among the players in the fish and fish products trade to better understand the driving forces behind uneven wealth distribution in the trade and seek ways of strengthening equity among the AU-MS fish and fish products trade sector.

4. RESULTS

4.1 Fish Trade-Trade flows in the AU-MS

4.1.1 East Africa Region AU-MS

The Eastern region of African produces an estimated 1.41 million Mt annually from both capture fisheries and aquaculture based on the production estimates from reported country statistics (FAO FishStat, 2018). Analysis of the fish and fish products data from the Eastern Africa AU-MS showed that the region exported ≈222,031 Mt valued at US$ 882.4 Million while imports pegged at 145,867 Mt valued at US$ 460.1 Million, indicating the Eastern Africa region as a net exporter of fish and fishery products (Figure 2 & 3). The per capita fish consumption in the region ranges from 0.3kg/year in Ethiopia which had the lowest, compared to 25.2 kg/year in Seychelles and Comoros which stand out as the biggest consumers of fisher within the region (FAO, 2018). Over the last decade, Mauritius' fish and fish products exports surpass the country's production, which has partly been attributed to transshipment activities at the country's well-developed fishing ports, which are a preferred choice for the DWFNs, i.e. after Seychelles (FAO, 2018).

In most of the Eastern Africa AU-MS, although industrial fisheries constitute a critical pillar of the economy especially with regard to tuna and tuna-like fishery resources, the small-scale fisheries which comprise the mainstay of the coastal fisher-folks still remains of great importance in terms of food security, employment and cultural identity, and especially for island states like Seychelles where huge transshipments of commercial tuna occur (Catanzano and de Lestang, 2013; FAO, 2018). Consequently, the importance of the small-scale fisheries to the national economies and food and protein security in Eastern Africa cannot be understated. In some countries like Madagascar, the fisheries sector is worth over US$180 million/year from an estimated average production of ≈140,000 Mt based on the countries fisheries statistics 2015-2017 (FAO, 2018).

The fisheries sector in the Eastern Africa region accounts for over 74% of the total seafood in the region, with the remaining volumes being supplemented from imports. The sector is a major employer, especially in the rural economy of the communities, where over 190,000 people are directly employed in the sector, and with over 300,000 people indirectly dependent on the fishery. In terms of food security and nutrition of the inhabitants of Madagascar, seafood products are account for ≈20% of the total

domestic consumption of animal protein (FAO, 2018). Despite being underdeveloped, the sector still remains an important pillar for community livelihoods as well as the national economy even in the wider African Continent (per. observ.).

In majority of the AU-MS, fish exports have played a crucial role in the economies of the fisheries at community, national, regional and continental level and especially in the strongest economies in the region. For example, Tanzania's fishery exports pump over US$ 188.0 Million into the national economy (COMTrade, 2018). Similar observations are made for Madagascar with US$ 180.0 Million worth of exports; Seychelles (163.0 Million); Mauritius (US$ 133.2 Million); Uganda (US$ 117.6 Million) and Kenya at US$ 62.9 Million (COMTrade, 2018; FAO, 2018). The production levels and per capita consumption levels for each of the Eastern AU-MS are shown in Figure 1.

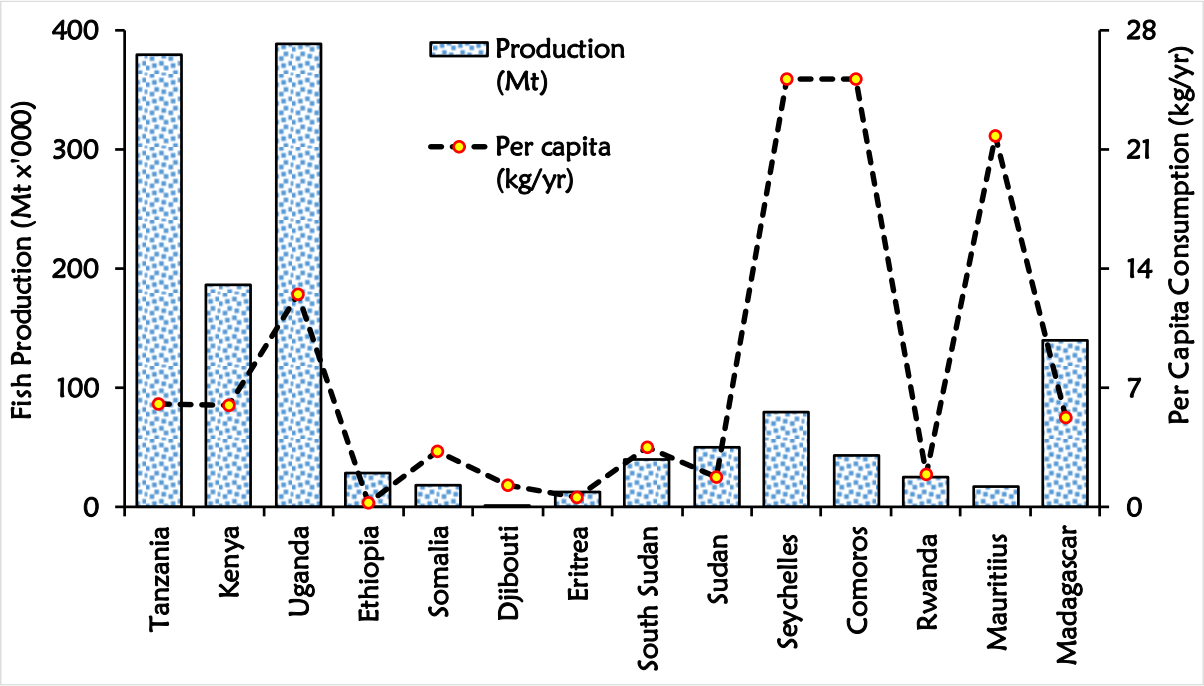


Figure 2: Fish Production and Per Capita Consumption for the Eastern Africa AU-MS

Figure 2 and 3 show the export and import quantities and values as highlighted below. In terms of quantities, Tanzania is the biggest exporter of fish and fish products, with 43,354 Mt valued at US$ 188.0 Million. Madagascar exports ≈41,509 Mt, Uganda (41,000 Mt), Seychelles (36,920 Mt), Mauritius (30,170) and Kenya (14,505 Mt) based on trade statistics from TradeMap (2018) and SOFIA reports (FAO, 2018). However, in terms of value, Seychelles exports are valued at US$ 163.0 Million owing to the exports of highly priced tuna fish and shellfish products as well as value addition (FAO, 2018). Majority of the countries in this region are net exporters of fish expect Ethiopia, Djibouti, South Sudan, Sudan, Comoros, Rwanda, Seychelles and Mauritius with the latter attributed to the large import of tuna and re-export through the Fishing access / partnership arrangements. In overall, the region is a net exporter of fish with a surplus of 52,483 Mt valued at ≈US$ 400.3 Million, indicating a huge potential for re-investment into fishery improvement programmes within these AU-MSs (Figure 3 & 4).

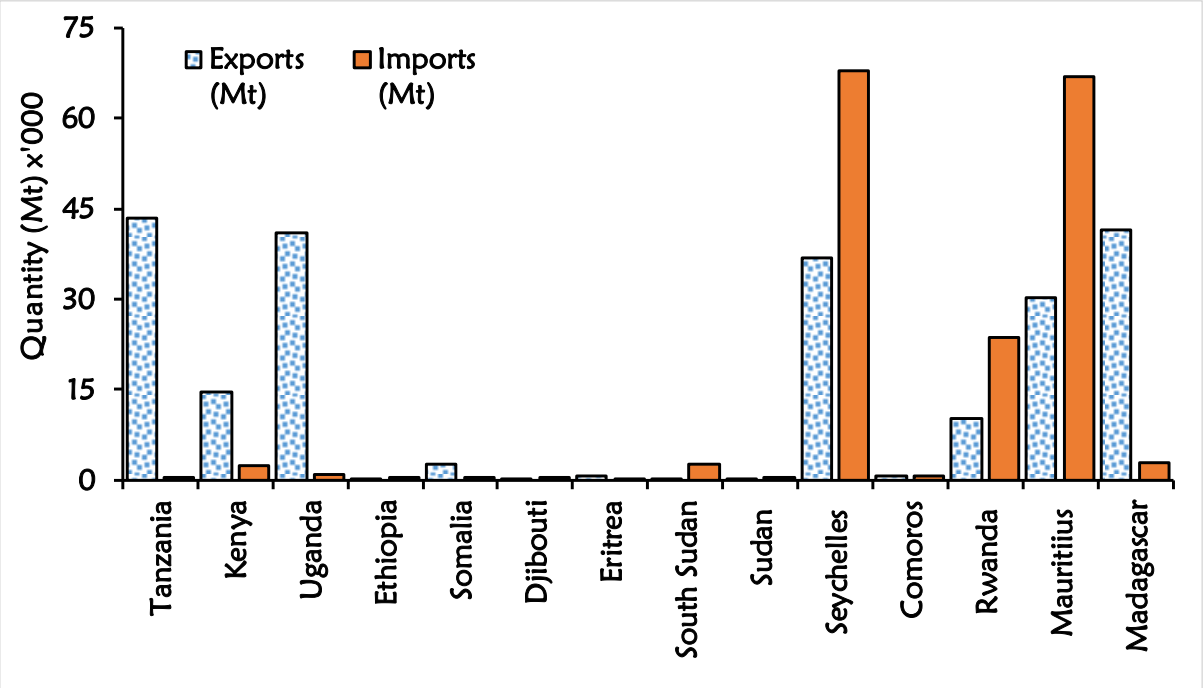


Figure 3: Fish Export and Import Quantities for the Eastern Africa AU-MS

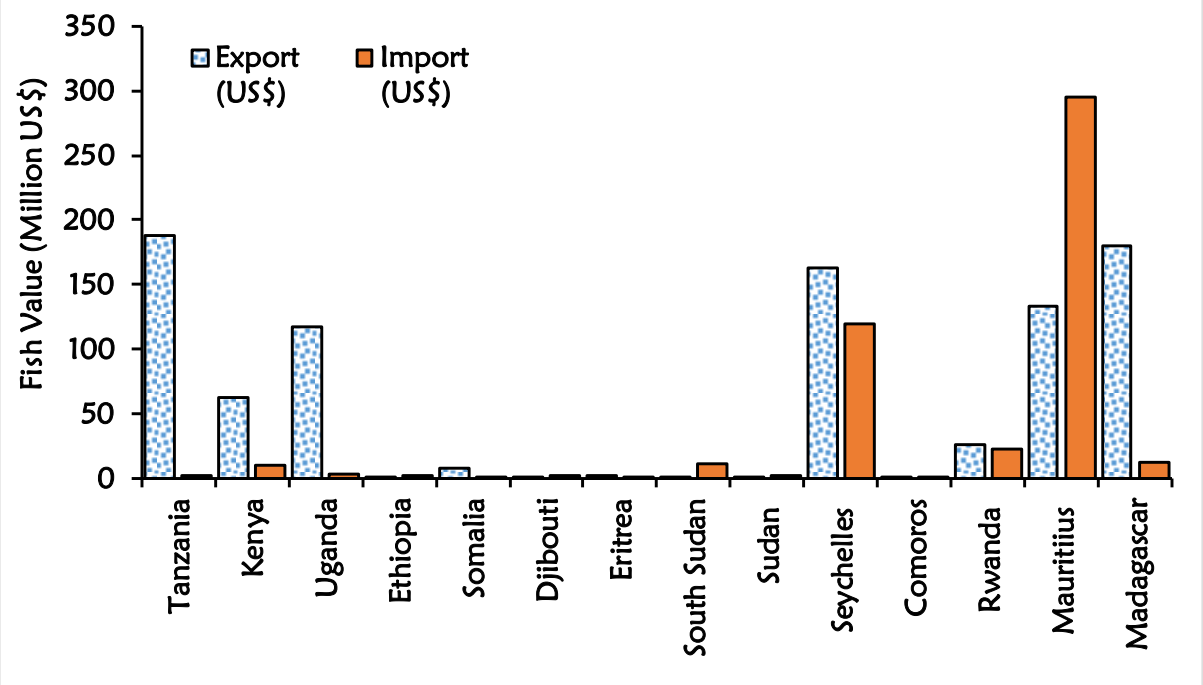


Figure 4: Fish Export and Import (Values, US$) for the Eastern Africa AU-MS

In addition to formal trade in the Eastern Africa region and the wider AU-MS, there is a thriving intra- informal trade in fish and fish products accounting for a huge chunk of the trade in seafood within the region, especially across the borders of neighbouring states. For example, the trade is well elaborated across the Kenya-Busia border with Uganda, where an estimated US$ 37,300 worth of fish and fish products is traded across the border through informal channels (Hyuha *et. al.*, 2017). On the Tanzania-Zambia border, an elaborate informal export of fish and fish products from the Lake Victoria through Tunduma and Kasumulu is evident, with destination markets in Zambia, the Democratic republic of Congo, and Malawi especially for dried and smoked

Rastrineobola Argentea (Dagaa/Omena) and *Haplochromis* sp. (Fulu) (Hyuha *et. al.*, 2017). Surprisingly, the quantities of fish and fish products in informal fish trade have continued to increase with the formal trade dropping considerably. In the Tanzania-Zambia border at Tunduma and Kasumulu for example, the formal trade in fish and fish products from Lake Victoria during 2014 was estimated at 1,200 Mt against ≈200Mt in the informal trade ((Hyuha *et. al.*, 2017). By 2016, the formal trade had dropped to ≈300 Mt against an informal trade of ≈800 Mt of fish and fish products (Figure 5). The thriving of the informal trade in fish and fishery products also suggest that majority of the statistics on per-capita fish consumption within the AU-MS may be seriously skewed given the increase in inter- and intra-regional fish trade (Hyuha *et. al.*, 2017).

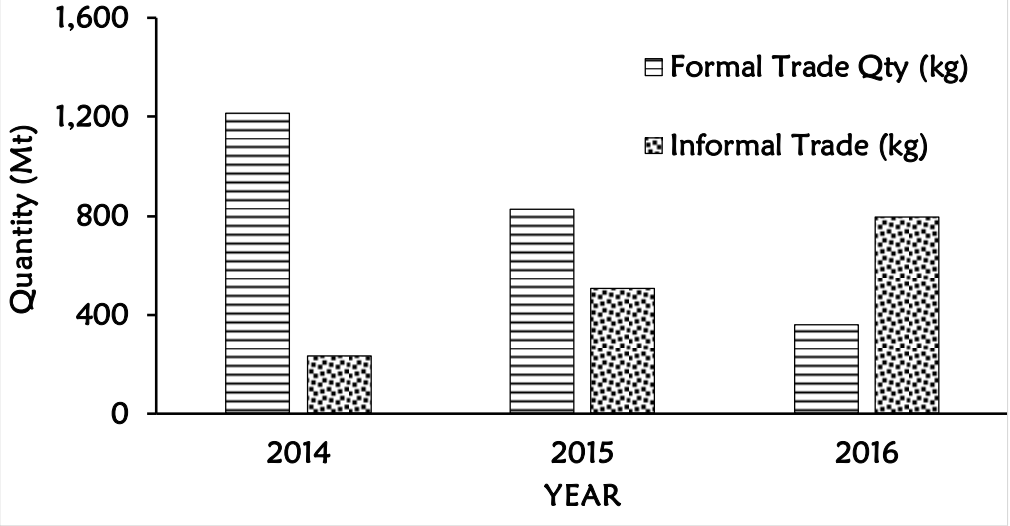


Figure 5: Intra-regional Fish Trade within the Lake Victoria region for a key species, *Rastrineobola Argentea* during 2014-2014

Seasonally, the value of Intra-regional fish trade within the Eastern Africa Region is reportedly higher during the April-December period compared to the January-March period (Figure 6). Preliminary surveys showed that government losses through the informal trade at the Tunduma/Kasumulu border were estimated at US$ 139,395 Million (Hyuha *et. al.*, 2017). However, the biggest concern has been the import of cheaper aquaculture products such as tilapia from China (per. Observ.). According to the Kenya National Bureau of Statistics (KNBS, 2015), China's fish exports to Kenya hit the US$ 10.2 Million mark and have continued to increase, adding impetus to concerns that the imports flooding of the local market with sea food was detriment of local fishermen. On the contrary, China deeply cut its fish imports from Kenya in the same period from US$ 1.34 Million to US$ 0.95 million representing a 29.5 % drop. Kenya also imported large amounts of smoked fish, dried and salted fish from the China during the period raising concerns for the development of the small-scale fisheries sector (KNBS, 2015).

Hyuha *et. al.* (2017) noted that formalization of the informal trade routes through infrastructural development e.g. construction of a market facility, improved road network, storage facilities at Tunduma/ Kasumulu border points, establishment of an e-

data system to track the various nodes in the value chains, harmonization of fish imports and exports documents/requirements in the region, tax reductions, policy coherence and institutional coordination for One-Stop-Border-Point (OSBP) system for tariffs, market information and related processes to reduce time spent at borders due to the perishability of the community. Therefore, there is a need for a policy re-think to cut down on imports that can be produced locally to avert possible suffocation of local fisheries sector markets and development.

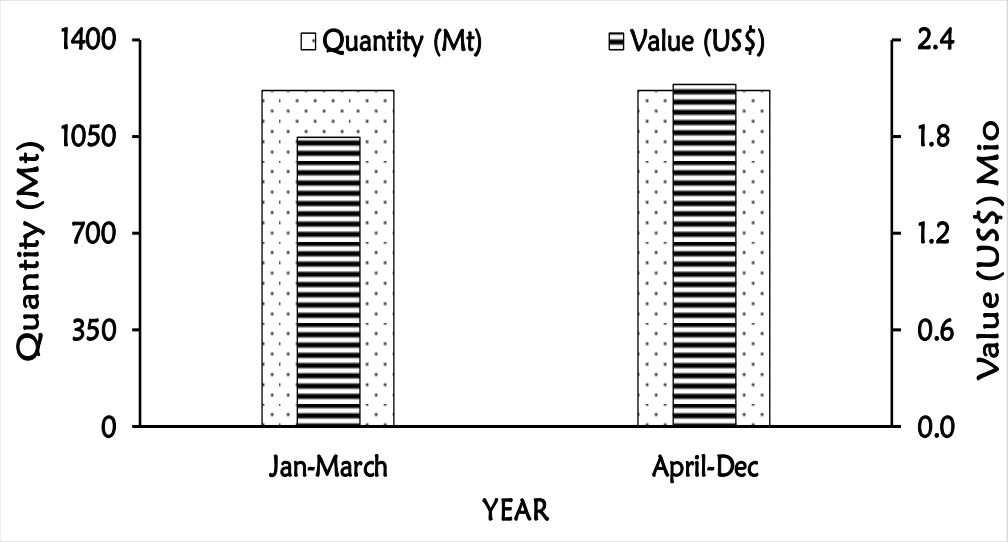


Figure 6: Value of Intra-regional Fish Trade (by season) within the Eastern Africa Region for two key species; *Rastrineobola Argentea* and *Haplochromis* sp.

4.1.2 Southern Africa Region AU-MS

Analysis of the fish trade flows within Southern Africa region shows that Namibia and South Africa remain the major producers and of marine fish and fish products, mainly sardines and horse mackerels. For example, the Namibian fishing sector generated ≈US$ 787.0 million in export revenue in 2017 accounting for 12.4% of the total export (Hara *et. al.*, 2017; FAO, 2018). The total annual catch averages at ≈486,200 Mt comprising of mainly horse mackerel (295,000 Mt), hake (147,000 Mt) and pilchard (25,000 Mt) (Hara *et. al.*, 2017; COMtrade, 2018; FAO, 2018). The inland water fishery statistics are rarely reported but FAO estimates average that this sub-sector accounts for ≈2,800 Mt. Due to Namibia's highly industrialized fishing industry, in 2013 only about 15,000 persons were employed in the sector (COMtrade, 2018; FAO, 2018). Furthermore, due to a severe depletion of pilchard resources, the canneries have experienced a very difficult situation (FAO, 2018). Based on the available statistics and trade data, Namibia exports horse mackerel to the SADC and beyond this region (Figure 7).

On the other hand, South Africa annual production is estimated at 674,117 Mt out of which 163,759 Mt valued at US$ 327.6 Million is exported (Hara *et. al.*, 2017). South Africa presents one of the largest market and economy within this region with over 5.0

Million people consuming ≈310,000 Mt of fish annually according to the World Economic Outlook Database (IMF, 2018). From the local consumption, ≈ 50% is locally caught with >94% of this catch coming from deep-sea trawlers in the waters of the Western Cape province where over 144,000 Mt of hake is harvested (FAO, 2018; IMF, 2018). This makes the fishing industry a major employer in the province where more than 7,000 fishers are directly employed in the deep-sea trawling industry. The commercial and recreational fishing industry (including primary and secondary industries) is valued at approximately US$ 362.1 Million annually and provides employment for an estimated 27,700 individuals, when accounting for both downstream (sea going) and upstream (land-based) value chains (Hara *et. al.*, 2017; FAO, 2018; IMF, 2018). The main exports include fish fillets, lobsters, crustaceans, tuna, skipjack, bonito, mackerel and octopus. Europe (and most notably Spain) are South Africa's leading market for exported fisheries products. Other countries including the United States, Australia, China Hong Kong SAR and Japan also form substantial markets, and exports to South East Asia have also increased rapidly over the years. Similar to observations within the AU-MS East Africa, imports of cheaper aquaculture tilapia from China is also an emerging concern, selling at far much cheaper prices with potentially huge negative impacts on the local aquaculture industry and the food security situation in these AU-MS.

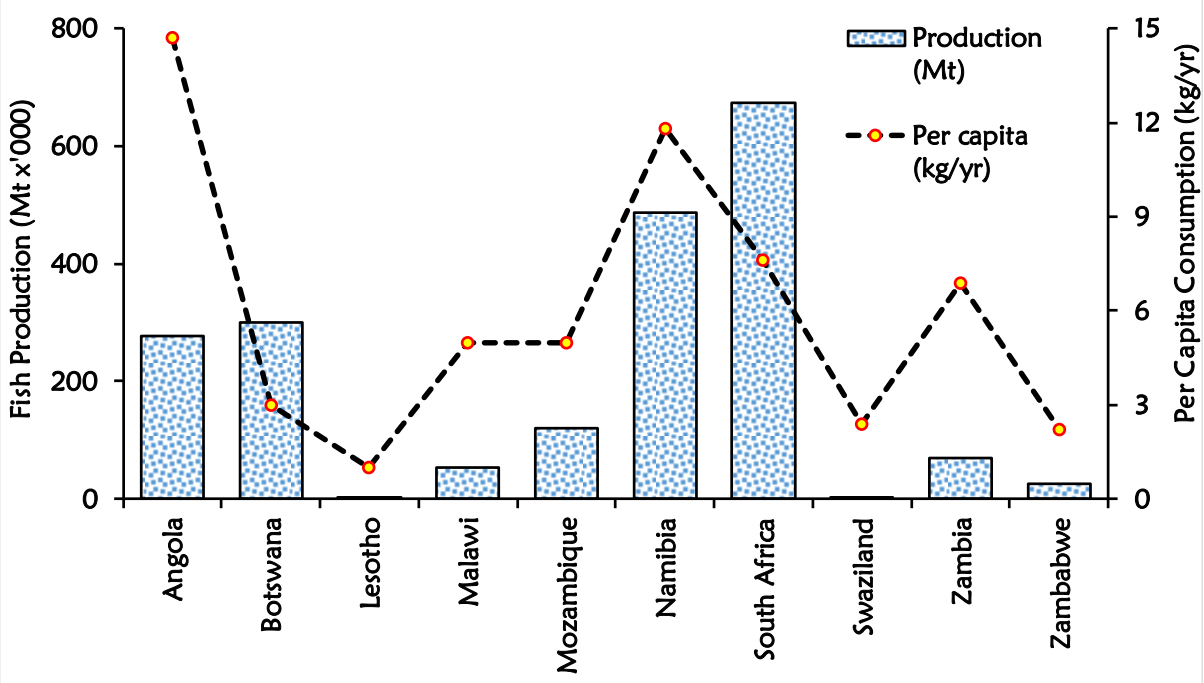


Figure 7: Fish Production and Per Capita Consumption for the Southern Africa AU-MS

In the wider Southern African AU-MS, the informal trade is rampant as noted by Hara *et. al.* (2017). The major species traded include the *Clarias* sp. (Mlamba) where the products such as dried fish heads and smoked whole fish, Crayfish (sundried), and the dried sardines Clupeids *Limnothrissa* sp. and *Stolothrissa* sp. (locally known as Kapenta) from both Lake Tanganyika and Zimbabwe inland fisheries, tilapia, lake Malawi Sardines (Usipa) and *Clarius* sp. and *Oreochromis* sp. from Malawi are increasingly

common although most of the trade data is not fragmented into quantities by each of the listed species.

The informal fish trade in the region is driven by a number of factors including the targeting of the opportunities in the 5-million consumer markets in South Africa, the existence of an historical small-scale women-driven trade buying goods for re-sale in the south (Hara *et. al.*, 2017). The well-developed public service transport system between the countries also makes it easier to move small consignments from one border to the next, supported by poorly manned border points and increasing corruption levels (per. observ.). Furthermore, containerized transport is also available from far-flung countries in other regions (e.g. Nigeria and Cameroon) to the southern Africa AU-MS mostly targeted at established supermarket chains such as Shoprite and Pick-and-Pay among others, especially for supply of dried sardines (Hara et. al., 2017; FAO, 2018; IMF, 2018) (Figure 8). Consequently, there's is a need to formalize this huge informal train and tap on the lost revenue as well as ensure quality control for the consumers across the regions (per. observ.). In order to address this issues and also ensure all the data on the fish and fish product trade flows is captured for more accurate valuations of the fisheries, revision of most of the AU-MS national cross-border fisheries data collection methods as well as trade policies would be important step towards the restructuring of the informal trade in the region (pers. observ.).

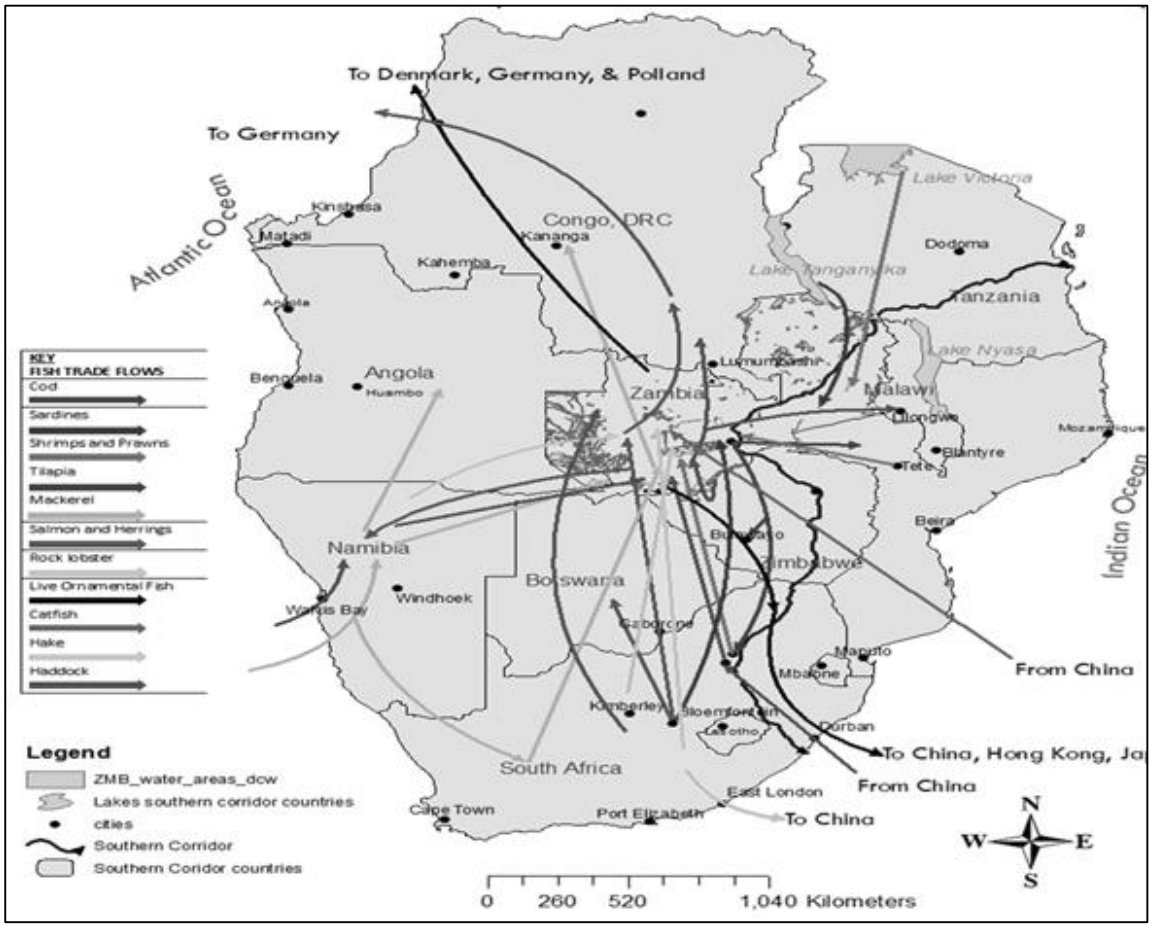


Figure 8: Fish Trade flows in the Southern Africa region (source: Hara *et. al*, 2017)

An integration of the informal fisheries into the Regional Economic Communities (RECs) commitment to free trade is important while easing the cumbersome processes associated with import and export compliance with ultimate aim of establishing OSBPs (Gitonga, pers. comm.). Further, implementation of various strategies such as the ECOWAS Inter-State Road Transit (ISRT) and/or the COMESA Yellow Card scheme would also help to ensure that goods in transit flow easily without having to pay excessive duties or related fees (Hara et. al., 2017; Hyula et al, 2017; Meke, 2017). Like with the Eastern Africa region, improvement of the handling infrastructure for cross-border traders, especially for small fish and other small pelagic species would also go a long way in formalizing most of the fish and fish product trade across borders (Hara *et. al.*, 2017).

In majority of the countries in Southern Africa region, the small scale fisheries are very important for local livelihoods as well as for food and protein security. In Angola for examples, there is a large marine artisanal fishing fleet employing ≈50 000 people actively in this sector and about 3,000-5,500 boats (Silva, 2005; FAO, 2018). Statistics from the Institute for the Development of Artisanal Fisheries and Aquaculture (IPA) shows that the small-scale fisheries account for over 100,000 Mt annually from about 190 landing sites scattered along the coast although the highest concentration of small-scale fisheries is found in Benguela and Luanda provinces (RoA-AFA Project Report, 2016) ngola

Most of the land-locked countries in the Southern Africa region have a relatively developed aquaculture sector, for example, Zimbabwe is remained among the top-ten fish farming countries in Sub-Saharan Africa for a decade with an average annual production of slightly over ≈10,600 Mt. of Nile tilapia raised in floating cages in Lake Kariba (FAO, 2018). Trout is also produced in the Eastern Highlands for the urban markets and for recreational fishing based on fisheries statistics, with an estimated ≈4,000 people employed in aquaculture and nearly 44,000 employed in inland fisheries (FAO, 2018). However, the country lacks an integrated policy to develop and manage its fisheries and aquaculture sectors. Because of a lack of statistics, difficulties in management, and unreported transfers of catch (blackfish) in the *Kapenta* fishery, the actual production of this fishery and its contribution to the economy is underestimated (Hara *et. al.*, 2017). Notwithstanding, Zimbabwe has a considerable potential for aquaculture in its ≈10,700 large-medium sized dams covering ≈3,910km^2 area (Hara *et. al.*, 2017; FAO, 2018).

On the other hand, Malawi's small scale fisheries represent a significant employer within the agricultural sector, with over 57,850 gear owners crew using 15,316 fishing craft (Hara *et. al.*, 2017). The annual production is estimated at slightly over 50,000 Mt (Hara *et. al.*, 2017; FAO, 2018). Despite its small size, the fishery sector in Malawi provides vital and unique nutritional benefits and has a significant impact on food and nutrition security especially in the lake districts. Studies have shown that the fishing communities are better off in terms of nutrition, income and asset accumulation (Hara *et. al.*, 2017). Furthermore, the sector employs a significant proportion of the

population as fishers, processors and traders. Statistics indicate that sector directly employs ≈62,000 people, and about 350,000 in secondary employment. It is important to note that fishing and fisheries in Malawi drives the commercialization of rural economies, with a multiplier effect of ≈1:4, between the point of production and consumption, thus improving food marketing and rural incomes and this is evident especially in the Mangochi District in southern part of Lake Malawi (Hara *et. al*, 2017). Similarly, more than 90,000 people are involved in the fishing sector in Mozambique with ≈70,000 directly in the marine sector and 20,000 in the freshwater fisheries (FAO, 2019; IMF, 2018). Overall dependency stands at ≈500,000 people, directly depend on fishing activities for their livelihood with majority employed in the fish and fish products distribution and sales thus providing a source of livelihood for a large number of women operating from landing sites to the markets (FAO, 2018).

Fishing and fish farming play insignificant roles in the economy of the neighbouring countries such as Lesotho and both capture fisheries and rural aquaculture have stagnated at the subsistence level serving for food security only FAO, 2016). However, cold-water aquaculture, although still at its initial stage, has indicated potential for becoming an important foreign exchange earner for the country (FAO, 2016).

In terms of international trade, the main export markets for the Southern Africa AU-MS include the Southern Africa Development Community (SADC) and the Southern Africa Custom Union (SACU) region which account for the over 40% of the traded volume (IMF, 2018; Trademap, 2018).

Lastly, with an overall production of ≈ >2.0 Million Mt, the Southern Africa region is a net exporter with ≈508,275 Mt of fish and fishery products valued at ≈US$ 1.18 billion exported, compared to ≈453,976 Mt of imports valued at ≈US$ 846.2 Million (Hara *et. al.*, 2017) (Figure 9 & 10). In terms of per capita fish consumption, Angola has the highest rates at ≈14.6kg/year followed by Namibia (11.8 kg/year), South Africa (7.6 kg/year), Zambia (6.0 kg/year), Mozambique and Malawi at 5.0 kg/year while the rest recorded <3.5 kg/year per capita fish consumption, with Lesotho at ≈1.0kg /year (FAO, 2018). The overall per capita fish consumption in the region is ≈6.0 kg/year.

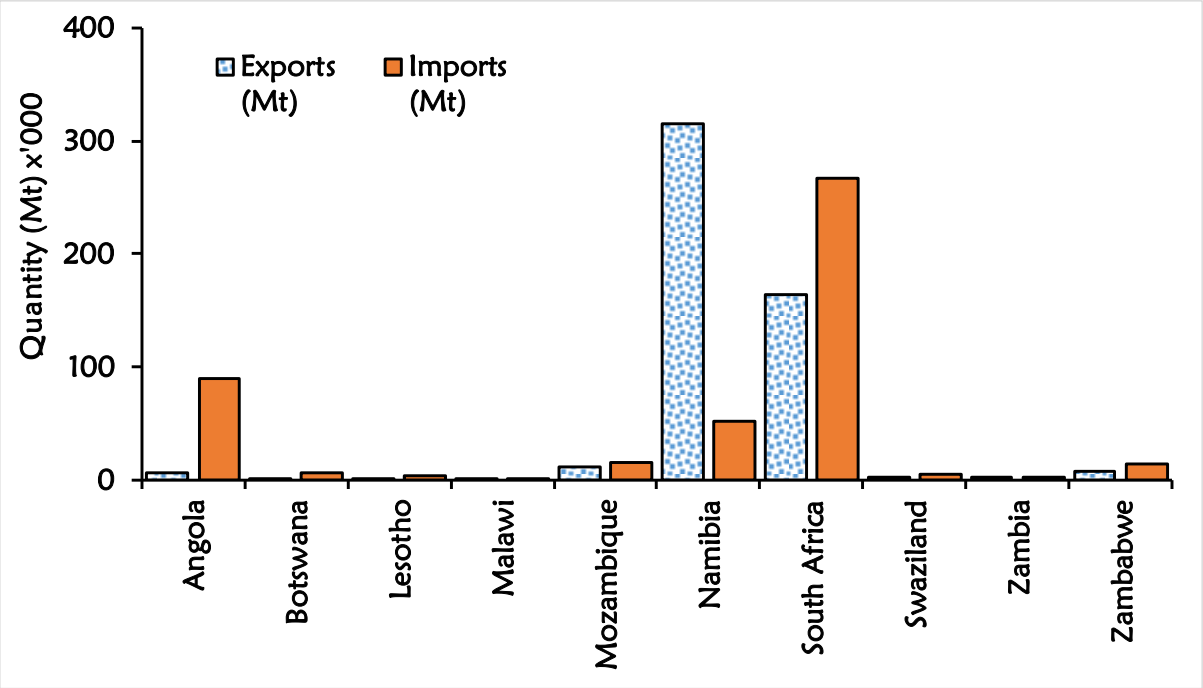


Figure 9: Fish Export and Import Quantities for the Southern Africa AU-MS

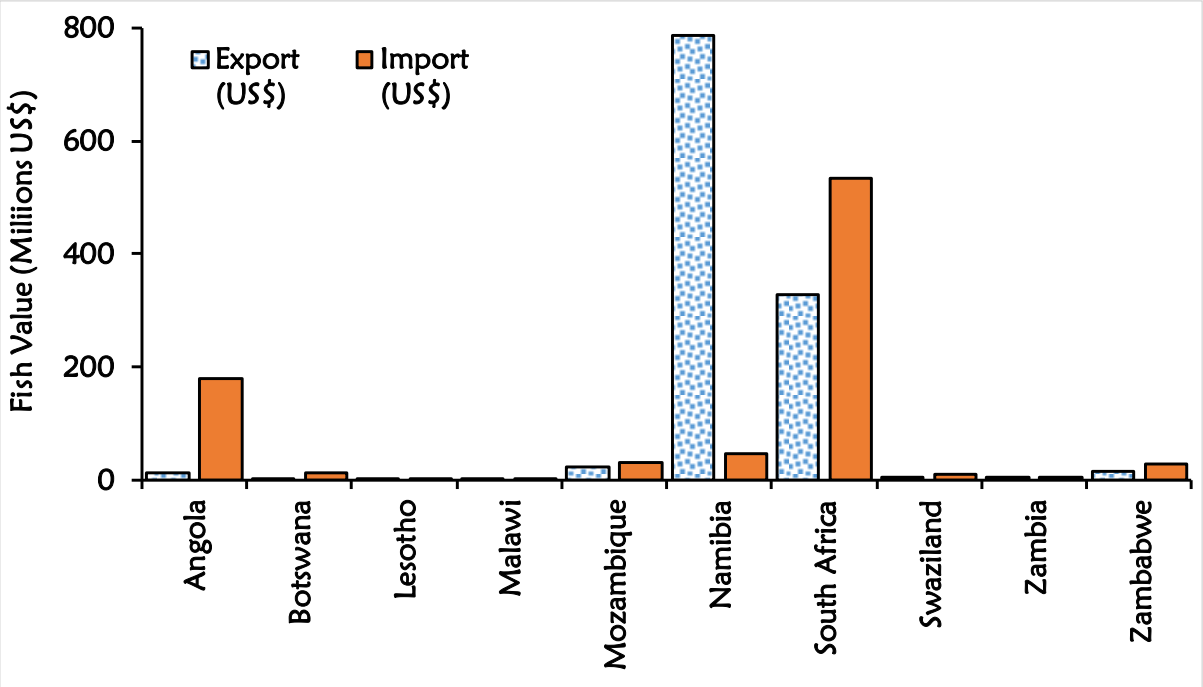


Figure 10: Fish Export and Import (Values, US$) for the Southern Africa AU-MS

4.1.3 Central Africa Region AU-MS

The AU-MS Central Africa region comprises nine (9) countries including Burundi, Cameroon, Central Africa Republic (CAR), Chad, Congo Republic, Democratic Republic of Congo (DRC), Equatorial Guinea, Gabon and Sao Tome and Principe. The total area is ≈ 4,724,617 km^2 with an estimated population of 83.0 million inhabitants (World Factbook, 2018). The coastal states include Cameroon, Equatorial Guinea, Gabon, Congo Republic, Democratic Republic of Congo (DRC) with a bigger chunk of the

coastline belonging to Cameroon (≈400 km) and Gabon (≈885 km). Sao Tome and Principe make up a small island state with total coastline of ≈ 209 km long. The continental shelf is ≈ 134,209 km² with an Exclusive Economic Zone (EEZ) of 1032.5 km² (≈21.9 % of all the countries) (World Factbook, 2018)

The overall production in the Central Africa region is estimated at over 1.29 Million Mt and the region is a net importer with ≈6,112 Mt of fish and fishery products valued at ≈US$ 7.9 Million exported, compared to ≈389,932 Mt of imported fish and fish products valued at ≈US$ 525.6 Million (Meke, 2017) (Figure 11). At the country level, the biggest producer is Cameroon at 779,407 Mt although the country still imports a lot of fish, estimated at 221,409 Mt valued at US$ 295.0 million explaining the high per capita fish consumption at 17.0 kg/year, although this is far much lower than Gabon (31.7kg/year), Sao Tome and Principe (28.9kg/year) and Congo (Republic) at 23.2 kg/year (Meke, 2017; FAO, 2018). The overall per capita fish consumption in the Central Africa AU-MS averages at ≈14.5 kg/year (Figure 11)

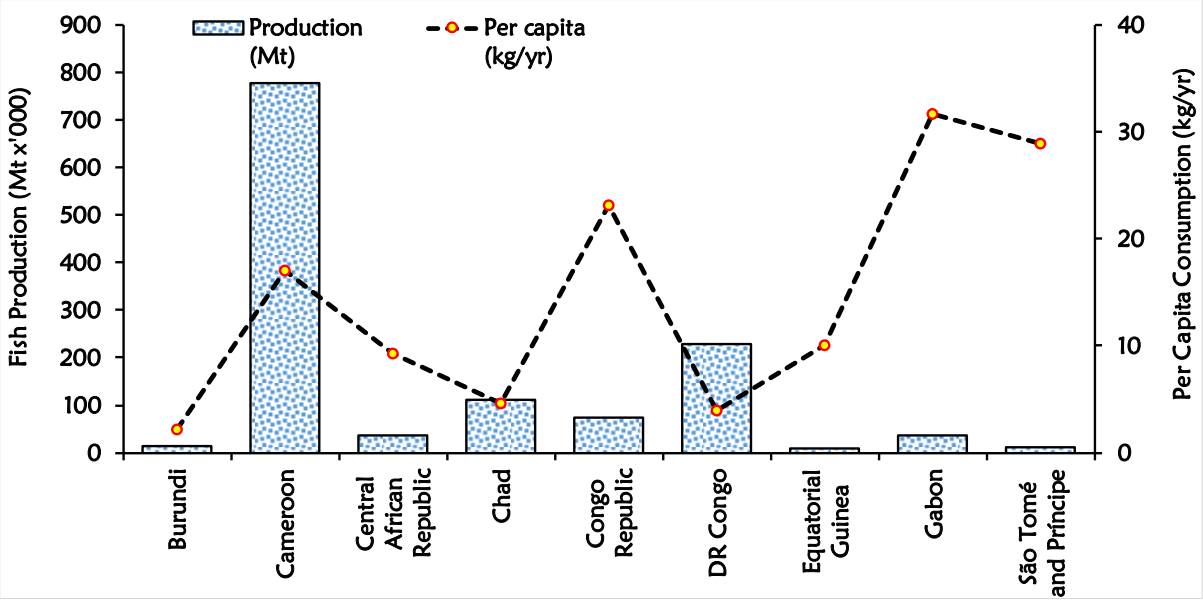


Figure 11: Fish Production and Per Capita Consumption for the Central Africa AU-MS

The Central Africa region borders the Western Africa AU-MS, the Southern Africa AU-MS and the Eastern Africa AU-MS presenting three huge regional markets (World Factbook, 2018). It is linked to the north-west through a rich Fish trade corridor through Nigeria and Niger. With Nigeria's population of 180 million (more than 2x the combined population of the Central Africa AU-MS) and a 900 km trade border of Cameroon, the West Africa region provides a huge market opportunity for intra-regional fish exports, especially for the artisanal processed (smoked) fish products which include Sardinella, shrimps, the bonga shad (*Ethmalosa fimbriata*), catfish and tilapias (Meke, 2017; FAO, 2018). Moreover, the inland states including Chad, Central Africa Republic (CAR) and Congo Republic. A lot of smoked freshwater fish products from Lake Chad are also exported to Nigeria, CAR, Niger and Cameroon. Meke (2017) hinted that fish trade flows within this region have not been properly addressed due to

the lack of a focused regional economic program, and hindrance to develop sustainable and profitable intra-regional trade (Figure 12).

In terms of international trade, the main export markets for the Central Africa AU-MS are vast, including the Southern Africa Development Community (SADC) and the Southern Africa Custom Union (SACU) region, the East African Community, the Northern Africa AU-MS as well as huge markets in the Middle East, Europe, USA, South East Asia, Japan and China (Meke, 2017; IMF, 2018). Due to the trade deficit facing this region and the high dependency on cheap imports especially from emerging markets in South East and China, the Central Africa Region can cut down its trade deficit budgets by importing fish through the intra-regional trade while working towards formalizing the thriving informal trade (per. observ.). The Export and Import quantities and values are shown in Figure 13 & 14).

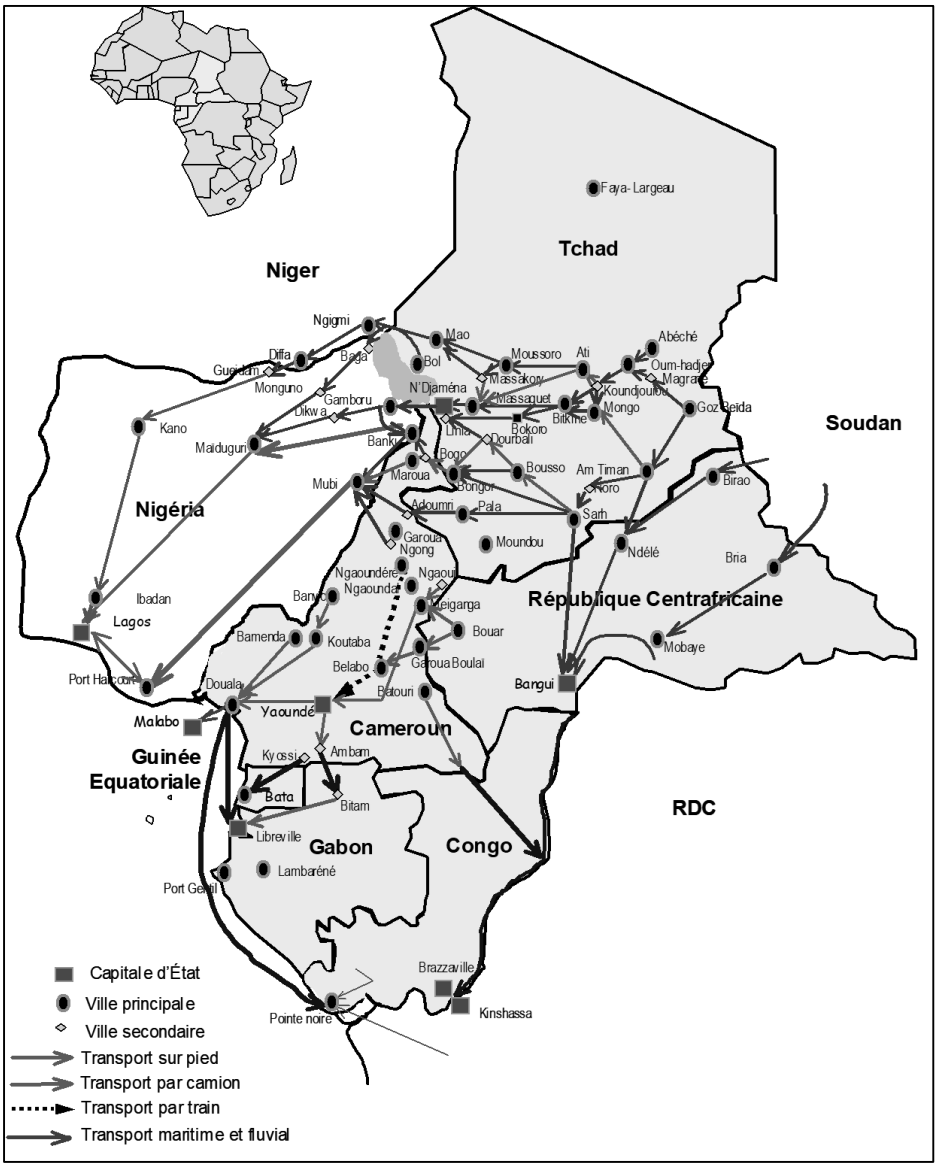


Figure 12: Fish Trade flows in the Central Africa region (source: Meke *et. al*, 2017)

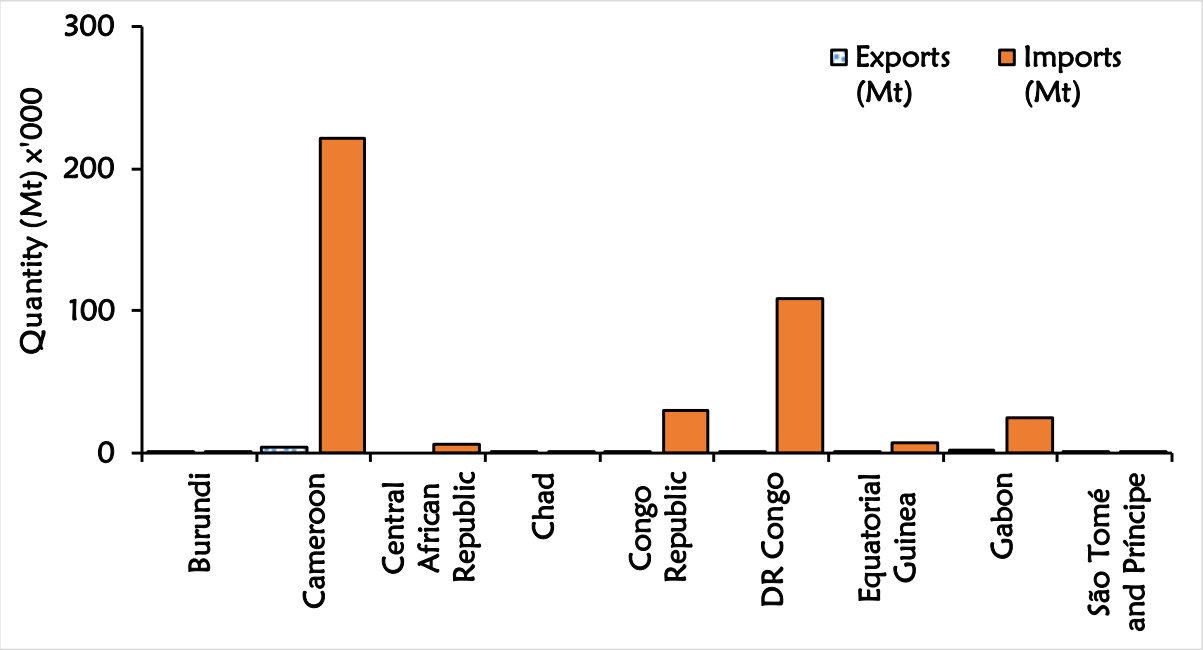


Figure 13: Fish Export and Import Quantities for the Central Africa AU-MS

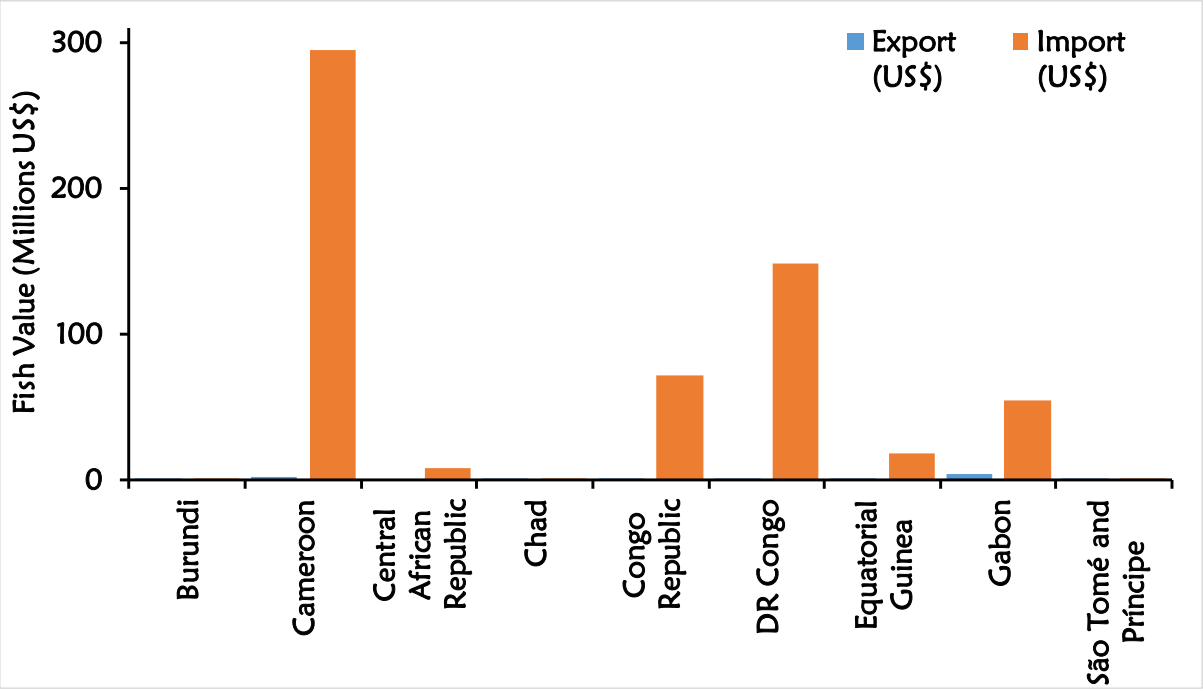


Figure 14: Fish Export and Import (Values, US$) for the Central Africa AU-MS

4.1.4 West Africa Region AU-MS

The West Africa AU-MS is comprised of 15 countries including Benin, Burkina Faso, Cabo Verde, Cote d'ivoire, Gambia (The), Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal Sierra Leone and Togo. The small-scale fisheries of West Africa AU-MS present one of the largest employment sector, with majority of the countries having substantial percentage of the population involved in the fishing and fishery sector (Carbonell *et. al.*, 1998; ODI and porCausa, 2016; Aboya, 2017; Factfish, 2018). The sector employs over 1.0 million fishers and the number of people directly

dependent on these fisheries for food and/or livelihood is estimated at ≈6.7 million (Belhabib, 2005). Furthermore, there is an increasing reliance of West Africa's coastal population on fisheries for their food and income despite decreasing total income and increasing fishing costs, which has in turn aggravated the poverty levels in the sub-sector (Belhabib, 2005).

In terms of production, the region produces ≈2.63 Million Mt valued at slightly over US$6.6 billion. The region exports 1.29 Million Mt valued at US$ 3.01 billion while imports account for 843,711 Mt valued at US$ 1.74 billion (Aboya, 2017; FAO, 2018; IMF, 2018). However, the region also has the highest levels of fish trade deficits with Cote d'ivoire, Ghana, Benin, Burkina Faso and Togo recording the highest deficits (IMF, 2018; Trademap, 2018). The biggest producer in the region is Nigeria at ≈1.03 Million Mt of fish out fish which 480,000 Mt are exported both regionally and to overseas markets while the biggest importer is Cote d'ivoire at 268,533 Mt of fish valued at US$ 671.3 Million followed by Ghana's at 191,429 Mt valued at US$ 373.0 Million (Aboya, 2018). The variations are partly attributable to the quality of the fish imported based on market demands and purchasing power disparities between the countries. The per capita fish consumption is highest for Gambia (27.7 kg/year) followed by Ghana (24.2 kg/year) and Senegal and Sierra Leone at ≈25 kg/year (FAO, 2018) as shown in Figure 15. The regional average per capita fish consumption is estimated at 13.0 kg/year.

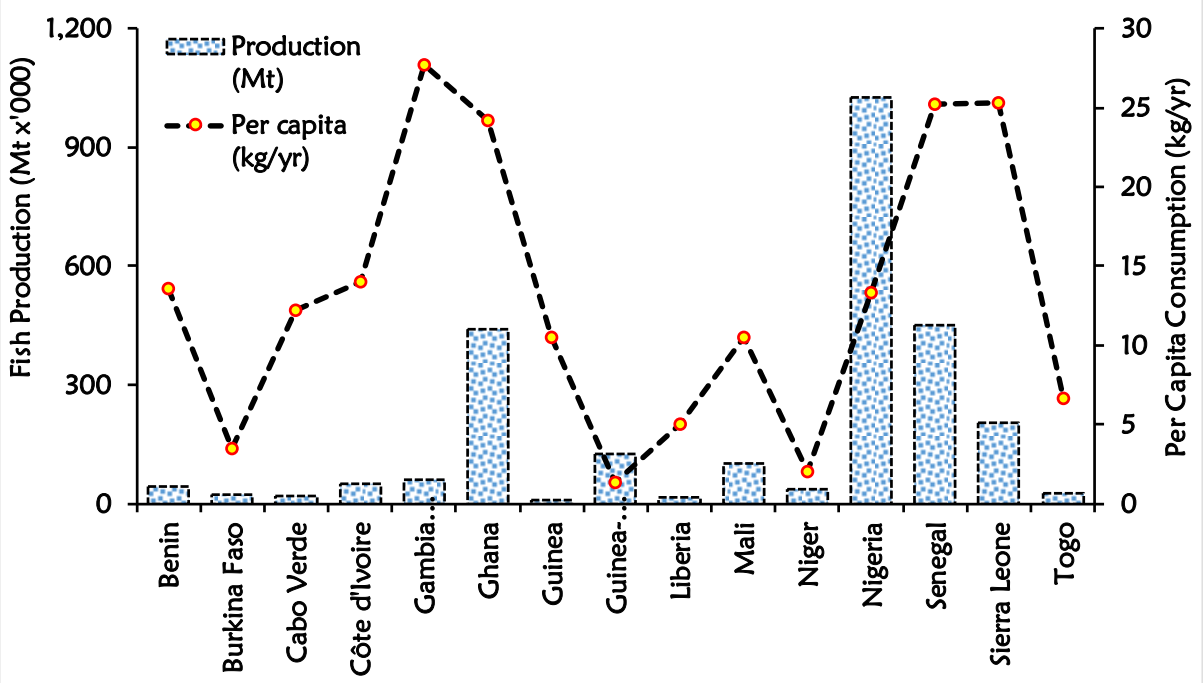


Figure 15: Fish Production and Per Capita Consumption for the West Africa AU-MS

According to Aboya (2018), the West Africa region has a thriving fish trade corridor connecting majority of the AU-MS in the region, and to other regions including the Central and South Africa region. The most notable fish trade routes run from Senegal's Joal-Fadiouth Port with elaborate connections to Mali, Burkina Faso, Cote d;ivoire, Ghana, Guinea and Liberia and other interior markets (Aboya, 2017) (Figure 16).

In terms of international trade, majority of the countries can be categorized as net-importers except for Nigeria, Senegal, Sierra Leone, Cabo Verde, the Gambia, Guinea, Guinea Bissau and Liberia (World Factbook, 2018). The main destination markets for the exports include the EU, China, Japan, India, USA, Singapore, Belgium, Thailand, Denmark, Spain, Portugal, Germany and The Netherlands (World Factbook, 2018). Figure 17 and 18 show the Exports and Imports by quantity and values for the Western Africa AU-MS.

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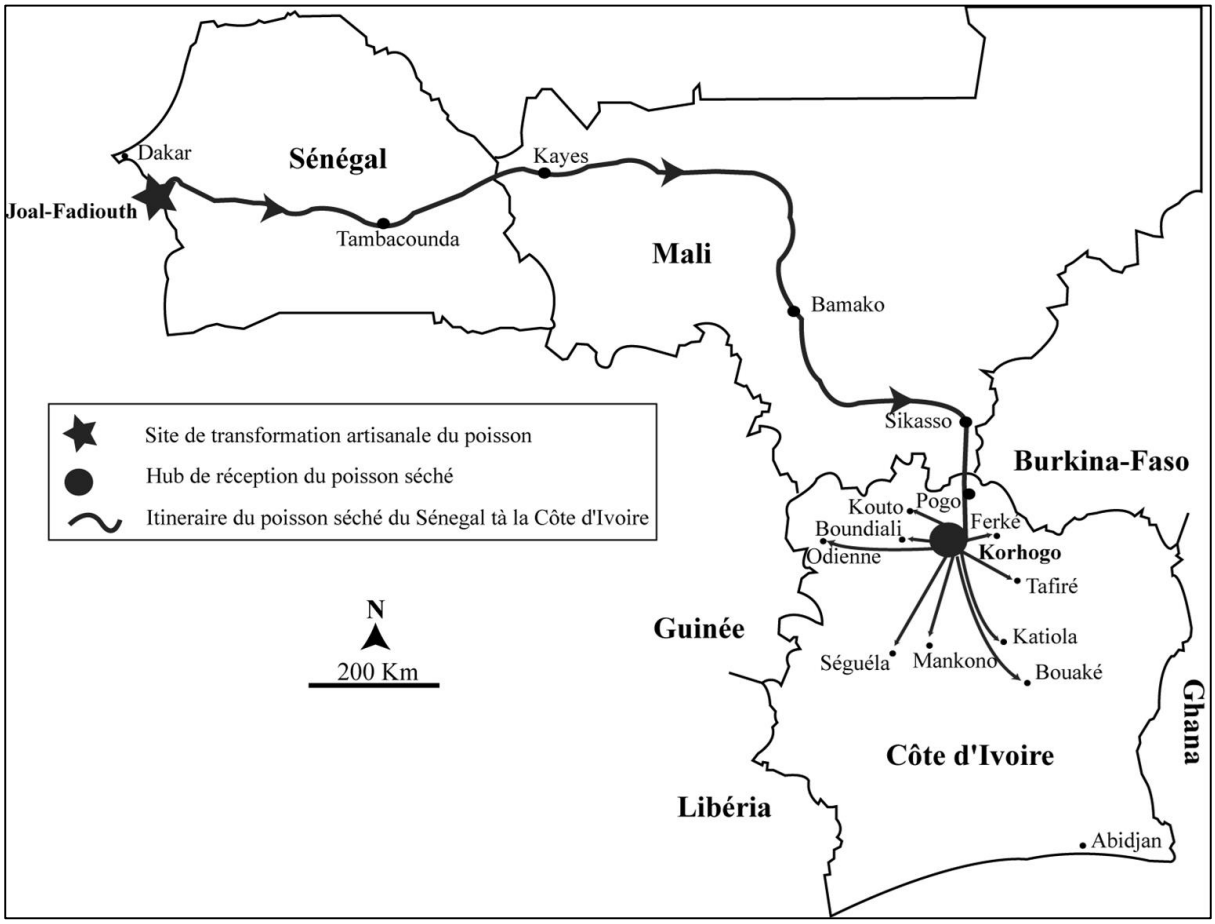


Figure 16: Fish Trade flows in West African AU-MS Markets; Korhogo and Odienné markets Cote d'ivoire (source: Southern Africa region: Narcisse Aboya, 2017)

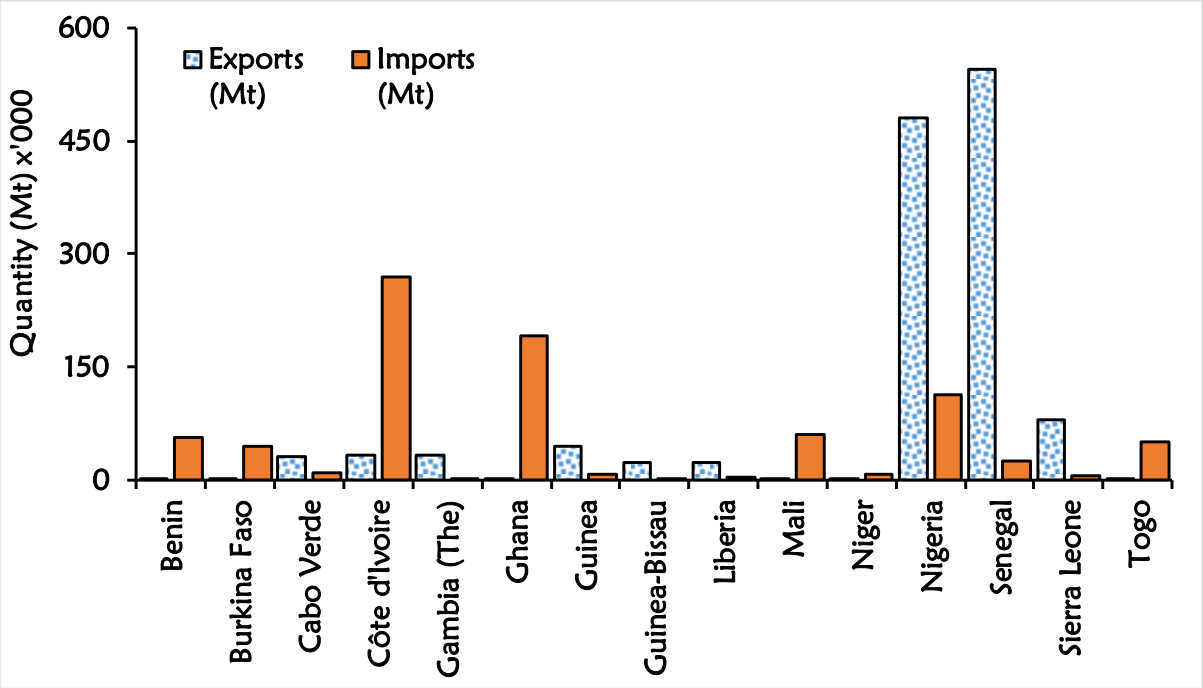


Figure 17: Fish Export and Import Quantities for the West Africa AU-MS

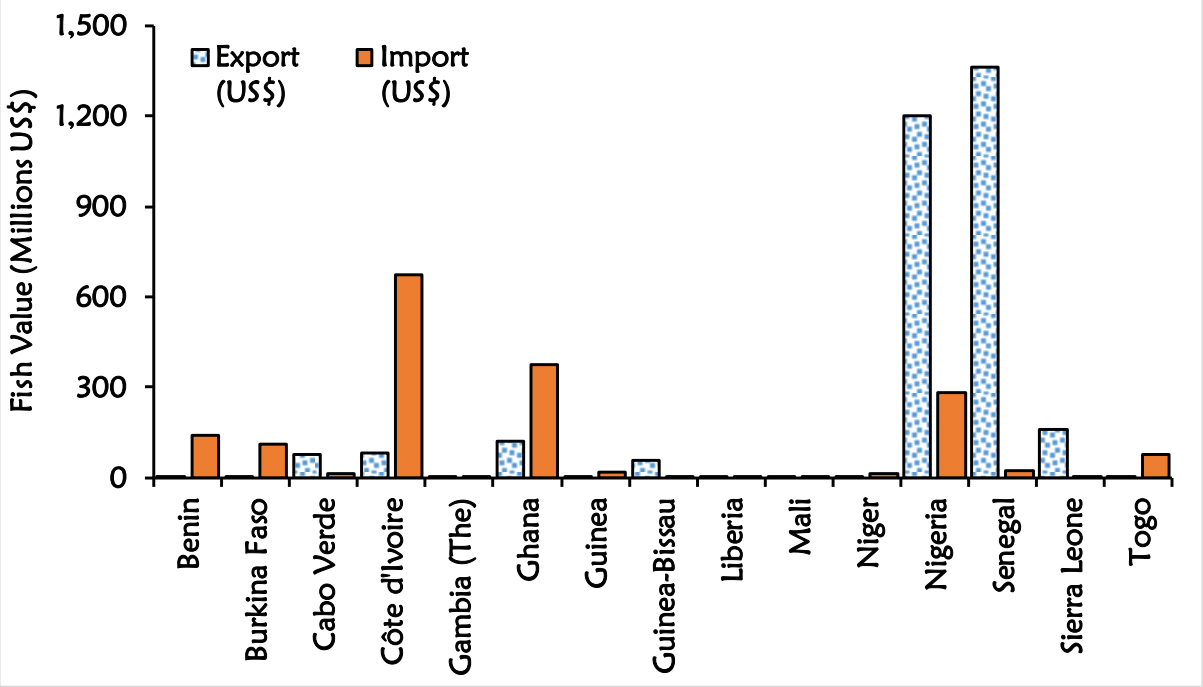


Figure 18: Fish Export and Import (Values, US$) for the West Africa AU-MS

4.1.5 North Africa Region AU-MS

The North Africa region AU-MS comprise Algeria, Egypt, Libya, Mauritania, Morocco, Sahrawi ADR and Tunisia. The Mediterranean basin is the main fishing ground for most of the Northern African region. Fishing remains a mainstay of majority of the communities in the coastal states of the North Africa Region AU-MS. For example, Morocco, the top capture fishery producer in Africa (and 17th globally) has its two maritime facades on both the Atlantic Ocean and the Mediterranean; a coast that extends over 3,500 km (Office National des Pêches -ONP, 2017). The continental shelf

spans an estimated 1.2 million km^2 of exceptionally rich coastal waters. The small pelagic species account for over 80% of all catches, and the country is the world's top exporter of sardines. On the other hand, Libya has the second largest continental shelf, (≈65,000 km^2) and some of the richest fishing grounds in the Mediterranean (Farely, 1971; Lamboeuf, 2000; EC, 2009). Although the fisheries remain largely under-exploited, 95% of the total catches are for direct human consumption and the country is almost self-sufficient in fish, with due to its low per capita consumption of ≈7 kg/year (FAO 2005; FAO, 2018). Countries such as Mauritania are essentially dependent on Fisheries Access Agreements (FAAs) and Partnerships (FPAs) with the European Union, the Russian Federation and vessels flying flags of convenience under the open license regimes for exploitation of the vast marine resources (Pechecops & CFFA, 2006; ADE-PWC-EPU 2002; Orellana, M.A., 2008; AU-IBAR, 2018). An estimated 67.3% (800,000Mt) is landed from the EEZ fleets while ≈32.7% (389,000 Mt) is landed by ≈4,000 national vessels of the industrial and artisanal fisheries (FAO, 2018). Several of the important fishery resources are shared with neighbor states and recent statistics show that important stocks such as *sardinella* and octopus are overexploited, a situation reflected in the main fished stocks in the wider Mediterranean Sea in which majority of the stocks. The inland fisheries of Mauritania are mainly seasonal, landing ≈15,000 Mt which is consumed within the fishing communities or channeled into the informal fish trade corridors (Mehanna, 2015; FAO, 2018). In order to meet the increasing global market demand for fish and fishery products, aquaculture has been foreseen as a parallel and supporting sector for increased aquatic production in the Northern Africa Regions. Among the northern Africa AU-MS, Egypt has the most diversified fish sources, driving its fish yield from three main resources; marine (Red and Mediterranean seas), inland (lakes and River Nile) and aquaculture. However, aquaculture presents the highest portion of the national production, standing at ≈77% of the estimated 1.56 Million Mt of fish produced annually, making it the #1 producer of fish and fish products in Africa, despite the declining fish stocks from marine and inland waters (Mehanna and El-Gammal, 2007; Mehanna, 2008, 2013 and 2015; Tesfamichael *et al.*, 2012). In the last 40 years the fish production from lakes has declined from 50% of the total fish production to only 12% in 2014, while the marine fisheries staggered to a meagre 8% in 2014 (Mehanna, 2015; FAO, 2018). On the other hand, the Nile fisheries dramatically decreased to only 4% of national fish production in Egypt. Consequently, it is aquaculture which has saved the national fish food security situation, especially the fresh water farms which expanded to provide 77% of fish production currently (FAO, 2018).

The overall production in the North Africa Region is estimated at over 4.48 Million Mt with 964,025 Mt exported against 1.58 Million Mt imported by the member states (FAO, 2018). However, it should be noted that the exports from these member states also comprise the intra-regional exports and exports (Figure 19). In terms of per capita fish consumption, Egypt has the highest rates at ≈22.4 kg/year compared to ≈4.0kg /year for Algeria (FAO, 2018; IMF, 2018; World Factbook, 2018). The overall per capita fish consumption in the North Africa AU-MS averages at ≈11.9 kg/year (IMF, 2018; FAO, 2018)

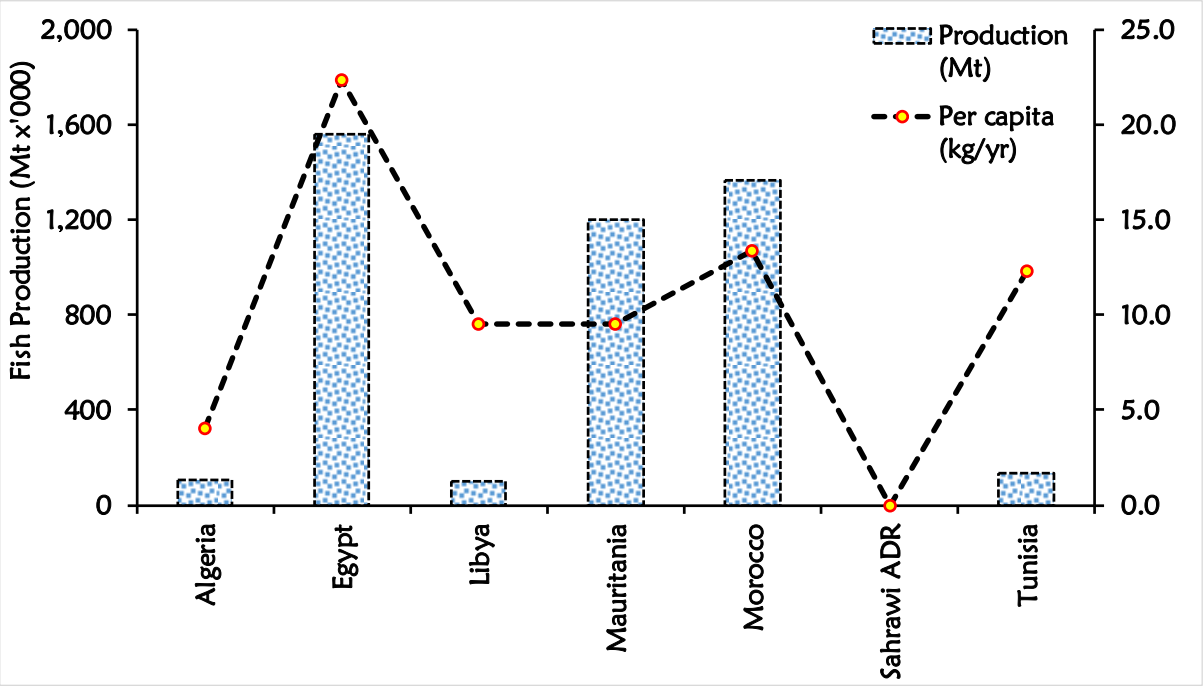


Figure 19: Fish Production and Per Capita Consumption for the North Africa AU-MS

In terms of international trade, Morocco is the largest producer and exporter at 636,000 Mt valued at US$ 1.59 Billion annually, followed by Mauritania at 268,069 Mt (US$ 670.2 Million); Egypt (25,000 Mt at US$ 62.5 Million); Tunisia (21,596 Mt at US$ 54.0 Million); Libya (10,560 Mt at US$ 26.4 Million) and Algeria at 2,800 Mt valued at US$ 7.0 Million partly attributed to the narrow coastline of 1,622 km relative for to an EEZ of 128.9 Km² and a land area of 2.382 million km² (FAO, 2018; IMF, 2018). Moreover, Algeria only issued a decree to establish its own EEZ in April, 2018 ahead of planned offshore drilling projects off Algeria coast. The total export from the North Africa AU-MS is estimated at 964,025 Mt valued at US$ 2.41 Billion, against an import of 1.58 Million Mt valued at US$ 2.38 Billion (IMF, 2018). The Export and Import quantities and values by country are shown in Figure 20 & 21.

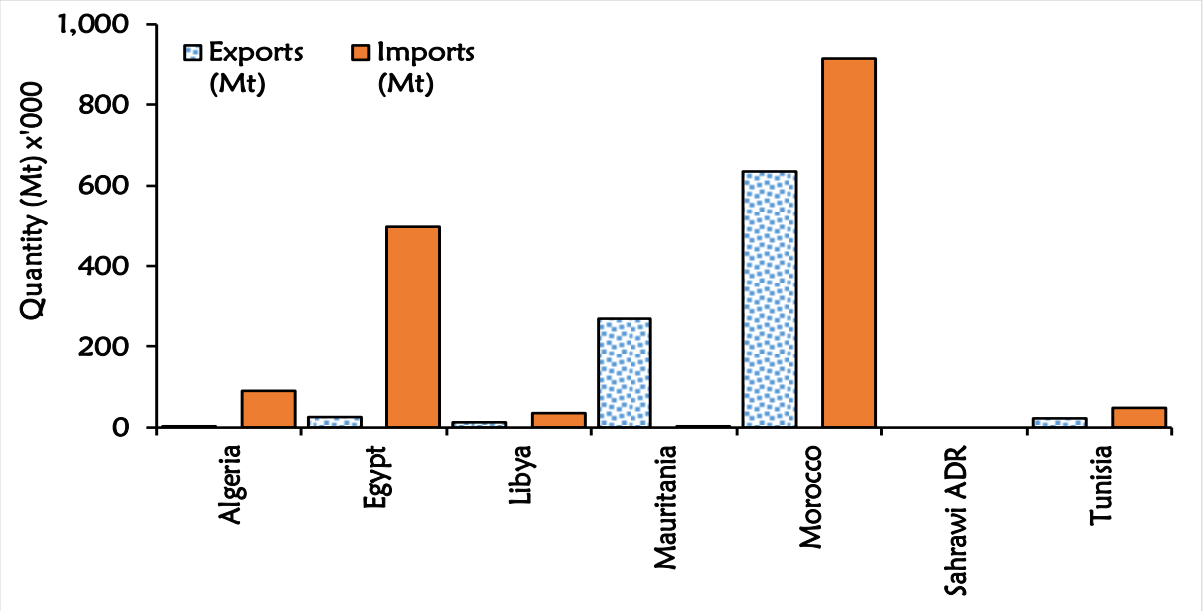


Figure 20: Fish Export and Import Quantities for the North Africa AU-MS

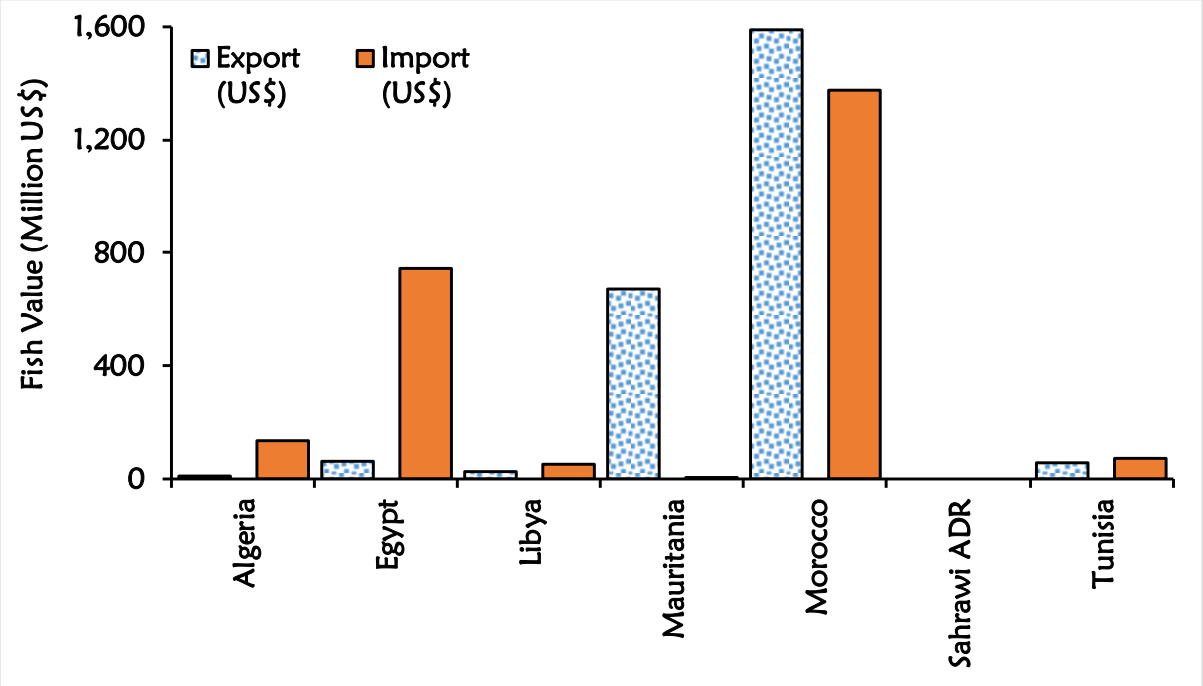


Figure 21: Fish Export and Import (Values, US$) for the North Africa AU-MS

4.2 Fish Production and Trade at the Continental Level

At the Continental level, the total fish production was estimated at 11.82 Billion Mt valued at ≈US$ 17.8 Billion (FAO, 2018; IMF, 2018) (Table 1). The combination of the intra- and inter-regional trade as well as exports and imports into and out of the continent are estimated at 2.99 Million Mt exported outside the national borders of the AU-MS while imports accounted for 3.45 Million Mt from both the AU-MS and outside the continent valued at US$ 7.54 Billion and US$ 6.03 Billion, respectively (FAO, 2018; IMF, 2018). The disparities in higher volumes of imports (relative to exports) at lower values is attributed to the fact that majority of the AU-MS export their prime catches comprising Tunas and other pelagic fishes as well as crustaceans and molluscs and then import cheaper (and may be less nutritious) bycatch fish species from the offshore fishing and DWFN as well as aquaculture products from China and south East Asia (pers. Observ.).

Fish production by regions of the Africa and neighbouring area shows that the Middle East and North Africa region produced 4.86 Million Mt of fish and fishery products followed by Sub-Saharan Africa at 7.42 Million Mt while South Africa produced 5.79 Million Mt of fish and fishery products in 2017 (Hara, 2017; Hyuha, 2017; Meke, 2017; FAO, 2018; IMF, 2018; World Factbook, 2018). In overall, the production from the Arab World was estimated at 4.33 Million Mt totalling 22.4 Million Mt available as fish food and traded products (FAO, 2018; Trademap, 2018; World Factbook, 2018).

By regions of the AU-MS, the biggest production is in the North Africa region at 4.48 Million Mt followed by West Africa (2.63 Million Mt), Southern (2.01 Million Mt), Central (1.30 Million Mt) and Eastern Africa at 1.411 Million Mt (FA), 2018). However,

in terms of both export and import trade, West Africa has the highest level of trade, with 1.29 Million Mt traded outside the national boundaries, followed by North Africa at 0.96 Million Mt, Southern Africa (0.51 Million Mt) and Eastern with 0.22 Million Mt. Central Africa has the lowest level of cross border trade at only 0.006 Million Mt (IMF, 2018) (Table 1). However, it is also important to note that this region also has the highest per capita fish consumption, an indication that most of the fish is consumed locally within the national borders; a very important attribute for the regions food and fish protein security (per. observ.).

The Eastern Africa region has the lowest fish import (0.17 Million Mt), followed by Central Africa (0.40 Million Mt), Southern Africa (0.45 Million Mt) and West Africa (0.85 Million Mt) while the Northern Africa countries imports the highest amount of seafood at 1.58 Million Mt valued at US$ 2.38 Billion (FAO, 2018; IMF, 2018; World Factbook, 2018).

Table 1: Summary of Fish Production, Export and Import Values and Per Capita Fish Consumption by Region, and for entire Africa Continent

	Eastern	Southern	Central	West	North	Africa All
Production (Mt, '000)	1,411.4	2,006.3	1,298.5	2,630.2	4,475.2	11,821.6
Exports (Mt, '000)	222.0	508.3	6.1	1,294.1	964.0	2,994.5
Export (US$, Millions)	882.4	1,175.5	7.9	3,067.9	2,410.1	7,543.6
Imports (Mt '000)	169.5	454.0	397.3	843.7	1,584.8	3,449.3
Import (US$, Millions)	482.1	846.2	594.8	1,734.4	2,377.2	6,034.7
Per capita [kg/yr)	8.2	6.0	14.5	13.0	11.9	10.7

4.3 Impacts of the Fish and Fish Products Trade Flows on AU-MS Economies

Generally, global fish trade has been increasing very rapidly in recent decades. Statistics show that ≈45% of the world catch is now traded internationally strengthened by the widespread use of refrigeration, and improved transportation and communications facilitating the vast expansion of trade, which is an important engine of economic growth and development (Globefish, 2011; IMF, 2018; Trademap, 2018).

However, Africa's share in global exports has remained minor, estimated at only ≈US$ 4.8 billion (Globefish, 2011). Expansion of export volumes is primarily attributed to the growth in exports of fresh, chilled or frozen fish which accounted for over 50% of the total exports. Prepared and preserved fish and fish meal has also contributed to the global exports, though to a lesser extent. However, these exports generate fairly low per unit values, but are important drivers of export revenues due to the large volumes exported with Morocco, Namibia, South Africa, Mauritius and Senegal representing the

top exporters (Globefish, 2011; IMF, 2018; Trademap, 2018). Although export volumes of crustaceans and molluscs have remained largely stagnant over the past decades, they contributed significantly to the growth in export values due to the high prices they fetch, generating ≈30% over the last decade (against a 13% in volume) (FAO, 2018; IMF, 2018).

Among the 54 AU-MS, ≈38 are coastal states with numerous benefits from the exploitation of the coastal and marine waters, and the trade in the fish and fish products at the national, regional and global level (World Factbook, 2018). In addition, the continent is endowed with numerous productive inland waters (with the two largest lakes being Lake Tanganyika and Victoria) and giant river systems including the Nile, the Niger, the Congo and the Zambezi) which are also rich in fish and fisheries (World Factbook, 2018). The fish production at the continental level averages ≈11 Million Mt accounting for 7% of the global production (FAO, 2018). Out of this, 85% of this catch comes from the capture fishery while aquaculture accounts for the remaining 15% (FAO, 2018). Europe remains the main export market for Africa's fish production, taking an estimated 70% of the total Africa export, followed by Asia (15%), North America (2%) and Oceania and South America (1%) (IMF, 2018; Trademap, 2018). It is however, important to note that intra-regional trade also accounts for a substantial part of the Africa AU-MS exports. The top 10 African exporters account for 89.5% of the total value of fish and fishery products exports from the continent; Morocco (29%), Namibia (15.8%), South Africa (12.3%), Mauritius (7%) and Senegal (6.3%), which are among the top 50 global fish exporters (Globefish, 2011; IMF, 2018; Trademap, 2018). Morocco contributes 1.1% to global trade (1.11% by value) and Namibia around 0.6%. Exports grew from 3.5% in 1980's stabilizing at ≈4.6% over the last decade (Trademap, 2018).

However, despite the large size of the African Continent (3rd largest continent, with 22% of the global area), Africa's exclusive economic zones (EEZ) are not as expansive as other continents, accounting for only 9% of the global maritime fishing zones (and only 1% for Western Africa region) (World Factbook, 2018). The EEZs are considerably smaller than those of other continents, especially the South East Asia region where majority of the states are islands. Consequently, fisheries production from the continent is fairly low due to the small EEZ area. The situation has been augmented by poor management of the marine resources and ecosystems that has impacted the fish stocks in a substantial way (pers. observ.). Analysis of the fisheries data from the continent shows that fish imports from outside the AU-MS account for ≈74% with inter- and intra-regional trade accounting for only 26% (AU-IBAR, 2018). However, the informal fish trade also accounts for a substantial amount of the traded fish commodities indicating that the percentage of intra-continental trade is hugely under-estimated (pers. observ.).

Generally, majority of Africa's small-scale fisheries are fairly over-exploited with resultant negative impacts to biomass and ecosystem which has resulted serious devaluation of the resources due to high proportions of small-sized individuals in the

catches (FAO, 2018). That situation is made worse by illegal, unreported and unregulated fishing (IUU) which also destroys marine habitats and weakens the inshore communities (Greenpeace, 2015; www.iuuwatch.eu). Within the continent, IUU is especially rampant in the West Africa AU-MS accounting for 37-40% of the catches taken out of the region, costing the region a whooping >US$1.0 billion annually, and has caused a decline of the deep water fish stocks off the West Africa coast by over 50% over the last few decades (Globefish, 2011; Greenpeace, 2015; FAO, 2018). Similar observations have been noted for the inland fisheries, e.g. Lake Tanganyika's stocks have thinned to about 38% of the stocks after the WW-II due to combined effects of overfishing and climate change (Kurien and Lopez, 2013; FAO, 2018). Moreover, the continent has lagged behind in terms of policy and institutional frameworks to support intra- and inter-state fish trade; for example, Africans fish and fish products imports on the world market average at US$ 4.8 billion with only 26% coming from the fisheries sources within the African continent (FAO, 2018; IMF, 2018) (Table 2), a clear indication of the weakness of the intra-African trade. The strong dependence on fish imported from outside the continent suggests that little efforts have been gears towards exploitation of the continents massive fish and fisheries resources, especially the need for policy geared towards commercializing aquaculture (pers. observ.).

Table 2: Fish trade flows with origin and values within the Africa Continent

Region	Intra-State Trade		Imports		Total (US$)
	Value (US$)	%	Value (US$)	%	
Africa Continent	1238.9	26.0	3526.1	74.0	4,765
Economic Community of West Africa States (ECOWAS)	501.5	25.0	1504.5	75.0	2,006
Common Market for Eastern and Southern Africa (COMESA)	306.5	22.0	1086.5	78.0	1,393
Southern African Development Community (SADC)	493.6	38.0	805.4	62.0	1,299
Economic and Monetary Union for West Africa (UEMOA)	366.0	60.0	244.0	40.0	610
Economic and Monetary Community of Central Africa (CEMAC)	161.0	37.0	274.1	63.0	435
MAGHREB	27.5	7.0	365.5	93.0	393
Southern African Customs Union (SACU	125.0	44.0	159.0	56.0	284
East African Community (EAC)	27.5	34.0	53.5	66.0	81

Data Source: www.trademap.org

Further, many of the AU-MS lack the capacity to exploit their expansive EEZs (FAO, 2018). The state of the Monitoring Control and Surveillance (MCS) of their marine resources is also wanting (Kurien and Lopez, 2013; FAO, 2018). Consequently, the EEZ fishing grounds have increasingly become harvesting grounds for many IUU fishing vessels (Kurien and Lopez, 2013). In many of the AU-MS regions, countries have resorted to agreements which allow foreign fleets access to the African fish stocks (Orellana, 2008; FAO, 2018). However, in most of the arrangements, the fish trade flows are never included in the country's export data, further undervaluing the fisheries of the member states. The transfer of the fishing rights to the foreign fleets earns the continent some ≈US$400 million every year, although the engagements could generate an income of ≈US$3.0 billion, which is up to 8x the current revenue generated through fishery access agreements-FAAs (Globefish, 2011; IMF, 2018). Furthermore, if the member states embarked on developing their national fleets and cutting down on the FAAs, ≈300,000 new jobs would be created if enterprises for the handling of the trade flows and processing of the fish and fishery products were established within the AU-MS (pers. observ.). Evidently, therefore, the FAAs arrangements have progressively moved Africa from the position of net fish exporter to that of a net importer (Orellana, 2008) (Table 3) with resultant dependency on cheap aquaculture products, especially from China as well as 'trash fish' from the offshore trawler bycatch. Interestingly, Africa's fishery production started to decline over the last decade (in 2001), reaching a deficit of ≈US$294 million in 2014 (FAO, 2018; IMF, 2018). The situation is even worse in the Economic Community of West African States (ECOWAS) zone which has the highest deficit, at ≈US$1,398 million despite being endowed with a ≈6,000 km long coastline, an EEZ of ≈2.0 Million km^2 and the most fish-stocked coasts among all the oceans of the world (IMF, 2018; World Factbook, 2018).

Out of the 54 AU-MS, at least 35 states are operating on a fish production deficit and highly dependent on imports, with Sub-Saharan Africa and combined the economic zones of Economic Community of West African States, Economic and Monetary Community of Central Africa and a good part of the Common Market for Eastern and Southern Africa being the most vulnerable (IMF, 2018; Trademap, 2018). The AU-MS within these economic regions also show the lowest per-capita fish consumption in the world, which has also recorded a downward trend after 2001. However, the situation is fairly encouraging in four economic zones; the East African Community, the Southern African Customs Union, the Southern African Development Community and the Maghreb which are on aggregate self-sufficient in fish, with their production exceeding the regional demand (Trademap, 2018) (Table 4). Three countries; Morocco, Namibia and Mauritania have the most surplus production while Nigeria, Egypt and Côte d'Ivoire have the highest deficit, and therefore, also provide the widest markets for intra-Africa fish trade. The overall trade deficit for the continent stands at 13.0% per year (IMF, 2018; Trademap, 2018).

Africa is an important market for fish, accounting for around 11% of global volume of imports (Trademap, 2018). However, in value terms, African imports remain low at around 3.48% of global value due to the high dependence on cheap bycatch/trash fish

and aquaculture products especially from the Asian markets (IMF, 2018; Trademap, 2018). Nigeria is the world's fourth largest importer (5.4% of global imports volume) after China, Japan and the US, but only 23rd in value terms (0.8%) (Trademap, 2018). Generally, although import volumes have grown over the years (at 5%/year), the values have increased at a faster rate (7%/year). Of the top 10 countries that are leading both in exports and imports, only four (4); Seychelles, Côte d'Ivoire, Mauritius and South Africa pay less for their imports than they receive for their exports in terms of values per unit. Consequently, the continued dependency on fish imports has a serious impact on the continents budget deficits due to the relatively higher volumes of imported fish and fish products (IMF, 2018; Comtrade, 2018).

According to statistics from US Comtrade (https://comtrade.un.org/), the main fisheries importers in Africa provide a substantial market for the fish and fishery products from the AU-MS including Ghana (69%), Cote d'ivoire (60%), Mauritius (13%), Nigeria (7%) and Egypt and South Africa t 5% each. However, these countries still import huge amounts of fish and fishery products from outside the AU-MS with Thailand accounting for 32.4%, followed by Spain (19%), Netherlands (10.6%), Vietnam (6.0%) and France, India and USA taking up 5.6% each, Chile (5.1%), China (3.7%) and Albania and Korea at 3.2% each of the top fish importation into Africa.

Table 3: The development of fish trade deficit among the economic regions of the AU-MS during 2001-2014

Region	No. of Countries	2001	2014	Average growth/year
Africa Continent	54	1,172	-294	-13.0%
Economic Community of West Africa States (ECOWAS)	15	-415	-1,398	-10.0%
Common Market for Eastern and Southern Africa (COMESA)	19	-18	-721	-33.0%
Southern African Development Community (SADC)	15	708	528	-2.0%
Economic and Monetary Union for West Africa (UEMOA)	8	-80	-212	-8.0%
Economic and Monetary Community of Central Africa (CEMAC)	6	-13	-429	-31.0%
MAGHREB	5	800	1,356	+4.0%
Southern African Customs Union (SACU	5	585	860	+3.0%
East African Community (EAC)	5	215	331	+3.0%

Data Source: www.trademap.org

At the overall trade deficit of 13% at the continental level, if Africa continues to be subjected to the current fish trade imbalance, the deficit shall reach US$1.2 billion by 2025 (Comtrade, 2018; IMF, 2018). Morocco has the largest surplus of almost 1.4 billion of which US$ was for 700,000 for Nigeria alone, thus lowering the total trade surplus in the continent (Comtrade, 2018). Similarly, some few countries have a trade

surplus; Namibia (US$ 500 million), Senegal (US$ 300 million) and South Africa (US$ 299 million) while Seychelles, Kenya and Tunisia have individually less than US$ 200 million surpluses (IMF, 2018). Angola, Democratic Republic of Congo, Cameroon, Ghana, Côte d'Ivoire, Egypt and Nigeria are fish and fishery products trade deficit countries with Nigeria alone importing an average of US$ 1,245,394 worth of imports with a trade deficit >US$750 million. Consequently, there is a need to regulate the exploitation of the fisheries resources in an effort to cushion the continent against the increasing deficit. In addition, it is also critical for the AU-MS to develop an African strategy geared towards the re-distribution of fish exports from regions with production surplus such as the Maghreb and Southern Africa region to the others where the fishery production and trade has an alarmingly increasing deficit including the West African countries which recorded the highest deficits. Although it may be beneficial for some of the oil or mineral rich countries (e.g. Botswana, Libya) or for some of the relatively more industrialized countries (e.g. Mauritius) to importing some types of food products (e.g. fruits and vegetables) than producing these products at home because they have enough foreign currency reserves to pay for the food import bills, majority of the AU-MS (e.g. Burundi, Central African Republic, Eritrea) are struggling with budget deficits, and persistent food import becomes a problem due to high and rising food import bills take which often siphon money away from other important development agendas without resolving food insecurity (Comtrade, 2018; Globefish, 2011; IMF, 2018; Trademap, 2018). The situation is augmented by the high dependency on export revenues from agricultural products such as cocoa, coffee and spices, whole international markets have become increasingly uncertain and at the mercy of volatile international market prices (FAO, 2011; 2018). Some of the AU-MS such as Burundi, Cap Verde, Comoros, Djibouti, Eritrea, Gambia, Sao Tome and Principe and Somalia virtually depend on donations stabilize the food supply due to huge trade deficits (FAO, 2018). This is despite the continents potential for aquaculture development, with ≈9 million km^2 (31% of the land area) of the Sub-Saharan Africa are well-suited to small-scale fish farming. Consequently, fish farming has been mooted as the most sustainable bargain to address the Africa challenges of meeting its needs through the sea, lake and river catches and a lot of lessons can be learned from the Asian countries, which contribute to about 90% of the world's fish farming (FAO, 2018)

4.4 Interactions between Fish Trade Flows and Socio-economic Indices

In order to understand the synergic Interactions between fish and fisheries trade flows and other socioeconomic indices, selected socio-economic indicators for fisheries were used. Categorized based on their ability to describe/measure sustainability values associated with fishery-related social and economic issues. The socio-economic indicators of the impacts of the fishery and intra- and international fish trade assessed based on the following categories as

i) Fishery Trade Indicators including production quantities (Mt) and value (US$) and employment in the fishery, both direct and indirect;

ii) Fishery Trade/Business Access i.e. proximity and access rights for the for small-scale fish traders living adjacent to the coast who have historically depended on the small-scale fish trade; and concentration/density of markets / traders by fishing villages and/or fishery types. This is especially important where the fisheries are dominated by semi-industrial and DWFN due to technological limitations of the small-scale fishing craft, and the processing industries are also dominated by foreign firms due to the high costs of capital investment required to set up private processing plants;

iii) Community/Demographic parameters including population size and dependency on the fishery and intra- and international fish trade, levels of income, traditional trading communities, value-addition and upstream benefits and/or the number of local vs. foreign fish processing plants or processing jobs in the region;

iv) Economic aspects including market access, fair pricing (especially for local catches vs. imports), contribution to individual and society income/ wellbeing, and profits;

v) Small-scale trader-/stakeholder-welfare including safety, fair compensation to exploited community/ national resources especially in fisheries with FAAs/FPAs without landings at the local ports, the seasonality of the fish trade (and thus, employment in various sectors), fisher/trader rights and management responsibilities etc.

In the analyses of the fish and fish product trade flows in Africa, it was evident that the sector plays significant social and nutritional roles in Africa contributing to food and nutrition security, and providing jobs, in particular for coastal populations, which are often among the poorest and most vulnerable World Factbook, 2018). On average globally, fish and fish products account for 18% of animal protein intake and therefore, due to the growing population and per capita income, demand for fish is expected to increase 30% by 2030 (Comtrade, 2018). If the current trend continues without management, the poorest countries will suffer the most, aggravated by climate change with rising sea temperatures, harsher weather conditions for fishers, migration of fish to cooler waters away from the equator and shrinking fish size according to the World Bank (http://www.worldbank.org/) programs for Africa fisheries.

In terms of economics interactions, the contribution of fisheries to Africa's economy cannot be understated. In 2011, for example, fisheries and aquaculture directly contributed $24 billion to the African economy, representing 1.3% of the total African GDP (World Bank, 2011). In addition, the sector provides employment to over 12 million people (58% in the fishing and 42% in the processing sector) and despite the fact that the fishing jobs are almost entirely taken by men, about 59% of the processing work is done by women (IMF, 2018; World Bank, 2018). Analysis of the fish and fish product value chains also shows that employment multiplier effects are remarkable in the sector: for example, for every fisher job, 1.04 additional onshore-jobs are created

in Mauritania, while this ratio reaches 3.15 in Guinea, illustrating the potential for further job creation through value chain development (WARF-P, 2018; SWIOFish, 2018; World Bank, 2018). The recent approach by many of the AU-MS embracing the Blue Economy as "Africa's Future," and recognizes the key role the ocean plays as a catalyst for socioeconomic transformation is evident of the interactions between fisheries, fish and fish product trade flows in the continent with the socio-economic development of the coastal communities as well as the associated rural and urban markets.

4.5 Impacts of Imports/Exports on Fish Availability, Food Security and Livelihoods

International fish trade has greatly grown for majority of the AU-MS, however, statistics show that despite the significant progress, the trade has not served as a dependable source of revenue or an effective tool for the achievement of rapid and sustainable economic growth and development for majority of the member states (Globefish, 2011; IMF, 2018; Trademap, 2018). In fact, analysis of the intra-regional trade clearly shows that majority of the AU-MS stand to benefit a lot from the formalization of most of the intra-trade, which to a large extend remains under the informal sector, through "legal and illegal smuggling" of the fish and fish products across porous borders between one-member state to the next, and even regionally (Aboya, 2017; Hara *et. al.*, 2017; Hyuha *et. al.*, 2017; Meke, 2017). Therefore, capacity building in this sub-sector would constitutes an imperative response to challenges facing the fish trade imbalances for Africa and is likely to contribute to enhancing the countries' capacity and ensuring effective completion at the international markets (pers. observ.).

Secondly, the fish exports from across the Africa continent have enhanced the dynamics of social polarization and exclusion, especially in the upstream sections of the fish value chains, with potentially important food security implications especially in coastal communities where purchasing power is extremely weak (Globefish, 2011; IMF, 2018). Furthermore, the growth of export-oriented fish industries has to a large extent, accentuated growth of dual-structured fisheries value chain, with the prime catch fisheries targeted at export market often leaving low value trash-fish for the local markets (pers. observ.). Furthermore, the focus on developing export fisheries has left the small-scale fisheries sectors largely ignored, with diversion of huge budgets for this sub-sector from the domestic fisheries and market segments to the export-oriented segment especially for fresh and frozen fish products serving the EU market and Asian markets (Comtrade, 2018; FAO, 2018). Such focus has been accompanied by the selective upgrading and segregation of the export-oriented segment of the chain accentuating social cleavages, with wider gaps between the relatively empowered semi-industrial and industrial sectors, and the relatively disempowered small-scale fisheries sector (FAO, 2018). Such scenario is also evident between the small-scale traders, especially the womenfolk fish mongers, and the medium to large-scale dealers in the export segment (IMF, 2018; Trademap, 2018).

In regions with a growing export market, there is also diversion of supplies from the domestic market chains to the export chain, with serious food security implications especially nutritional status of the poor fisher communities due to increased fish and fish product prices associated with declining domestic supplies (pers. observ.). The implications of the export market for unprocessed fish products with regards to limited downstream and upstream benefits also has serious implications for employment, and numerous jobs are lost especially for the less skilled labour within the industry (Catanzano et de Lestang, 2013; Kurien and Lopez, 2013; OECD, 2013). However, in fish ports with established processing facilities, increased employment opportunities are evident, particularly of women, thus raising domestic incomes with enhancement of food security in these communities (SFA, 2011; OECD, 2013). Furthermore, considerable amounts of foreign exchange can be accrued from fish exports for buying less expensive, nutritious food to supply to vulnerable populations thus ensuring improved levels of food security.

In fisheries targeted on harvesting of exportable species of fish species, there is a likelihood of severe competition between the different sub-sectors of fishers targeting the same species, with likely disruptions that have a negative effect on employment, income and hence on food security (Okemwa *et. al.*, 2009). In majority of the cases, the most affected sectors of the fishery are the poorer small-scale fisheries where re-investments from the fishery income are virtually stagnated at zero, as noted in the ornamental fisheries in Kenya (Okemwa *et. al.,* 2009). Furthermore, large imports of fish can lower the price of fish in the local markets of the importing countries with adverse impact on their earnings and consequently their food security status, as well as available savings for re-investment. On the other side, large fish imports can also provide numerous jobs in the fish processing and distribution activities in the importing countries raising the employment and incomes of many fish workers, particularly women, and thus enhance food security as observed in the fisheries such as Seychelles (Catanzano et de Lestang, 2013; Kurien and Lopez, 2013; OECD, 2013). However, poor or absence of strategic fisheries management, increased imbalance and fluctuations in fish trade flows between exporting and importing countries and/or economic blocs can result in the fish producers in both the exporting and importing countries exploiting fishery resources, indiscriminately (Okemwa et. al., 2009).

It should be noted that the small-scale traditional fisheries (often subsistence in nature) are, from a socioeconomic perspective, an important metric for socio-economic indicators. This is because even for a some highly commercial fisheries such as the offshore fisheries which are often tied to FAAs/FPAs e.g. the pelagic fisheries targeting the tuna and tuna-like fisheries, the traditional/indigenous use should be the highest priority from a management perspective due to the millions and millions of coastal fisher folks who are dependent on the fisheries (FAO, 2018; IMF, 2018). Consequently, prioritization of the small-scale fisheries should be used to set benchmarks toward which other fisheries aspire. Similarly, the prioritization of the small-scale intra-regional fish trade and definition of policies to formalize the largely informal fish trade across the numerous trade corridors in the continent must be emphasized in order to increase the

benefits accruing from cross-border and intra-regional fish trade in Africa (pers. observ.). However, the prioritization of the small-scale fish trade also directly impacts the commercial component of the fish trade, with likely closures of the medium sized investments, a typical scenario in majority of the AU-MS, where medium sized investments in fish processing and trade are evidently absent, with dominance of either the small-scale fish trade often through informal routes and/or large scale investment tied to fishing ports and export oriented processing factories (Aboya, 2017; Hara *et. al.*, 2017; Hyuha *et. al.*, 2017; Meke, 2017; IMF, 2018). Analysis of the fish trade corridor surveys (AU-IBAR, 2017) shows that there is a close link between the fishery and fish trade structure and socio-economic indicators, with the small-scale informal fish trade corridors eliciting substantial effects of downstream market forces on socioeconomic wellbeing relative to areas with formal industrial type fish processing and trade (pers. observ.). The sprawling cities and towns across many fish trade corridors within the AU-MS, such as Busia on the Kenya-Uganda Border, Mwanza on the shores of Lake Victoria, and Mbeya in Eastern Africa; Joal Fadiouth, Tambacounda, Kayes, Bamako,Sakasso and Pogo in West Africa; and Limbe, Maga, Mouanko and Ensemble in Central Africa among others are evidence of the socio-economic impacts of the informal fish trade corridors (Aboya, 2017; Hara *et. al.*, 2017; Hyuha *et. al.*, 2017; Meke, 2017; IMF, 2018). Consequently, simply having formal fish trade establishment in many fishing villages has not been sufficient, and apparently 'official' fish trade has never resulted in tangible socio-economic well-being for fishery dependent individuals and communities and, hence additional emphasis must be put on finding sufficient market indicators for societal wellbeing, especially in such formal markets (pers. observ.).

Due to the nature of the coastal communities across the African continent, many of the socio-economic indicators would best be understood by comparing indicators over spatial-temporal scales). Furthermore, different individuals/stakeholders weight indicators differently and it would be difficult to summarize indicators into a simple statement. Consequently, future surveys should re-define the metrics that would help identify the criteria under which e.g. a fish trade structure would have considered healthy from a socioeconomic perspective. Such indicators would serve as measures of progress toward those minimum standards, and be measured in ways that are comparable across regional and/or international boundaries in the effort to restructure the intra- and international fish trade impacts in favour of the AU-MS. Additionally, inclusion of supplementary or voluntary socio-economic requirements for the gauging of the health of fish trade in favour of the AU-MS, including e.g. community or fishery/fish trade specific metrics to measure temporal trends against a baseline standard specific to the community or region would go a long way in ensuring the AU-MS benefit fully socio-economically with prioritization of food and fish security as key metrics in the assessment. Application of such metrics to the fish trade corridor data and statistics can be used to help refine the process of the development of standard metrics.

In establishing the baseline standards against which temporal trends in the fish trade could be assessed, both absolute (e.g. fair prices of the traded fish and fish products) based region/county, in which the fishery is located would be necessary. Consequently,

the different trade corridors / fishing areas should develop tailored metrics because an absolute standard across all fish trade regions would not suffice due to variations in living costs across the regions and countries. In cases where establishment of an absolute standard is difficult, the use of a relative standard would still provide a meaningful measure, relative to similar fish trades or to itself over time e.g. the use of percentage of personal income derived from a fish trade as a metric. In this case, it would be illogical to use absolute income from the fish trade as a metric since different fisheries provide varied levels (%) of the fish trader incomes i.e. all traders cannot derive 100% of their personal annual income from a single fish business hence it is logical to assess performance relative to benchmarks e.g. if fish trader's family derives ≈60% of the family income from an activity, then any trends away from this derived metric could be an indication of changes in the socio-economic structure of the fish trade. Evidently, this calls for a more extensive and detailed survey, rather than just a desktop based analysis with short ground trothing visits to some selected AU member states

Therefore, in addition to the spatial temporal variations in the socio-economic benefits in the fishing villages and trading centres many of the AU-MS, as well as variations at the national and regional (fish corridors and trading blocs), the indicators of healthy fish trade flows would also differ from one country and region to the next, and from one fishery to another. In majority of the fisheries where the focus has been in fully exploiting the fishery resources, quick-serve options including FAAs and FPAs with DWFN has often been seen as an easy economic approach to the exploitation of the resources. However, in such scenarios, the socio-economic indicators clearly show that majority of the fishing communities and trade centre's bordering such fisheries were greatly impoverished with little to show for the blatant plundering of the coastal and marine resource neighouring the communities. This is attributed to the huge focus on export-oriented markets with a push to establish commercial fleets region/ports and export centres which only provide employment to a few casual labourers, but leak out the downstream and upstream value-chain benefits to the foreign markets where the fish and fish products are landed and sold. Consequently, the value-chain benefits evident in many small-scale fish trades, as well as in the emerging vibrant informal fish trade especially across intra-regional trade corridors, are often lacking in such export oriented fisheries and fishery markets.

5 CONCLUSIONS AND RECOMMENDATIONS

International trade in fish and fish products has increasingly become important for AU-member states especially with regards to food security and socio-economic development. However, despite the potential of both the cross-border, intra-regional and international fish trade in addressing the food and nutrition insecurity and poverty in Africa, there has been a clear lack of policy and strategic approaches. Consequently, unlike the trade in other commercial commodities such as coffee, tea, cocoa, rice and other agricultural crops, very little attention has been paid to the fish and fish product trade sector in many of the AU-MS, hence the sector has been neglected in policy and

policy frameworks development at national, regional and continental level in Africa. This neglect, has seen the sprawling growth of a largely informal fish trade at cross-border, intra-regional by small-scale traders, and even continental level. It is probably the latter that has seen the increasing illegal transshipments at sea, as well as the IUUs menace, both of which appear to have deep rooted connections in some regions such as the West Africa and North Africa region (Globefish, 2011; Greenpeace, 2015).

The importance of fisheries in achieving increased growth within the rural fishing villages cannot be understated. In cognizance of this fact, the Comprehensive Africa Agriculture Development Programme (CAADP) - Africa's policy framework for agricultural transformation, wealth creation, food security and nutrition, economic growth and prosperity made its first declaration as an as an integral part of the New Partnership for Africa's Development (NEPAD) at the African Union (AU) Summit in Maputo, Mozambique, in 2003. The declaration was affirmed by the 2010 Conference of African Ministers of Fisheries and Aquaculture (CAMFA) by the following statement:

> *"Agriculture is everyone's business: national independence depends on its development because it enables us to escape the scourge of food insecurity that undermines our sovereignty and fosters sedition; it is a driver of growth whose leverage is now acknowledged by economists and politicians; it is the sector offering the greatest potential for poverty and inequality reduction, as it provides sources of productivity from which the most disadvantaged people working in the sector should benefit."*

However, despite the focus on stimulating the development of fisheries and agriculture as avenues for sustainable development in Africa, most of the AU-MS, and especially the countries of sub-Saharan Africa have remained largely under-developed despite the huge earnings derived from exports of fish and fishery products (IMF, 2018; Comtrade, 2018; Trademap, 2018). Moreover, documentation of the socio-economic impacts of the fish trade at the cross-border, sub-regional, and continental level in Africa still remains elusive, augmented by the lack of standardized metrics for the socio-economic indicators for what could be categorized as healthy fish trade structures (pers. observ.). Future surveys should therefore standardize baselines for assessment of the socio-economic impacts of the fish and fish products trade at the continental level, and the trading communities at the village, national and regional level.

Generally, fish and fish product trade in Africa has received little attention especially at the cross-border and intra-regional level. This has encouraged growth of a sprawling informal trade within the continent, often with little/no data and documentation available for valuation and factoring into national and continental policies as shown by surveys along the fish trade corridors within the continent (Aboya, 2017; Hara *et. al.*, 2017; Hyuha *et. al.*, 2017; Meke, 2017). Therefore, it is also important to actively engage and enhance capacities, especially of the Regional Economic Communities (RECs) to support the AU-MS to better integrate the intra-regional and international fish trade into development and food security policy agendas. At the continental level,

Pan-African organizations such as the AUC and AU-IBAR should take a leading role in guiding the engagement processes and definition of the metrics for socio-economic indicators for monitoring of the fish and fish product trade impacts at the intra- and inter-regional levels. Furthermore, the development and implementation of coherent policies, standards and regulatory frameworks of at national and regional levels as well as the strengthening of the capacities of the informal fish trade sectors in an effort to 'formalize' it, is long overdue (pers. observ). Enhancing the competitiveness of small- and medium-scale fish and fish product trade which is the backbone of many coastal and riparian fishing communities is also important, with deliberate under-emphasis on export oriented trade and development.

Due to the importance of the intra-regional fish trade on food security and fish protein sufficiency (Hara *et. al.*, 2017; Hyuha *et. al.*, 2017; Meke, 2017), there is a need to strengthen capacity of fish quality inspection and veterinary services (especially for live fish and fishery products) for implementation of regional guidelines and national policies. A focus on the impacts of the fish and fish product trade flows at fishing community level should be considered in order to develop both absolute and relative metrics for indicators of the impacts of the fish trade at the community level. Such metrics should focus on the impacts of the growing fish supply gaps on fish consumption and food security of different groups, especially for coastal vulnerable and marginalized low income groups. The assessment of the impacts of growing fish supply gaps is also critical for developing guidelines and definition of good practices for intra-regional fish trade in different socio-economic groups.

Despite the threats posed by the intra-regional and international fish trade, and especially the export segment, on fish protein sufficiency and food security, fish imports, though mostly of low value bycatch, have gone a long way in alleviating the fish supply shortage especially for seafood dependent communities. A good example is Kenya's import of cheap aquaculture tilapia from China which has not only ensured a steady supply of fish within the Lake city of Kisumu, but has also fairly reduced the pressure on the already heavily exploited fish stocks of Lake Victoria. However, in some rural fishing villages such Takaungu in north coast Kenya, low cost imports of mackerels and Chinese aquaculture tilapia appears to have slowed down the growth of the small scale-artisanal fisheries in these old fishing village (pers. observ.). Consequently, if not well managed, the fish export-import trade may adversely impact the growth of small-scale fisheries, and future status of food-security, if overly dependent on the foreign imports. Furthermore, the fish and fish product trade also impacts poverty levels and fisheries management. Supporting the effort of RECs to re-align their regional and national policies and trade regulations to the changing fish export-import trade in Africa is of urgency, in order for the socio-economic benefits of the intra-regional and international fish trade to flow to the AU-MS (IMF, 2018).

Further, it is evident on top of the challenges facing many AU-MS in developing coherent policies and trade management strategies, majority of these states have not fully domesticated the many essential international protocols and agreements into the

national instruments (AU-IBAR, 2016). Consequently, a country by country in-depth review of the level of implementation of existing fish trade related frameworks and ratification and implementation of the same as an opportunity for enhancing intra- and inter-regional fish trade in the continent. There is also a need to develop monitoring and evaluation mechanisms/strategies to support the implementation and enforcement of the fish trade related agreements through appropriate systems, and emphasize the need to protect the local fisheries and aquaculture industry.

In strengthening the intra- and inter-regional fish trade, the definition and/or implementation of the One-Stop-Border-Posts (OSBPs) is critical for facilitating cross-border and regional fish trade, and increase awareness among traders and relevant stakeholders on cross-border trade procedures (Hara *et. al.*, 2017; Hyuha *et. al.*, 2017; Meke, 2017). Common standards should be implemented through harmonization of regional guidelines, and national laws and regulations with regards to fish trade with inclusion of harmonized customs and tariff schemes and fish as commodity in customs list (Hara *et. al.*, 2017). The establishment of regional and sub-regional Fish Trade Information System (FTIS portals) and strengthening of existing institutions such as INFOPECHE/INFOSA, INFOSAMAK and Enhanced Fish Market Information Services (EFMIS) should be considered as well as other towards the improvement of the fish and product trade in Africa.

Lastly, just like with the sectors, there is a need to develop/improve on the mechanisms for collection of data and information on the fish and fish products trade at the country level, as well as collation of the same into regional and continental databases ((Hara *et. al.*, 2017; Hyuha *et. al.*, 2017; Meke, 2017). This data and information is useful as a proxy to guide the strengthening of human and institutional capacity in fish quality inspection, development of infrastructure and facilities at market centres and border stations, and support the informal fish trade sector in value addition and reduction of losses. Furthermore, revenues collected from this sector can be re-channeled into development to enhance trade facilitation by reducing rent-seeking practices and malpractices at border multiple checkpoints, and roadblocks. There is also a need to implement the Minimum Integration Program (MIP); a continental framework that aims to enhance coordination, convergence and collaboration among RECs to achieve the ultimate goal of the African Economic Community.

Although there is a need to re-focus Africa on intra-regional trade, the continent cannot do without international trade owing to numerous factors such as better prices for the prime seafood such as shellfish and pelagic species such as tuna. Moreover, the international market is a source of cheaper by-catch fish and aquaculture products (especially from South East Asia). Moreover, there is a strong tie between fish trade and other commodities trade, as well as bilateral trade agreements and international relations which would prohibit the embargo on exports. For example, when Sierra Leone indefinitely banned the export of fish to forestall imminent shortage of supply to the local markets (Politico Newspaper, 2016), the country experienced severe overtures especially on the informal fish trade (Comtrade, 2018). However, Africa can reduce its

vulnerability to external shocks by boosting intra-regional trade and furthering market integration in response to the challenges facing the continent in production capacity and inability to compete effectively in international markets.

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The Observatory of Economic Complexity https://atlas.media.mit.edu/en/ *(Accessed June 5th, 2018)*

6 ANNEXES: SURVEY ITEMS FOR ATTRIBUTES IN THE FISHERIES

6.1 Annex 1: Species distribution and market chains (tentative)

Study items	Contents
Distribution infrastructure	Number, location and capacities of distribution facilities, such as landing sites/ports, cold storages, ice plants and cold storage trucks, auction markets, etc.
Distribution routes	Distribution routes of fresh fish for domestic consumption (e.g., fishers-middlemen-retailers-consumers) Distribution routes of processed fish for domestic consumption (e.g., fishers-processers-middlemen-retailers-consumers) Distribution routes of fresh fish for export (e.g., Fishers-Middlemen-Exporters-Markets abroad)
Price formation	Price formation of fish species including (Fisher prices - wholesale prices - retail prices) Price formation of important processed fish (Fisher prices - processer prices -wholesale prices – retail prices)

6.2 Annex 2: Fish species utilization & community attributes (tentative)

Survey Items	Contents
Biological attributes	Spawning seasons, areas; growth curves; migration route if any for regional species
Status of resources Fishing methods	Species; Catch; fishing grounds; fishing seasons; Cost-benefit analysis of each type of resource exploitation method used
Community characteristics	Geographical x-tics; population; number of households; number of fishing boats
Surrounding Condition	Infrastructures; markets; Source of inputs, Supply chain, Value addition chains

6.3 Annex 3: Policy and Strategy of fishery Resource Management (Tentative)

Survey Items	Contents
Management Structure	Fisheries Act & Related laws and regulations; punitive clauses; responsible authorities; surveillance system; community participation including BMUs
Resource Management Systems	Co-management; traditional resource management; coastal resource management; target species; fishing gear restriction; Cases closing season and site; catch size restriction
Issues	Technical issues; economic issues; community issues

6.4 Annex 4: Schedule of the Activities for Assessment of Impact of International Fish Trade Flows in Africa, 2017

Activity	Location	#Days	Parties / Stakeholders	Logistics	Schedule
Briefing by the AU-IBAR	Nairobi/TBA by AU-IBAR	2	Client/Consultants	Air tickets	March/ April, 2017
Consultation meetings with the relevant Authorities of the assigned AU-MS and Data Collection	Research & correspondences, travel as per AU-IBAR ToRs	10	-AU-IBAR -Fisheries Depts.; Trade Ministries; RFBOs; RECs in Morocco, Senegal, Cote d'ivoire, Kenya and Zambia	-Tickets (AU-IBAR guided) -Data /Air-time	Oct. / Nov., 2017
Preparation of Reports:-					
i). ***Report 1 draft***: Quantity & Value of fish and fish products imports/export into AU-MS	Mombasa/ Nairobi, Kenya, Research & correspondences	60 days Simultaneous	Consultant	-Literature review; Desktop analysis; field data collation	December, 2017 to March, 2018
ii). ***Report 2 draft***: Impact of fish import/export (quantity/values) on economy of AU-MS and the overall continent, and on the consumption pattern and food security;	Mombasa/ Nairobi, Kenya, Research & correspondences		Consultant	-Literature review; Desktop analysis; Field data collation	
iii). ***Report 3 draft***: Establish the consequence and influence of imported fish and fishery products on Inter- and Intra-regional trade in fish and fishery products in Africa; countries of origin/destination; Import/Export routes and methods; Compliance with licensing and WTO conditions;	Mombasa/ Nairobi, Kenya, Research & correspondences		Consultant	-Literature review; Desktop analysis; Field data collation	
iv). ***Report 4 draft***: Factors and fundamental motivating dynamics encouraging fish import/export; Economic value and	Mombasa/ Nairobi, Kenya, Research & correspondences		Consultant	-Literature review; Desktop analysis; Field data collation	

Activity	Location	#Days	Parties / Stakeholders	Logistics	Schedule
socioeconomic consequences of the trade; Action plans					
v). ***Report 5 Draft:*** comprehensive technical report on the value and socioeconomic consequences of fish importation into Africa; Advocacy paper; Main Actors of the supply chains;	Mombasa/ Nairobi, Kenya, Research & correspondences		Consultant	- Literature review; Desktop analysis; Field data collation	
vi). ***Report Draft 6 Draft***; Quantity/ Volume traded along the supply chain, species/ category; financial flows; Impacts on the local production and economies; Informal fish trade flows and associated impacts;	Mombasa/ Nairobi, Kenya, Research & correspondences		Consultant	- Literature review; Desktop analysis; Field data collation	
vii). ***Final Reports 1-6***: finalize draft documents after review and comments from the Client AU-IBAR	Nairobi, Kenya / Research & correspondences	2	Consultant	-Review & Comments -Data validation -Data / Air-time	May/June, 2018
Compile Documents as ToRs Review: - Final Technical Report (FTR)	Nairobi, Kenya/ Research & correspondences	2	Consultant	-Data / Air-time	

6.5 Annex 5: Fish Trade Survey Impacts on Africa - Field Survey Schedule 2017[1]

	Dates	From	To	Institutions to be Visited	Logistics / AU-IBAR
[2]Kenya-Morocco- Cote d'Ivoire - Senegal- Zambia - Kenya 19th November to 2nd December, 2017	19th -23rd Nov., 2017	Kenya [Mombasa]	Morocco [Casablanca]	INFOSAMAK, ATLAFCO, Ministry of Fisheries	-Air-ticket; Taxi; DSA/ Facilitation
	23rd -26th Nov., 2017	Morocco [Casablanca]	Cote d'Ivoire [Abidjan]	INFOPECHE, Ministry of Fisheries	-Air-ticket; Taxi; DSA/ Facilitation
	26th - 29th Nov., 2017	Cote d'Ivoire [Abidjan]	Senegal [Dakar]	SRFC Dakar, Senegal Min. Fisheries & Maritime Economy	-Air-ticket; Taxi; DSA/ Facilitation
	29th Nov – 2nd Dec., 2017	Senegal [Dakar]	Zambia [Lusaka]	COMESA, Lusaka Dept. of Fisheries, Mpulungu	-Air-ticket; Taxi; DSA/ Facilitation
	02nd Dec., 2017	Zambia [Lusaka]	Kenya [Mombasa]	Return	-Air-ticket; Taxi; DSA/ Facilitation

[1] Online Survey available at: http://Fish-Trade-Flows-in-Africa.speedsurvey.com

[2] Countries selected from Top Exporters and importers (Globefish, 2016; International Trade Centre www.intracen.org/marketanalysis)

6.6 Annex 6: List of Offices / Persons Contacted During the Survey

	Dates		Name of Persons contacted / Institutions
Kenya-Morocco-Cote d'Ivoire - Senegal-Zambia - Kenya 19th Nov. - 2nd Dec., 2017	10th - 14th June, 2017	Mombasa & Nairobi, Kenya	▪ Mrs. Elizabeth Mueni; Mr. Benedict Kiilu; Mr. Stephen Ndegwa - State Department of Fisheries & Blue Economy, Marine, Mombasa, Kenya ▪ Companies: Alpha Fine Foods
	15th - 18th June, 2017	Lunga-Lunga Border Post, Kwale	▪ Mr. Willie Mututa, Fish Quality Inspector, State Department of Fisheries & Blue Economy; Lunga Lunga Border post, Kenya/Tanzania
	19th - 23rd Nov., 2017	Morocco [Rabat & Casablanca]	▪ Dr. Mohammed SADIK; COMFAHAT, Rabat Morocco ▪ Dr. Aichane BOUCHTA; Director of Maritime Fisheries & Aquaculture, Rabat Morocco ▪ Mr. Ouati Youssef INFOSAMAK; Casalanca Morocco ▪ Office National Des Peche ONP, Casablanca Morocco
	23rd - 26th Nov., 2017	Cote d'Ivoire [Abidjan]	▪ EL MALAGUI MOHAMED; Directeur d'INFOPECHE Abidjan Cote d'ivoire ▪ Dr. Pagadi SORO; Scientist / Data INFOPECHE Abidjan Cote d'ivoire
	26th - 29th Nov., 2017	Senegal [Dakar]	▪ Mr. Ansou Souba BADJI ; Commissaire aux Enquêtes Economiques, Direction du Commerce Extérieur Dakar, Senegral ▪ Mrs. Marieme Diagne TALLA, SPCSRP Project Dakar, Senegal
	29th Nov – 2nd Dec., 2017	Zambia [Lusaka]	▪ Yoseph Shiferaw MAMO, AU-IBAR -VETGOV COMESA Secretariat, Lusaka, Zambia ▪ Mr. Ian HAMULEMBE; Directorate of Fisheries Mpulungu, Zambia

6.7 Annex 6: The Structured questionnaire tool employed in the current survey

Assessment International Fish Trade Flows and Impacts on Socio-economics and Food Security in Africa

Dr. Bernerd Fulanda for:
AU – IBAR, NAIROBI, KE

African Union Inter-African Bureau for Animal Resources is conducting an "***Assessment of International Fish and Fishery Products Trade Flows in Africa to Evaluate the Socioeconomic and Food Security impacts on the Continent***". Therefore, on behalf of AU-IBAR, I humbly for your participation in this survey by answering some few questions (providing data/info) on Fish and Fish Products Trade in your company/sector/country/regional trade bloc.

Your response will be combined with those of other regions under the AU-MS to understand impacts of fish importation/exportation on the ***Economies of AU-MS; Consumption patterns, Food security; influence on Inter- and Intra-regional trade in fish and fishery products; underlying factors and fundamental motivating dynamics encouraging fish importation/exportation into and out of Africa.*** The results will be compiled in report and recommendations presented to AU-IBAR for ***Development of action plans to efficiently and effectively communicate the economic value and socioeconomic consequences of fish importation to policy and decision makers to generate impactful political will*** to ***steer healthier Trade Flows for the Fish and Fish Products*** among the AU-MS and within the continent.

For additional information, please, contact Dr. Fulanda on +254-718-894-874 / Email: b.fulanda@pu.ac.ke

1. BIO-DATA / RESPONDENT

Respondent (Name/Company)		**Position in your Organization:**
Country		
Contact:		**Email:**

2. FISHERY DATA FOR FISH TRADE FLOWS IN AFRICA

2a: Production Data

Group/ Species	**Fishery** (Marine, Inland, Aquaculture), #fishers involved	**Landings (Mt)**	**Value (US$**	**Utilization patterns (%)** e.g. household consumption, Industry, feeds, losses

**add additional rows as needed, data provided in Ms. Excel or other spreadsheets would be greatly appreciated*

2b: Fishery Export Data

Group/ Species	**Destination** (Country/trade bloc)	**Quantity** (Mt)	**Value** (US$	**Drivers** e.g. Bilateral ties, Fishery Access agreements, Trade quotas, Development aid etc.

**add additional rows as needed, data provided in Ms. Excel or other spreadsheets would be greatly appreciated*

2c: Fishery Import Data

Group/ Species	**Origin** (Country/trade bloc)	**Quantity** (Mt)	**Value** (US$	**Drivers** e.g. Bilateral ties, Fishery Access agreements, Trade quotas, Development aid etc.

**add additional rows as needed, data provided in Ms. Excel or other spreadsheets would be greatly appreciated*

2d: Fishery Trade Flows and summary impacts

Group/ Species	**Origin** (Country/ trade bloc)	**Destination** (Country/ trade bloc)	**Flow route** (formal/ informal)	**Quantity** (Mt) / **Value** (US$	**Impacts** e.g. Fish availability, economies, infrastructure development, bilateral agreements for other sectors, state)

**add additional rows as needed*

3. DETAILED IMPACTS OF IMPORTED FISH AND FISHERY PRODUCTS

Item	Impact (Low to severe"	Elaborate
i) Fish Consumption patterns (species, per capita consumption etc.)	Select	(From low to severe, /don't know"
ii) Food security (quantity and quality of the imported products?)	Select	
iii) Consequence/influence on Inter regional trade in fish and fishery products in Africa	Select	
iv) Consequence/influence on Intra- regional trade in fish and fishery products in Africa	Select	
v) Influence on compliance with fish licensing/ regulations	Select	
vi) Others (type):	Select	

4. FACTORS DRIVING IMPORT/EXPORT OF FISH AND FISH PRODUCTS

Factor (List)	**Impact**	**Elaborate**
i) .	Select	
ii).	Select	
iii) .	Select	
iv) .	Select	
v).	Select	

**Use additional sheet where needed*

5. RELATIONSHIPS /INVOLVEMENT IN THE FISH EXPORT/IMPORT TRADE? (Describe level of involvement, consensus, power dynamics, government role)

Social	
Political	
Economic	
Power/Influence	

6. SUGGESTED APPROACHES TO SUPPORT FREE, FAIR & SUSTAINABLE TRADE

[What would you recommend as the Best Approach to the Options (Approaches below) to support free, fair and sustainable trade in fish and fish products (Intra- Inter-AU-MS and beyond to the International Community).

Element	**Suggested Approach**
1. Legislation / International Fisheries Instruments	
2. Public/Political support	
3. Fisheries Access / Fish Market & Trade Agreements/ Partnerships	
4. Awareness raising and support	
5. Capacity development (Processing, HACCCP etc.)	
6. Enhancing Production (Aquaculture, feeds, seed, training?)	
7. Implementation strategy for the Fish & Fish Product Trade Regulations / guidelines	
8. Monitoring and auditing of Fish and Fish Trade Flows in Africa	
9. Others (List)	

**Use additional sheet where needed*

6.8 Annex 6: Major Imports and Exports of Various African Countries (source: Centre for African Studies, Illinois)

Algeria

1. Exports: US$60.51 billion f.o.b.
   Exports - commodities: petroleum, natural gas, and petroleum products 97%
   Exports - partners: US 29.4%, Italy 13.8%, Spain 9.6%, Canada 8.4%, France 7.4%, Netherlands 5%
   Imports: US$26.25 billion f.o.b.
2. Imports - commodities: capital goods, foodstuffs, consumer goods
   Imports - partners: France 18.7%, China 9%, Italy 8.5%, Spain 6%, US 5.5%, Germany 5.3%, Russia 4.6%, Turkey 4.1%

Angola

1. Exports: US$67.2 billion
   Exports - commodities: crude oil, diamonds, refined petroleum products, coffee, sisal, fish and fish products, timber, cotton
   Exports - partners: China 32.7%, US 26.7%, South Africa 9.6%, France 5.5%
2. Imports: US$17.08 billion
   Imports - commodities: machinery and electrical equipment, vehicles and spare parts; medicines, food, textiles, military goods
   Imports - partners: Portugal 19.3%, China 14.7%, US 12.3%, Brazil 8.3%, South Africa 5.4%, France 4.3%

Benin

1. Exports: US$894 million
   Exports - commodities: cotton, cashews, shea butter, textiles, palm products, seafood
   Exports - partners: China 19.7%, Japan 8.9%, India 6.3%, Niger 5.1%, US 4.9%, Nigeria 4.5%, Togo 4.2%
2. Imports: US$1.399 billion
   Imports - commodities: foodstuffs, capital goods, petroleum products
   Imports - partners: China 39.8%, US 14%, Thailand 6.9%, France 6.9%, Malaysia 4.2%

Botswana

1. Exports: US$4.904 billion
   Exports - commodities: diamonds, copper, nickel, soda ash, meat, textiles
2. Imports: US$4.463 billion
   Imports - commodities: foodstuffs, machinery, electrical goods, transport equipment, textiles, fuel and petroleum products, wood and paper products, metal and metal products

Burkina Faso

1. Exports: US$544 million
   Exports - commodities: cotton, livestock, gold
   Exports - partners: Singapore 16.9%, China 16%, Belgium 12.9%, Thailand 9.1%, Ghana 7%, Niger 5.2%, Denmark 4.9%
2. Imports: US$1.343 billion
   Imports - commodities: capital goods, foodstuffs, petroleum
   Imports - partners: Cote d'Ivoire 26.4%, France 18.2%, Togo 7.3%, Libya 4.2%

Burundi

1. Exports: US$79 million
   Exports - commodities: coffee, tea, sugar, cotton, hides
   Exports - partners: Japan 22.3%, Germany 14.4%, Pakistan 7.5%, Rwanda 4.7%, Sudan 4.4%
2. Imports: US$350 million
   Imports - commodities: capital goods, petroleum products, foodstuffs
   Imports - partners: Saudi Arabia 18.3%, Kenya 10.7%, Belgium 7.9%, France 5.8%, Uganda 5.1%, China 4.9%, India 4.5%, Germany 4.3%

Cameroun

1. Exports: US$4.816 billion
   Exports - commodities: crude oil and petroleum products, lumber, cocoa beans, aluminum, coffee, cotton
   Exports - partners: Spain 18.7%, Italy 12.7%, US 10%, South Korea 9.3%, France 7.7%, Netherlands 7.6%, China 5.3%
2. Imports: US$4.303 billion
   Imports - commodities: machinery, electrical equipment, transport equipment, fuel, food
   Imports - partners: France 21.6%, Nigeria 14.2%, China 9.2%, Belgium 6.2%

Cabo Verde

1. Exports: US$99 million
   Exports - commodities: fuel, shoes, garments, fish, hides
   Exports - partners: Japan 37.8%, Spain 28.7%, Portugal 17.7%
2. Imports: US$866 million
   Imports - commodities: foodstuffs, industrial products, transport equipment, fuels
   Imports - Partners : Portugal 39.5%, Netherlands 11.4%, Spain 6.5%, UK 6.3%, Cote d'Ivoire 4.4%, Brazil 4%

Central African Republic

1. Exports: US$146.7 million
   Exports - commodities: diamonds, timber, cotton, coffee, tobacco

Exports - partners: Japan 43.2%, Belgium 10.4%, China 8.3%, Indonesia 6%, France 4.7%, Italy 4.3%, Democratic Republic of the Congo 4.3%

2. Imports: US$237.3 million
   Imports - commodities: food, textiles, petroleum products, machinery, electrical equipment, motor vehicles, chemicals, pharmaceuticals
   Imports - partners: France 17.3%, Cameroon 9.8%, Netherlands 7.3%, US 6.7%

Chad

1. Exports: US$4.502 billion
   Exports - commodities: oil, cattle, cotton, gum Arabic
   Exports - partners: US 90.7%, China 3.3%, Japan 2.2%
2. Imports: US$1.862 billion
   Imports - commodities: machinery and transportation equipment, industrial goods, foodstuffs, textiles
   Imports - partners: France 19.2%, Cameroon 16.2%

Comoros

1. Exports: US$32 million
   Exports - commodities: vanilla, ylang-ylang (perfume essence), cloves, copra
   Exports - partners: France 30.5%, Turkey 17.2%, Greece 10.6%, Brazil 10%, Singapore 7.7%, Saudi Arabia 4.9%, India 4.3%
2. Imports: US$143 million
   Imports - commodities: rice and other foodstuffs, consumer goods, petroleum products, cement, transport equipment
   Imports - partners: Brazil 13.5%, France 13.2%, China 10.5%, UAE 9.2%, South Africa 6.1%, Italy 5.3%, Pakistan 5.3%, Singapore 4.2%, Kenya 4.2%

Congo, Dem Rep

1. Exports: US$6.1 billion
   Exports - commodities: diamonds, gold, copper, cobalt, wood products, crude oil, coffee
   Exports - partners: China 44.7%, Belgium 16.9%, Finland 10.5%, US 8.9%, Zambia 4.8%
2. Imports: $ US$.2 billion
   Imports - commodities: foodstuffs, mining and other machinery, transport equipment, fuels
   Imports - partners: South Africa 22.1%, Belgium 11.5%, Zambia 8.3%, Zimbabwe 7%, Kenya 5.9%, China 5.6%, France 5.4%

Cote D'ivoire

1. Exports: $10.41 billion

Exports - commodities: cocoa, coffee, timber, petroleum, cotton, bananas, pineapples, palm oil, fish

Exports - partners: Germany 11.1%, US 10.3%, Netherlands 9.9%, Nigeria 9.4%, France 6.5%, Burkina Faso 4.1%

2. Imports: US$7.155 billion

Imports - commodities: fuel, capital equipment, foodstuffs

Imports - partners: Nigeria 32%, France 15.1%, China 7.8%

Djibouti

1. Exports: US$340 million

Exports - commodities: re-exports, hides and skins, coffee (in transit)

Exports - partners: Somalia 64.6%, Ethiopia 20.9%, UAE 3.3%

2. Imports: US$1.555 billion

Imports - commodities: foods, beverages, transport equipment, chemicals, petroleum products

Imports - partners: Saudi Arabia 22.1%, India 16.6%, China 9.1%, US 6.5%, Malaysia 4.5%, Ethiopia 4.3%

Egypt

1. Exports: US$24.45 billion f.o.b.

Exports - commodities: crude oil and petroleum products, cotton, textiles, metal products, chemicals

Exports - partners: US 9.7%, Italy 9.5%, Spain 7.6%, Syearia 5.5%, Saudi Arabia 4.9%, UK 4.2%

2. Imports: US$44.95 billion f.o.b.

Imports - commodities: machinery and equipment, foodstuffs, chemicals, wood products, fuels

Imports - partners: US 11.7%, China 9.7%, Italy 6.4%, Germany 6.3%, Saudi Arabia 4.7%, Russia 4.3%

Equatorial Guinea

1. Exports: US$13.04 billion

Exports - commodities: petroleum, methanol, timber, cocoa

Exports - partners: US 24%, Spain 19.3%, China 16.2%, France 8.4%, Italy 6.3%

2. Imports: US$3.156 billion

Imports - commodities: petroleum sector equipment, other equipment

Imports - partners: Spain 15.2%, US 13.4%, France 12.4%, Cote d'Ivoire 11.9%, China 10.4%, Italy 6.3%, UK 5.8%

Eritrea

1. Exports: US$13 million

Exports - commodities: livestock, sorghum, textiles, food, small manufactures
Exports - partners: India 31.7%, Italy 18.6%, Kenya 11.9%, China 11.5%, France 5.4%

2. Imports: US$601 million
   Imports - commodities: machinery, petroleum products, food, manufactured goods
   Imports - partners: Italy 16.9%, UAE 15.7%, China 13%, India 9.4%, US 6.7%, Germany 6%, Turkey 5%

Ethiopia

1. Exports: US$1.55 billion
   Exports - commodities: coffee, qat, gold, leather products, live animals, oilseeds
   Exports - partners: US 10.1%, Germany 10%, Saudi Arabia 7.6%, Netherlands 7.1%, Djibouti 6.5%, Italy 5.6%, China 4.9%
2. Imports: US$6.901 billion
   Imports - commodities: food and live animals, petroleum and petroleum products, chemicals, machinery, motor vehicles, cereals, textiles
   Imports - partners: China 19.5%, Saudi Arabia 17.9%, India 7.2%, US 5%, Italy 4.4%

Gabon

1. Exports: US$9.333 billion
   Exports - commodities: crude oil 70%, timber, manganese, uranium (2001)
   Exports - partners: US 25.4%, China 17.9%, Japan 10.2%, Malaysia 5.8%, France 5.4%, Spain 4%
2. Imports: US$2.577 billion
   Imports - commodities: machinery and equipment, foodstuffs, chemicals, construction materials
   Imports - partners: France 32.1%, US 11.1%, China 5.2%, Belgium 4.6%, Cameroon 4.4%, Netherlands 4.2%

Gambia, The

1. Exports: US$85 million
   Exports - commodities: peanut products, fish, cotton lint, palm kernels, re-exports
   Exports - partners: India 32.4%, Japan 22.2%, China 10.7%, Belgium 5.5%, UK 4.7%
2. Imports: US$299 million
   Imports - commodities: foodstuffs, manufactures, fuel, machinery and transport equipment
   Imports - partners: China 22.7%, Senegal 11.7%, Cote d'Ivoire 8.4%, Brazil 7.4%, Netherlands 4.9%

Ghana

1. Exports: US$5.245 billion

Exports - commodities: gold, cocoa, timber, tuna, bauxite, aluminum, manganese ore, diamonds, horticulture

Exports - partners: Netherlands 15.3%, UK 9.1%, France 6.5%, US 5.8%

2. Imports: US$10.24 billion

Imports - commodities: capital equipment, petroleum, foodstuffs

Imports - partners: China 15.9%, Nigeria 15.8%, US 5.9%, France 4.7%, UK 4.7%

Guinea

1. Exports: US$1.392 billion

Exports - commodities: bauxite, alumina, gold, diamonds, coffee, fish, agricultural products

Exports - partners: Spain 11.6%, Russia 11%, Ukraine 9.7%, Germany 7.7%, South Korea 7.2%, US 6.7%, China 5.6%, Ireland 4.8%, France 4.8%

2. Imports: US$1.388 billion

Imports - commodities: petroleum products, metals, machinery, transport equipment, textiles, grain and other foodstuffs

Imports - partners: China 10.3%, France 7.8%, Netherlands 7.6%

Guinea-Bissau

1. Exports: US$133 million

Exports - commodities: cashew nuts, shrimp, peanuts, palm kernels, sawn lumber

Exports - partners: India 74.8%, Nigeria 20.5%, Pakistan 0.7%

2. Imports: US$200 million

Imports - commodities: foodstuffs, machinery and transport equipment, petroleum products

Imports - partners: Portugal 24.6%, Senegal 17.3%, Pakistan 4.8%, France 4.6%, Cuba 4%

Kenya

1. Exports: US$4.958 billion

Exports - commodities: tea, horticultural products, coffee, petroleum products, fish, cement

Exports - partners: Uganda 16.4%, UK 9.1%, Netherlands 8.3%, Tanzania 7.9%, US 5.8%, Pakistan 5.1%

2. Imports: US$11.07 billion

Imports - commodities: machinery and transportation equipment, petroleum products, motor vehicles, iron and steel, resins and plastics

Imports - partners: UAE 12.5%, China 10.5%, Saudi Arabia 8.7%, India 8.3%, South Africa 6.6%, Japan 5.6%, US 4.2%

Lesotho

1. Exports - commodities: manufactures 75% (clothing, footwear, road vehicles), wool and mohair, food and live animals
   Exports - partners: US 93.6%, Madagascar 1.7%, Canada 1.5%
2. Imports: US$1.882 billion
   Imports - commodities: food; building materials, vehicles, machinery, medicines, petroleum products
   Imports - partners: China 31.1%, Taiwan 23.5%, Hong Kong 19.4%, India 13.8%, Germany 5.2%

Liberia

1. Exports: US$1.197 billion
   Exports - commodities: rubber, timber, iron, diamonds, cocoa, coffee
   Exports - partners: Malaysia 38.2%, US 15.9%, Poland 12.3%, Germany 9%, Belgium 6%
2. Imports: US$7.143 billion
   Imports - commodities: fuels, chemicals, machinery, transportation equipment, manufactured goods; foodstuffs
   Imports - partners: South Korea 27.5%, Singapore 25.2%, Japan 11.6%, China 11.2%

Libya

1. Exports: US$42.97 billion f.o.b.
   Exports - commodities: crude oil, refined petroleum products, natural gas, chemicals
   Exports - partners: Italy 40.5%, Germany 12.2%, US 7.4%, Spain 7.4%, France 6.3%
2. Imports: US$14.43 billion f.o.b.
   Imports - commodities: machinery, semi-finished goods, food, transport equipment, consumer products
   Imports - partners: Italy 18.9%, Germany 7.7%, China 7.3%, Tunisia 6.8%, France 5.7%, Turkey 5.4%, US 4.3%

Madagascar

1. Exports: US$1.155 billion
   Exports - commodities: coffee, vanilla, shellfish, sugar, cotton cloth, chromite, petroleum products
   Exports - partners: France 28.8%, US 23.7%, Netherlands 7%, Germany 6.3%, China 4.8%
2. Imports: US$2.419 billion
   Imports - commodities: capital goods, petroleum, consumer goods, food
   Imports - partners: China 16.3%, France 12.1%, Iran 8.3%, South Africa 6%, Mauritius 4.3%

Malawi

1. Exports: US$830 million
   Exports - commodities: tobacco 53%, tea, sugar, cotton, coffee, peanuts, wood products, apparel
   Exports - partners: South Africa 10.8%, Egypt 9.8%, Zimbabwe 8.7%, US 7.4%, Netherlands 7%, Russia 5.8%, Germany 5.7%
2. Imports: US$1.587 billion
   Imports - commodities: food, petroleum products, semi-manufactures, consumer goods, transportation equipment
   Imports - partners: South Africa 35.7%, India 8.1%, China 7.2%, Tanzania 5.8%, US 4.5%

Mali

1. Exports: US$830 million
   Exports - commodities: tobacco 53%, tea, sugar, cotton, coffee, peanuts, wood products, apparel
   Exports - partners: South Africa 10.8%, Egypt 9.8%, Zimbabwe 8.7%, US 7.4%, Netherlands 7%, Russia 5.8%, Germany 5.7%
2. Imports: $1.587 billion
   Imports - commodities: food, petroleum products, semi-manufactures, consumer goods, transportation equipment
   Imports - partners: South Africa 35.7%, India 8.1%, China 7.2%, Tanzania 5.8%, US 4.5%

Mauritania

1. Exports: US$1.395 billion
   Exports - commodities: iron ore, fish and fish products, gold, copper, petroleum
   Exports - partners: China 39.9%, France 10.4%, Spain 7.1%, Italy 7%, Netherlands 5.5%, Belgium 4.8%, Cote d'Ivoire 4.1%
2. Imports: US$1.475 billion
   Imports - commodities: machinery and equipment, petroleum products, capital goods, foodstuffs, consumer goods
   Imports - partners: France 16.3%, China 8.4%, Netherlands 6.2%, Spain 5.9%, Belgium 5.2%, US 4.9%, Brazil 4.4%

Mauritius

1. Exports: US$2.231 billion f.o.b.
   Exports - commodities: clothing and textiles, sugar, cut flowers, molasses, fish
   Exports - partners: UK 35.1%, France 14.4%, US 7.7%, Madagascar 6.3%, Italy 5.8%
2. Imports: US$3.656 billion f.o.b.
   Imports - commodities: manufactured goods, capital equipment, foodstuffs, petroleum products, chemicals

Imports - partners: India 21.2%, China 11.4%, France 10.7%, South Africa 7.4%

Morocco

1. Exports: US$12.75 billion f.o.b.
   Exports - commodities: clothing and textiles, electric components, inorganic chemicals, transistors, crude minerals, fertilizers (including phosphates), petroleum products, citrus fruits, vegetables, fish
   Exports - partners: Spain 21.2%, France 19%, Italy 4.9%, UK 4.6%, India 4.2%
2. Imports: US$28.5 billion f.o.b.
   Imports - commodities: crude petroleum, textile fabric, telecommunications equipment, wheat, gas and electricity, transistors, plastics
   Imports - partners: France 16.1%, Spain 13.6%, China 7.3%, Italy 6.7%, Saudi Arabia 6.4%, Germany 5.9%, US 4.5%, Netherlands 4.1%

Mozambique

1. Exports: US$2.412 billion f.o.b.
   Exports - commodities: aluminum, prawns, cashews, cotton, sugar, citrus, timber; bulk electricity
   Exports - partners: Italy 19.4%, Belgium 18.4%, Spain 12.5%, South Africa 12.3%, UK 7.3%, China 4.1%
2. Imports: US$2.811 billion f.o.b.
   Imports - commodities: machinery and equipment, vehicles, fuel, chemicals, metal products, foodstuffs, textiles
   Imports - partners: South Africa 36.7%, Australia 8.5%, China 4.6%

Namibia

1. Exports: US$2.919 billion f.o.b.
   Exports - commodities: diamonds, copper, gold, zinc, lead, uranium; cattle, processed fish, karakul skins
   Exports - partners: South Africa 33.4%, US 4%
2. Imports: US$3.091 billion f.o.b.
   Imports - commodities: foodstuffs; petroleum products and fuel, machinery and equipment, chemicals
   Imports - partners: South Africa 85.2%, US 11.0%

Niger

1. Exports: US$428 million
   Exports - commodities: uranium ore, livestock, cowpeas, onions
   Exports - partners: Japan 80.4%, Nigeria 8.5%, France 2.9%
2. Imports: US$800 million
   Imports - commodities: foodstuffs, machinery, vehicles and parts, petroleum, cereals

Imports - partners: France 19.4%, Nigeria 8.6%, China 8.5%, French Polynesia 7.6%, Belgium 5%, Cote d'Ivoire 4.9%

Nigeria

1. Exports: US$61.79 billion f.o.b.
   Exports - commodities: petroleum and petroleum products 95%, cocoa, rubber
   Exports - partners: US 51.6%, Brazil 8.9%, Spain 7.7%
2. Imports: US$38.5 billion f.o.b.
   Imports - commodities: machinery, chemicals, transport equipment, manufactured goods, food and live animals
   Imports - partners: China 10.6%, Netherlands 7.9%, US 7.8%, South Korea 6.6%, UK 5.7%, France 4.3%, Brazil 4.2%, Germany 4.1%

Rwanda

1. Exports - commodities: coffee, tea, hides, tin ore
   Exports - partners: China 9.1%, Thailand 8.8%, Germany 7.5%, US 4.6%, Belgium 4.2%
2. Imports: US$809 million
   Imports - commodities: foodstuffs, machinery and equipment, steel, petroleum products, cement and construction material
   Imports - partners: Kenya 17.1%, China 6.2%, Uganda 6%, Belgium 5.9%, Germany 5.1%

Sao Tome and Principe

1. Exports: US$9 million f.o.b.
   Exports- commodities - cocoa 80%, copra, coffee, palm oil
   Exports - partners: Netherlands 23.7%, Belgium 23.7%, France 12.9%, US 5.9%, Portugal 4.1%
2. Imports : US$66 million f.o.b.
   Imports - commodities: machinery and electrical equipment, food products, petroleum products
   Imports - partners: Portugal 62.2%, US 11.6%, Gabon 4.5%

Senegal

1. Exports: US$1.65 billion f.o.b.
   Exports - commodities: fish, groundnuts (peanuts), petroleum products, phosphates, cotton
   Exports - partners: Mali 18.9%, France 9.1%, Italy 5.9%, India 5.7%, Gambia, The 5.2%
2. Imports: US$3.731 billion f.o.b.
   Imports - commodities: food and beverages, capital goods, fuels
   Imports - partners: France 22.2%, Netherlands 10%, China 7.4%, UK 6.2%, Thailand 5.2%, Belgium 4.5%

Seychelles

1. Exports - commodities: canned tuna, frozen fish, cinnamon bark, copra, petroleum products (re-exports)
   Exports - partners: UK 22.1%, France 20%, Mauritius 10.5%, Japan 8.3%, Italy 8.1%, Netherlands 6.3%, Spain 4%
2. Imports: $882 million
   Imports - commodities: machinery and equipment, foodstuffs, petroleum products, chemicals
   Imports - partners: Saudi Arabia 18.3%, Singapore 12.9%, France 10.8%, Spain 8.5%, Germany 7.4%, South Africa 5.7%

Sierra Leone

1. Exports: US$216 million
   Exports - commodities: diamonds, rutile, cocoa, coffee, fish
   Exports - partners: Belgium 41%, US 23.2%, France 5.7%, Netherlands 4.3%
2. Imports: US$560 million
   Imports - commodities: foodstuffs, machinery and equipment, fuels and lubricants, chemicals
   Imports - partners: China 10.5%, Cote d'Ivoire 8.9%, US 7.9%, Belgium 6.7%, UK 6.7%, Thailand 5.2%, India 4.2%

South Africa

1. Exports: US$76.19 billion f.o.b.
   Exports - commodities: gold, diamonds, platinum, other metals and minerals, machinery and equipment
   Exports - partners: US 11.9%, Japan 11.1%, Germany 8%, UK 7.7%, China 6.6%, Netherlands 4.5%
2. Imports: US$81.89 billion f.o.b.
   Imports - commodities: machinery and equipment, chemicals, petroleum products, scientific instruments, foodstuffs
   Imports - partners: Germany 10.9%, China 10%, Spain 8.2%, US 7.2%, Japan 6.1%, UK 4.5%, Saudi Arabia 4.2%

Sudan

1. Exports: US$12.15 billion
   Exports - commodities: oil and petroleum products; cotton, sesame, livestock, groundnuts, gum arabic, sugar
   Exports - partners: China 56.3%, Japan 30%, Indonesia 4.9%
2. Imports: $9.339 billion

Imports - commodities: foodstuffs, manufactured goods, refinery and transport equipment, medicines and chemicals, textiles, wheat
Imports - partners: China 24.9%, Saudi Arabia 8%, UAE 5.9%, India 5.8%, Egypt 5.3%

Swaziland

1. Exports: US$1.926 billion f.o.b.
   Exports - commodities: soft drink concentrates, sugar, wood pulp, cotton yarn, refrigerators, citrus and canned fruit
   Exports - partners: South Africa 59.7%, EU 8.8%, US 8.8%, Mozambique 6.2%
2. Imports: US$1.914 billion f.o.b.
   Imports - commodities: motor vehicles, machinery, transport equipment, foodstuffs, petroleum products, chemicals
   Imports - partners: South Africa 95.6%, EU 0.9%, Japan 0.9%

Tanzania

1. Exports: US$2.413 billion
   Exports - commodities: gold, coffee, cashew nuts, manufactures, cotton
   Exports - partners: India 10.1%, China 7.2%, Japan 6.4%, UAE 5.6%, Netherlands 5.4%, Germany 5%
2. Imports: US$6.259 billion
   Imports - commodities: consumer goods, machinery and transportation equipment, industrial raw materials, crude oil
   Imports - partners: China 14.5%, South Africa 7.3%, Kenya 7.2%, India 6.3%, UAE 6.1%

Togo

1. Exports: US$782 million
   Exports - commodities: re-exports, cotton, phosphates, coffee, cocoa
   Exports - partners: Ghana 14.3%, Burkina Faso 12.4%, Germany 11%, Benin 7.8%, Brazil 5.6%, Belgium 5.4%, Mali 5%, Netherlands 4.8% (2008)
2. Imports: US$1.549 billion
   Imports - commodities: machinery and equipment, foodstuffs, petroleum products
   Imports - partners: China 39.1%, Netherlands 7.9%, France 7.2%, Thailand 5.1%

Tunisia

1. Exports: US$15.15 billion f.o.b.
   Exports - commodities: clothing, semi-finished goods and textiles, agricultural products, mechanical goods, phosphates and chemicals, hydrocarbons, electrical equipment
   Exports - partners: France 31.3%, Italy 21%, Germany 8.5%, Spain 5.5%, Libya 5.5%
2. Imports: US$18.02 billion f.o.b.

Imports - commodities: textiles, machinery and equipment, hydrocarbons, chemicals, foodstuffs

Imports - partners: France 23.8%, Italy 21.9%, Germany 9.7%, Spain 5%, Libya 4.4%

Uganda

1. Exports: US$1.686 billion f.o.b.

   Exports - commodities: coffee, fish and fish products, tea, cotton, flowers, horticultural products; gold

   Exports - partners: Netherlands 10.2%, Belgium 9.8%, Germany 7.9%, France 7.2%, Rwanda 5.6%
2. Imports: US$2.983 billion f.o.b.

   Imports - commodities: capital equipment, vehicles, petroleum, medical supplies; cereals

   Imports - partners: Kenya 31.8%, China 7.8%, UAE 7.7%, South Africa 5.9%, India 5.2%, Japan 4.8%

Zambia

1. Exports: US$4.818 billion

   Exports - commodities: copper/cobalt 64%, cobalt, electricity; tobacco, flowers, cotton

   Exports - partners: Switzerland 36.2%, South Africa 10.5%, China 8.1%, Democratic Republic of the Congo 5%, Saudi Arabia 4.9%, Egypt 4.7%, Italy 4.3%
2. Imports: US$4.694 billion

   Imports - commodities: machinery, transportation equipment, petroleum products, electricity, fertilizer; foodstuffs, clothing

   Imports - partners: South Africa 49.3%, China 8.2%, UAE 7.9%, India 4.4%

Zimbabwe

1. Exports - commodities: platinum, cotton, tobacco, gold, ferroalloys, textiles/clothing

   Exports - partners: South Africa 36.1%, Democratic Republic of the Congo 8.9%, Botswana 8%, China 5.5%, Zambia 4.4%, Japan 4.1%, Italy 4.1%
2. Imports: US$1.915 billion

   Imports - commodities: machinery and transport equipment, other manufactures, chemicals, fuels

   Imports - partners: South Africa 52.2%, China 7%, Botswana 4.5%

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