



**Standing Committee
for Economic and Commercial Cooperation
of the Organization of Islamic Cooperation (COMCEC)**

COMCEC

Analysis of Agri-Food Trade Structures To Promote Agri-Food Trade Networks In the Islamic Countries



**COMCEC COORDINATION OFFICE
September 2018**



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ABBREVIATIONS

Agropole	Economic Program of Spatial Planning for the Promotion of Medium and Large Enterprises in the Rural Sector in Cameroon
ASYCUDA	Automated System for Customs Data
AVC-DP	Cameroonian Agricultural Value Chain Development Project
BAB	Bangladesh Accreditation Board
BAEC	Bangladesh Atomic Energy Commission
BCSIR	Bangladesh Centre for Scientific and Industrial Research
BFSA	Bangladesh Food Safety Authority
BSTI	Bangladesh Standards and Testing Institution
CAADP	Comprehensive Africa Agriculture Development Program
CEMAC	Central African Economic and Monetary Community
CFTA	Continental Free Trade Area
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
EPA	Economic Partnership Agreement
FAO	Food and Agriculture Organization
FIQC	Bangladesh Fisheries Inspection & Quality Control
FTA	Free Trade Agreement
GAP	Good Agricultural Practice
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GESP	Cameroonian Growth and Employment Strategy Paper
Gis	Geographical Indications
ICR	Implementation Completion Report
INORPI	Tunisian National Institute for Standardization and Industrial Property
ITC	International Trade Center
MFN	Most Favoured Nation
MINADER	Ministry of Agriculture and Rural Development of Cameroon
MRA	Mutual Recognition Agreement
MRL	Maximum Residue Level
MVA	Manufacturing Value Added
NCCB	National Coffee and Cocoa Board
NTMs	Non-Tariff Measures
PACA	Agricultural Competitiveness Improvement Project of Cameroon
PLANUT	Three-Year Emergency Plan Project of Cameroon
PRODEL	Livestock Development Project by the Government of Cameroon
RCA	Revealed Comparative Advantage
RECs	Regional Economic Communities
RTA	Regional Trade Agreement
SITC	Standard International Trade Classification Revision

SMIIC	Standards and Metrology Institute for the Islamic Countries
SPS	Sanitary and Phyto-Sanitary (measures)
TBT	Technical Barriers to Trade
TPS	Trade Preferential System
TRAINS	UNCTAD's Trade Analysis Information System
TRCA	Theoretical Revealed Comparative Advantage
UNCTAD	United Nations Conference on Trade and Development
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
VAT	Value Added Tax
WITS	World Integrated Trade Solution
WTO	World Trade Organization

EXECUTIVE SUMMARY

Agriculture is a major source of employment and income in many parts of the world. The sector as a proportion of Gross Domestic Product (GDP) tends to decline as per capita incomes rise and resources shift into manufacturing and services. But for developing countries, particularly those in the low and lower middle income groups, agriculture is still a vital sector from the perspectives of growth and poverty reduction. OIC member countries are no exception: agriculture can account for significant proportions of GDP and employment in some countries.

Despite the importance of the sector, global agricultural markets remain significantly more distorted than markets for manufactured goods. In part, this is a legacy of the fact that the General Agreement on Tariffs and Trade (GATT) and its successive rounds of trade liberalization largely excluded agriculture until the Uruguay Round, which started in the 1980s. Nonetheless, agricultural products remain important sources of export income in many developing countries. Unlocking the potential of the agricultural sector, including through the development of international linkages, is crucial for growth and development, particularly in low and middle income countries, but is also vital for social welfare in higher income countries without large reserves of domestic arable land or water.

Since its inclusion in the World Trade Organization (WTO) Agreements, agriculture has undergone substantial liberalization worldwide. As a result, trade flows have increased substantially in value over time. OIC member countries do not stand apart from this development, but indeed are intricately involved in it. A diverse organization like the OIC brings together countries that are both net exporters and net importers of key agricultural products, and as such has the potential to help promote further mutually beneficial trade integration.

The overall objective of this study is to review global and regional agri-food trade and to analyze the global and regional agri-food trade networks in OIC Member Countries. It is also intended to identify and elaborate options for policy recommendations on challenges and opportunities for inclusive and sustainable agri-food trade networks among the OIC Member Countries.

The study combines quantitative and qualitative methodologies to produce a detailed analysis of trade networks in agricultural products as they involve OIC member countries. It is necessarily wide-ranging in its consideration of data, but often very precise in its treatment of individual countries and products. Nonetheless, the study's key general findings can be summarized as follows:

1. Global agricultural markets remain more distorted than global markets for manufactured goods, as evidenced by higher average levels of trade costs. Tariffs are a driving force behind this, but Non-Tariff Measures (NTMs) also play a key role in keeping trade costs high.
2. Notwithstanding these distortions, trade in agricultural products has seen substantial growth since 1995. Nonetheless, market distortions hold back trade growth, which poses substantial development challenges for countries that are relatively dependent on agricultural exports, in particular low and middle income countries.
3. Although trade in agricultural products has been growing within the OIC over recent years, the proportion of world trade accounted for by OIC countries remains relatively small. In 1995, OIC countries accounted for 6.7% of global exports; by 2016, that

proportion had increased to 8.0%. Consistent with this result, OIC exports grew at an average annualized rate of 5.9% over that time period, compared with 5.0% for non-OIC exports.

4. Both at the global level and within the OIC, trade networks in agricultural products have a strong intra-regional dimension. Trade costs, including those due to geography, are an important determinant of this outcome. Over time, inter-regional links are becoming more important in some cases, but there is significant variation by product. However, there is also an important degree of cross-sectoral heterogeneity at play, so the degree of concentration or dispersion in a network depends in part on product characteristics.
5. Regional trade agreements (RTAs) play an important role in promoting this intra-regional dynamic, but the effect varies markedly across regions, time periods, and product groups. Nonetheless, there is evidence that preferential margins are substantial, and much of world trade in agricultural products—and intra-OIC trade—takes place within RTAs.
6. Agreements with neighboring regions, such as the EU, are likely also a significant driver of growth in extra-OIC trade in agricultural products. For African countries, Regional Economic Communities (RECs) also play a significant role, as they shape both trade and agricultural policies on a regional level.
7. It is difficult to talk about a single OIC trade network in agricultural products because of strong regional dynamics just referred to. Rather there are largely separate networks within the OIC based on intra-regional trade. Moreover, the characterization of OIC trade networks in this sector is difficult because of the very important role played by extra-OIC trade for many countries and products.
8. From a policy perspective, it is not a negative feature of intra-OIC trade that clear networks do not emerge from the data in some cases. Trade flows are the result of a complex interplay between policy, geography, and productivity (comparative advantage). In some cases, this interplay displays distinct characteristics—such as the role of Turkey and Saudi Arabia as hub countries for some products. But in other cases, trade links are relatively dispersed due to the tendency for agricultural trade to be in dissimilar goods (exploiting geographical differences), and influenced by trade policies including regional and cross-regional trade agreements.
9. There is evidence that most regions—both within and outside the OIC—are becoming more geographically diversified in their export patterns. This is another reason why simplistic network analysis is not appropriate for this sector. Rather, it is important to look at evolving dynamics, and to recognize the importance of market potential both inside and outside particular groupings. There is a clear movement in the agricultural sector towards trading with more distant partners, and this movement is likely to intensify as mega-regional and cross-regional trade agreements become more common.
10. Reference to a measure like Theoretical Revealed Comparative Advantage (TRCA) can help policymakers identify potential growth sectors, and the report contains detailed information on this measure, which is highly country and product specific. It is a more

reliable measure of export potential than, for example, recent patterns in the net balance of trade at the product level.

11. Given the importance of NTMs in the agricultural sector, a key issue for countries developing an export base is quality and certification. OIC members deal with this issue in different ways, but there is a clear movement towards supporting national quality infrastructure, including in areas like halal certification, although the movement is not yet universal.

Although this report deals with data and qualitative information in a highly specific way, at the level of individual countries and products, it is not appropriate to make recommendations at the same level because they would not be broadly applicable to OIC's membership. Rather, it is most useful to focus on areas of strategy and policy that can be of some relevance to all members across regional groupings and income levels. Based on the findings above, it is possible to distill a number of feasible recommendations for the consideration of OIC member countries:

1. **Collaborative policy liberalization:** OIC member countries should continue to work with organizational and regional partners, as well as other willing parties, to progressively liberalize agricultural policies at the multilateral level. Pushing for liberalization within the multilateral system is a long-term goal, and one that limits the potential for trade diversion that can arise from the use of preferences or regional agreements. Member countries should also give further consideration to unilateral liberalization of agricultural policies on a Most-Favored Nation (MFN) basis, consistent with the evidence produced in the report that MFN tariffs have been becoming less restrictive over time, even though no negotiations have been concluded on agriculture since the end of the Uruguay Round in 1994.
2. **Look Beyond Traditional Trade Policies:** Both the data analysis and case studies have shown that the pattern of bilateral trade is a complex interplay of a number of different economic forces. But a major factor is connectivity. This is all the more true in emerging agricultural product sectors like fresh fruits and vegetables, and fish, where cold chain storage is important. There is evidence that some OIC member countries have strong comparative advantages in these sectors. To take advantage of them, however, they need to develop high quality transport connections with consumer markets. Trade agreements often do not address such issues, but broader economic cooperation programs can. Developing connectivity is one way of reducing trade costs in agricultural markets, in addition to lowering tariffs and rationalizing NTMs.
3. **Regional integration and preferences:** Member countries should continue their work to develop and implement a preferential market access scheme, as well as to conclude more intra- and cross-regional trade agreements, as a second best policy option when multilateral liberalization is not available. This approach can help member countries benefit from the strong intra-regional dynamic of agricultural trade by combining with regional partners to liberalize trade on a preferential basis. Most intra-OIC trade already takes place on a preferential basis, but the number and scope of agreements can be widened to include more countries. In addition, trade agreements should be regularly re-inspected for additional areas that can be covered, such as NTMs, including trade facilitation, quality and certification, mutual recognition, and capacity development, in addition to just liberalizing tariffs.

4. **Limitation of Trade Diversion and Maximization of Trade Diversion:** Member countries should prioritize integration—whether through preferences or trade agreements—with low cost suppliers. Doing so limits the amount of trade diversion consequent on a policy change, and helps maximize trade creation.
5. **Set Appropriate Policy Objectives:** Member countries as both net exporters and net importers of agriculture products should target growth in inter- as well as intra-regional trade in agriculture, especially through best use of preferential trade agreements and hub economies in order to contribute to both sustained agricultural trade networks and overall intra-OIC trade expansion.
6. **Make Use of Hub Economies Where Appropriate:** Network analysis shows that there is no single trade network within the OIC, and that at the product level, network characteristics vary markedly. However, in some cases, economies like Turkey and Saudi Arabia play a hub role, with suppliers acting as spokes. It is important for exporting countries to develop closer links with relevant hubs, so as to help drive their trade integration.
7. **Take Advantage of Emerging Industrialization:** Exporters of agricultural raw materials have the opportunity to benefit from derived demand for light manufactured goods, such as processed foods and garments, through newly industrializing countries. This dynamic is particularly strong in Asia, but is also emerging in Africa. It involves OIC member countries, but also non-member countries. As part of efforts to support intra- and cross-regional integration, member countries can, in addition to targeting low cost suppliers, target rapidly industrializing countries where demand growth for agricultural raw materials is likely to be strongest.
8. **Rationalize Non-Tariff Measures:** Agricultural exporters encounter a wide range of NTMs when entering international markets. OIC member countries are no exception to this rule. The organization can facilitate regional partners and development partners working together on issues like standards and certification, including in areas of particular interest, like halal certification, as well as infrastructure and trade facilitation. Member countries should endeavor to use NTMs only when justified by a rigorous cost-benefit analysis. This report has not been able to review individual measures in detail, but there is clear evidence that whereas MFN tariffs are falling, other types of trade barriers are not. In the absence of multilateral action, unilateral reforms should be considered, as should concerted action with willing partners.
9. **Build Supply-Side Capacity:** In particular for low and middle income countries, it is important to develop their ability to produce competitively if they are to take full advantage of the opportunities offered by market integration. Dealing with trade barriers within exporting countries—particularly poor infrastructure and trade facilitation—is key. But NTMs, unlike tariffs, can also have implications for exporters, not just importers. In particular, developing national quality infrastructure as it applies to agricultural products is important. Cooperation through the OIC, as well as through related bodies, can help support this undertaking.

INTRODUCTION

Agriculture is a major source of employment and income in many parts of the world. Indeed, almost half of the world's population lives in rural areas, where agriculture is the main source of income.¹ The sector as a proportion of GDP tends to decline as per capita incomes rise and resources shift into manufacturing and services. But for developing countries, particularly those in the low and lower middle income groups, agriculture is still a vital sector from the perspectives of growth and poverty reduction. Moreover, there is empirical evidence that one percent economic growth originating in agriculture increases spending in the three poorest deciles of the income distribution by at least 2.5 percent more than similar growth originating elsewhere in the economy.² From a development point of view, agriculture is therefore a vital issue for many countries around the world—including OIC member countries, which in 2015 accounted for around one-fifth of global agricultural production and employment.³

Within the OIC, the largest proportion of agricultural production is accounted for by the Asian Group. Its proportion is about twice as large as that of either the Arab Group or the African Group. However, in line with trends observed more generally, the share of agriculture in GDP is declining in all OIC regions. It is lowest in the Arab Group (5.7% in 2015), then the Asian Group (11.5%), but is significantly higher in the African Group (21.3%).⁴ It is therefore clear that while all regional groups have an interest in expanding opportunities in the agricultural sector, including through trade, it is typically the lower income countries that have the largest sectors relative to the rest of the economy.

Despite the importance of the sector, global agricultural markets remain significantly more distorted than markets for manufactured goods. In part, this is a legacy of the fact that the GATT and its successive rounds of trade liberalization largely excluded agriculture until the Uruguay Round, which started in the 1980s. Nonetheless, agricultural products remain important sources of export income in many developing countries. Unlocking the potential of the agricultural sector, including through the development of international linkages, is crucial for growth and development, particularly in low and middle income countries, but is also vital for social welfare in higher income countries without large reserves of domestic arable land or water.

Since its inclusion in the WTO Agreements, agriculture has undergone substantial liberalization worldwide. As a result, trade flows have increased substantially in value over time. OIC member countries do not stand apart from this development, but indeed are intricately involved in it. A diverse organization like the OIC brings together countries that are both net exporters and net importers of key agricultural products, and as such has the potential to help promote further mutually beneficial trade integration.

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¹ COMCEC Coordination Office. 2017. *COMCEC Agriculture Outlook 2017*. Ankara: COMCEC Coordination Office.

² COMCEC Coordination Office. 2017. *COMCEC Agriculture Outlook 2017*. Ankara: COMCEC Coordination Office.

³ COMCEC Coordination Office. 2017. *COMCEC Agriculture Outlook 2017*. Ankara: COMCEC Coordination Office.

⁴ COMCEC Coordination Office. 2017. *COMCEC Agriculture Outlook 2017*. Ankara: COMCEC Coordination Office.



The agri-food system refers to the entire range of consumers, enterprises, institutions, and activities involved in the production, processing, marketing, and consumption, originating from agriculture, forestry, and fisheries, including the inputs needed and outputs generated at each of these steps.⁵ This definition is very wide. In any consideration of the role of trade, it is necessary to limit the analysis to particular products as defined using standard international trade classifications. Section 1 discusses the methodology used to develop product groups for this report, and Annex 1 sets out the classification of products used for the analysis. At the most aggregate level, the entire group of products is referred to jointly as “agricultural products”, so trade in those goods is referred to as “agricultural trade”. There are then three titles that we use for analysis by aggregate sector: agri-food products, fish products, and agricultural raw materials. Each of those aggregate sectors, or titles, is then divided up further into sections and divisions, which are used as appropriate in the analysis. The selection of products and the definitions used are based on the characteristics of agricultural trade in OIC countries, and are designed to capture a wide range of goods under a single analytical approach.

The study combines quantitative and qualitative methodologies to produce a detailed analysis of trade networks in agricultural products as they involve OIC member countries. The next section presents the conceptual framework in detail, and discusses methodology. Section 2 then provides an overview and analysis of global trade in agricultural products focusing on recent trends, the direction of trade in intra- and cross-regional terms, and then looks at emerging networks in agricultural trade using newly developed techniques. Finally, Section 2 introduces key data on policies affecting agricultural trade.

Section 3 provides a more detailed analysis of agricultural trade within the OIC. It first looks at the composition and patterns of trade among OIC member countries, focusing on the most highly traded goods at a disaggregate level. It then moves to look at intra- and inter-regional trade networks within the OIC group itself. Finally, it addresses the role of policy by looking at the importance of regional trade agreements and tariffs as determinants of bilateral trade flows.

Section 4 moves to a detailed consideration of three OIC member countries: Bangladesh, Cameroon, and Tunisia. Each country represents one of the three OIC regional groups, and is used to show the key dynamics at work in understanding trade integration at a highly specific and disaggregated level. The case studies are based on detailed quantitative analysis, supplemented by qualitative interview with key informants. Based on the views expressed by stakeholders during interviews, it is possible to identify key policy priorities, which vary substantially across the three cases.

Finally, Section 5 draws the study together and proposes key messages and recommendations for OIC member countries.

⁵ FAO. 2013. *The State of Food and Agriculture—Food Systems for Better Nutrition*. Rome: FAO.

1. CONCEPTUAL FRAMEWORK AND METHODOLOGY

This section describes the conceptual framework and methodology for the report. The section first addresses the issue of data, looking at the key databases on global agricultural trade, and justifying the choice to use UN Comtrade as the primary data source. The discussion then moves to the methodologies applied for analyzing the data, moving from descriptive statistics to network analysis, and a model-based derivation of indicators on comparative advantage. Finally, there is a discussion of the methodology adopted for the country case studies in Section 4.

1.1. Data Sources

Numerous data sources are available covering various aspects of international trade and production of agri-food products. However, not all are suitable for the type of analysis required by this report. A key requirement in this case is that trade flows be made available at a highly disaggregated product level, so that flows can be matched to a product classification that is appropriate for OIC member countries. Annex 1 contains the product classification used in this report, and it is referred to throughout as “the Annex 1 classification”. It is based on the Standard International Trade Classification Revision 3 (SITC Rev.3). Second, the methodologies followed here—including network analysis, and a model based analysis of comparative advantage—require bilateral data, i.e. flows that move from an exporter to an importer. As such, databases that record trade with an aggregate “rest of the world” region cannot be used in this case.

In the agri-food context, a common starting point is FAOStat. Historically, this database has focused on production data, not trade, and included only exports and imports with an aggregate “rest of the world” region. The current implementation, however, includes bilateral trade data, thereby satisfying the second requirement set out above. However, the product classification used is the Food and Agriculture Organization’s (FAO) own classification, which is useful for certain purposes, but which does not easily map to the SITC Rev.3, which the Annex 1 classification uses to identify the products needed for this study. The data would therefore need to pass through a concordance to identify flows in accordance with the objective of this Study. There would likely be some loss of breadth and detail, as the FAO database focuses on raw and lightly transformed products, thereby excluding some products listed in Annex 1. The conclusion is therefore that FAOStat is not an appropriate data source for this project.

The standard source for bilaterally disaggregated international trade data tracked by SITC product is UN Comtrade. The data are typically accessed by researchers using the World Bank’s World Integrated Trade Solution (WITS) interface. UN Comtrade contains export and import data over a long period, as reported by countries all around the world. 54 out of 57 OIC member countries report data to UN Comtrade, and all 57 member countries are included as partners (those with whom flows are reported). The WITS interface makes it possible to download trade data in a variety of product classifications, including SITC Rev. 3. From that product level information, it is then possible to aggregate data into the groups identified in Annex 1. Data are available on both reported exports and reported imports.

An alternative to UN Comtrade is the International Trade Center’s (ITC) TradeMap. This database contains a wealth of information, but is destined for use by the private sector rather than researchers. As a result, it does not facilitate the large-scale download of data across a large number of products and countries. It also records data using the Harmonized System, but does

not have an in-built concordance to SITC Rev.3, which means that an extra step would be required to obtain the data required to construct the Annex 1 categories.

For these reasons, the analysis uses UN Comtrade as the primary data source in this report. The data are extracted directly in SITC Rev.3 format, limiting the dataset to the products identified in Annex 1. Fields are then added to the dataset to capture the aggregate groupings listed in Annex 1, so that the data accord with the product categories. Data are extracted for the period 1995-2016, the most recent period for which data are widely available, in line with the objective of this Study; 2017 data are not used as there is often a significant lag with country reporting to UN Comtrade, so data for that year would likely be a major understatement of the true level of trade. Taking all products, countries, and years together, the database totals over 8.2 million observations (where an observation is a report of a bilateral trade flow at the SITC Rev.3 product level).

International trade databases typically include data on the value of goods traded, but also quantities traded. The analysis is exclusively in terms of values, as is typical of applied work in international trade. The reasons are two-fold. First, units of quantity differ across products (e.g., kg for solids, liters for liquids) and so summing within the categories within Annex 1 would not always give consistent results. Second, most trade policy measures applied to agri-food products at the border are ad valorem tariffs, i.e. they depend on the value of the goods being imported, not specific tariffs, which depend on quantity. As such, customs administrations have a strong revenue-raising incentive to ensure that values are recorded correctly. They do not have that same incentive in relation to quantities. As such, most trade economists regard quantity data as much less reliable than value data, and almost all applied work in international trade is done in terms of values. That is the approach followed here.

1.2. Empirical Methodologies

Much of the empirical work in this report is conducted by means of descriptive statistics. Common approaches include calculating trends and growth rates, as well as breakdowns of total flows by product categories. The evolution of agri-food trade is considered at the global level, and then also among OIC regional groups. These methods are standard in the literature and widely used in policy reports, and do not require a detailed explanation.

Two elements of the methodology require further explanation, as they are less well known outside the academic community. The first is network analysis. This area is an emerging one in terms of the literature.⁶ Network science and applied mathematics have developed a number of general purpose tools to produce summary statistics that capture the position of nodes (countries) in complex networks. Two are of particular policy relevance. The first is degree centrality, which is a measure of the number of countries that each country is directly connected to. In a matrix of export flows, it is the number of export destinations a country has. The policy relevance of this measure is that it coincides with the idea of geographical export diversification, which is of particular importance to developing countries looking to develop new trade flows.⁷ The second is eigenvector centrality. The rationale is that this measure captures the position of

⁶ See for example: Shepherd, B. (2017). "International Input-Output Linkages and Exogenous Shock Transmission: A Simple Model and Evidence from the Global Financial Crisis." Working Paper DTC-2017-3, Developing Trade Consultants. <https://developing-trade.com/publications/international-input-output-linkages-and-exogenous-shock-transmission-a-simple-model-and-evidence-from-the-global-financial-crisis/>; and Shepherd, B., and L. Archanskaia. (2014). "Evaluation of Value Chain Connectedness in the APEC Region." Report Prepared for the APEC Policy Support Unit. Singapore: APEC. <https://developing-trade.com/publications/evaluation-of-value-chain-connectedness-in-the-apec-region/>.

⁷ Shepherd, B. (2010). "Geographical Diversification of Developing Country Exports." *World Development*, 38(9): 1217-1228.

a node by considering its susceptibility to positive or negative external shocks. The score represents the value of a \$1 shock to the trade network at a random point, after it has fully propagated and the system has returned to an equilibrium state. More central countries are more subject to positive and negative economic effects coming from outside. But mathematically, this measure is exactly equivalent to a conception of a country's centrality in which its score is an average of the scores of all other countries it is directly linked to. Although more complex mathematically, the intuitive nature of this measure has made it widely applicable in other contexts. For instance, Google uses a modified version of eigenvector centrality in its PageRank algorithm that ranks internet searches, and it has been shown that a closely related measure can help explain aggregate economic fluctuations based on input-output linkages across sectors.⁸

The second aspect of the methodology that requires explanation is the approach to measuring comparative advantage in agri-food sectors and tracking it over time. Traditionally, applied trade policy researchers have used measures like Revealed Comparative Advantage (RCA). However, they are unsatisfactory because they do not correspond to standard conceptions of comparative advantage except in a world without sector-specific trade costs. More generally, a measure like RCA does not have any theoretical foundation, but is presented simply as a convenient summary statistic. However, the recent literature has shown that it is possible to develop a measure of comparative advantage that is consistent with standard Ricardian theory, and which can be easily implemented using standard data.⁹ The method relies on estimating a standard gravity model using sectoral data, then reparametrizing the exporter-specific terms to produce an indicator of comparative advantage that has a strong grounding in widely accepted theory. This indicator is referred to as TRCA, to avoid confusion with the traditional measure. The analysis of comparative advantage in this project follows that approach. Because of the large number of parameters involved in estimation of the gravity model, it is not feasible to produce TRCA estimates at the most disaggregated level of Annex 1: computation is too long to be workable, and pushes the limits of what is possible in standard statistical software. The division level of Annex 1 is therefore used, which still produces a regression with 91,150 observations, and 4,819 independent variables, as well as 10,331 fixed effects removed by demeaning.

When analyzing trade flows at the global level, i.e. all countries together, regional groupings established by the World Bank are used. These groups are widely used in economic analysis by international organizations and researchers. It is appropriate to start the analysis at this general level, because it highlights the role of different geographical areas in relation to world agricultural trade. To provide further detail for OIC member countries, the analysis uses OIC regional groupings in the section on trade performance of OIC member countries, as it is more informative to distinguish between OIC and non-OIC countries at that stage.

1.3. Case Study Methodology

In addition to reviewing data, it is also important to learn from concrete experience on the ground in each of the OIC's three regional groupings. The countries studied here are Bangladesh (Asia), Cameroon (Africa), and Tunisia (Arab). The rationale for choosing these three countries is that agriculture plays a significant role in the economy of each, yet they also represent diverse examples from the point of view of income level, climate and major crops, as well as trade

⁸ Acemoglu, D., V.M.Carvalho, A. Ozdaglar, and A. Tahbaz-Salehi. (2012). "The Network Origins of Aggregate Fluctuations." *Econometrica*, 80(5): 1977-2016.

⁹ Costinot, A., D. Donaldson, and I. Komunjer. (2012). "What Goods do Countries Trade? A Quantitative Exploration of Ricardo's Ideas." *Review of Economic Studies*, 79(2): 581-608.



patterns. The intention is to produce a set of case studies in which it is possible for all OIC member countries to find some degree of insight into their own diverse situations.

The major part of the case studies consists of a review of relevant data and policy documents from the countries in question. In addition, interviews have been conducted with key informants using a semi-structured protocol. The case studies are therefore based on a mixed methods approach that seeks the optimal mix of quantitative and qualitative information. The advantage of combining the two approaches in this way is that key informant interviews can provide background analysis and consideration of complex environmental factors that a data review alone would not capture. By combining the two, the case studies provide the best possible opportunity for the OIC's membership to learn from experience in selected countries. The semi-structured interview instrument is reproduced in Annex 2.

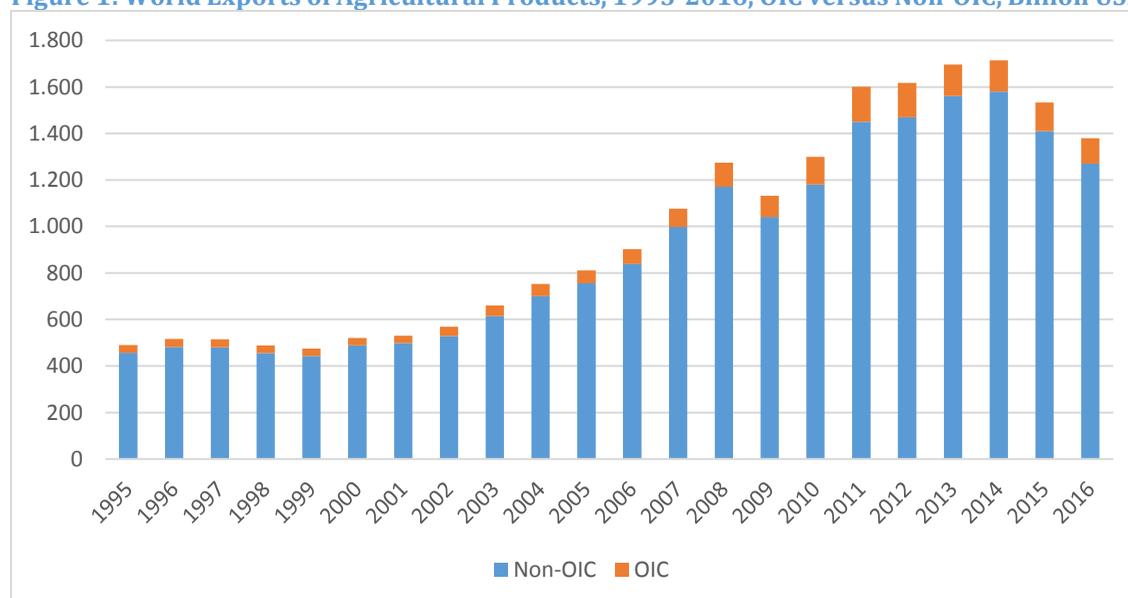
2. OVERVIEW AND ANALYSIS OF GLOBAL AGRI-FOOD TRADE

This section provides background for the report by charting global trade patterns in agricultural products over the last two decades. It starts by looking at the proportion of world trade accounted for by OIC member countries, and by each of the major product groups identified in the Annex 1 classification. Regional patterns are examined, then the text moves to consider the direction of trade by looking at bilateral trade relationships between regions. The following subsection takes a network analysis perspective, using graphical methods and centrality measures to show how inter- and intra-regional trade links are important within the global agricultural trade economy. Finally, there is a discussion of the role of global policies in promoting trade in agricultural products over the relevant time period.

2.1. Recent Trends in Global Agri-Food Trade

Figures 1 and 2 give an idea of the proportion of global trade accounted for by OIC countries, differentiating between exports and imports. At this stage, OIC regional groups are not identified separately, because the proportions would appear unduly small in the figures; the focus is on aggregate performance at this point, before moving to a consideration of OIC regional groups in the next section. For both exports and imports, the proportion of global trade accounted for by intra-OIC trade is relatively small, but rising over time: in the case of exports, it increases from 6.7% in 1995 to 8.0% in 2016, while in the case of imports, it rises from 7.3% to 11.1% over the same time period.¹⁰ Of course, these overall figures disguise considerable variation across regions and products, which will be examined further in this section and the next. But they nonetheless provide a first indication that OIC countries are active in global agricultural, though on an overall level, more as importers than as exporters.

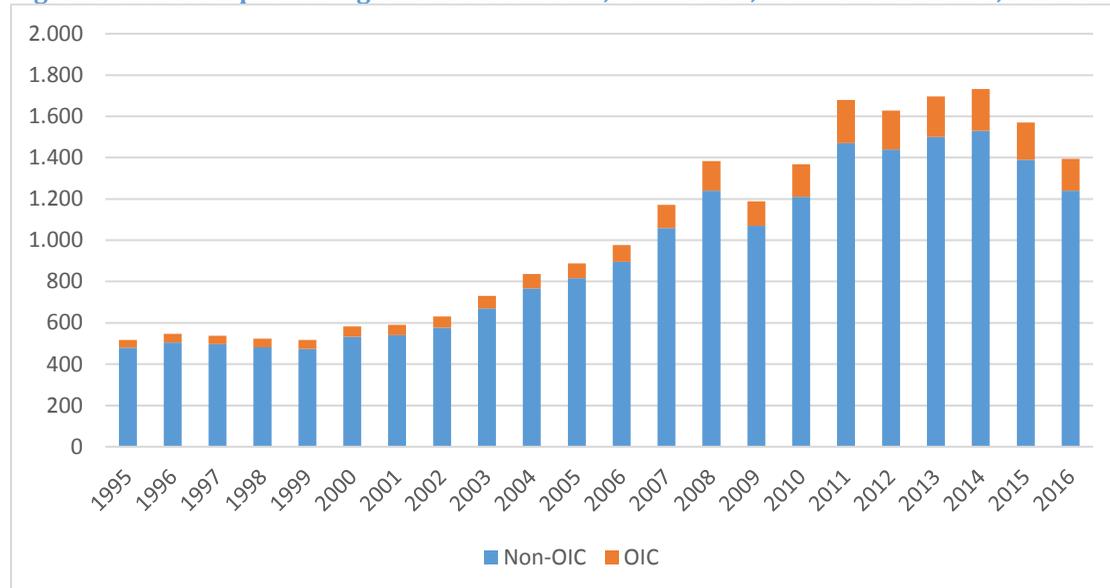
Figure 1: World Exports of Agricultural Products, 1995-2016, OIC versus Non-OIC, Billion USD



Source: UN Comtrade; and authors' calculations.

¹⁰ Similar results are presented by COMCEC: see COMCEC Coordination Office. 2017. *COMCEC Agriculture Outlook 2017*. Ankara: COMCEC Coordination Office.

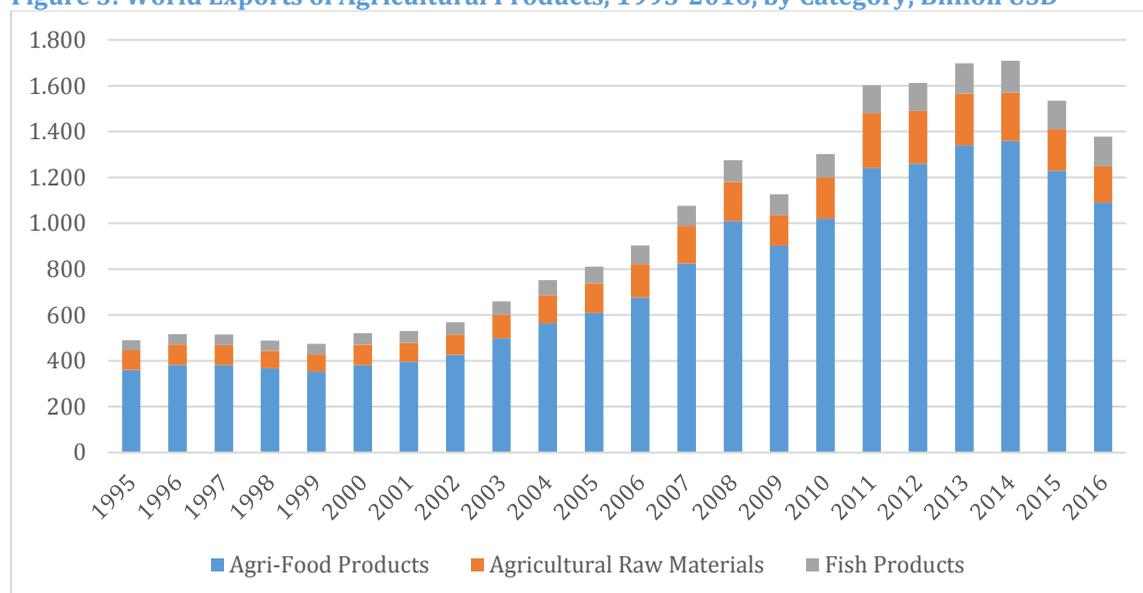
Figure 2: World Imports of Agricultural Products, 1995-2016, OIC versus non-OIC, Billion USD



Source: UN Comtrade; and authors' calculations.

To provide a preliminary indication of the importance of different products in global agri-food trade, Figure 3 presents a breakdown of world exports by main product category (title) in Annex 1. (Where breakdowns by country are not relevant, world exports equal world imports, subject to a small amount of measurement error; it is therefore appropriate to use export data only.) The main bulk of world exports are accounted for by agri-food products, although the relative balance among the three title categories varies significantly over time. In 1995, agricultural raw materials constituted 17.5% of the total, but by 2016, that number had fallen to 11.5%. By contrast, fish products stood at 8.9% in 1995, but by 2016 had risen to 9.4%. These differences show that the sources of export market dynamism are quite different across sectors. Indeed, as these figures suggest, growth rates of exports have differed significantly across sectors. Agricultural raw materials grew the slowest, at an average annualized rate of 3.0%, compared with 5.3% for fish products, and 5.4% for agri-food products. These dynamics are important, because they have implications for the export dynamism of economies that specialize in each type of product. All countries, particularly those in the low and middle income groups, are focused on growing trade linkages rapidly as one way of supporting sustained productivity and income growth. Specialization in agri-food products is therefore associated with more rapid trade growth than trade in agricultural raw materials, likely related to the fact that agri-food products can involve some level of processing. Although the difference in annualized growth rates is relatively small, over time the effect of compounding is significant. For example, 3.0% annual growth over ten years leads to a cumulative 34% increase in trade, but 5.4% annual growth leads to a cumulative 69% increase in trade, or slightly over double the effect.

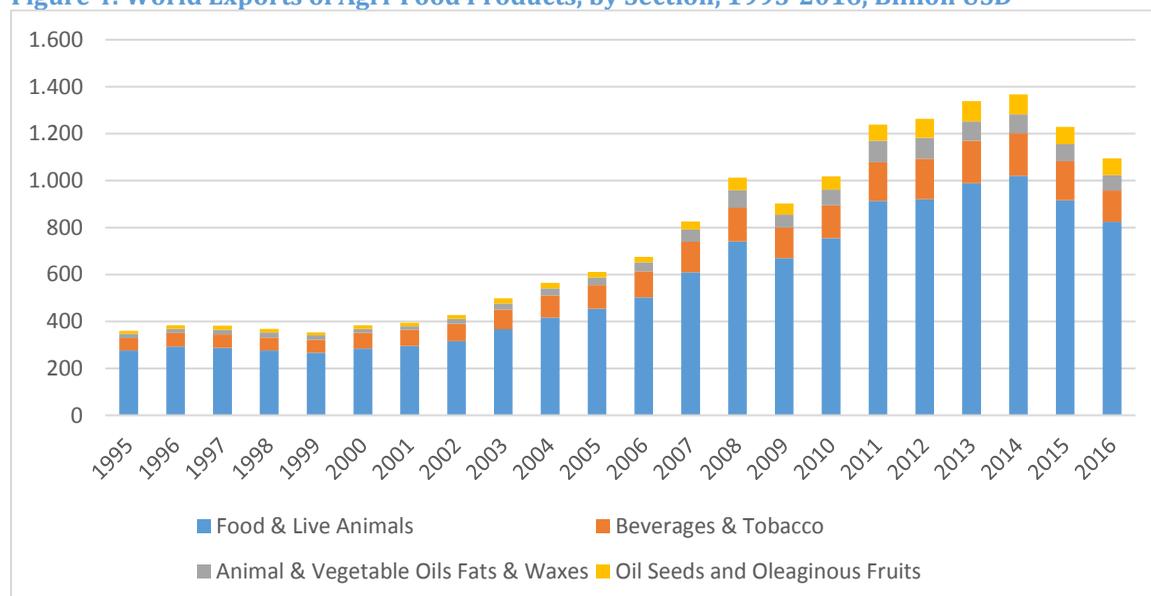
Figure 3: World Exports of Agricultural Products, 1995-2016, by Category, Billion USD



Source: UN Comtrade; and Authors' calculations.

The agricultural raw materials and fish products titles only contain one section each, so their performance over recent decades is already accurately summarized in Figure 3. However, the agri-food products title contains four sections, so it is important to break the aggregate figures in Figure 3 out into their component parts. Figure 4 presents results. The bulk of world exports under this heading are accounted for by section 0 (food and live animals), followed by section 1 (beverages and tobacco), section 22 (oil seeds and oleaginous fruits), and finally section 4 (animal and vegetable oils, fats, and waxes). However, the composition by section varies considerably over time. In 1995, the breakdown is 76.8% food and live animals, 14.6% beverages and tobacco, 5.3% animal and vegetable oils, fats, and waxes, and 3.4% oil seeds and oleaginous fruits. By 2016, however, these percentages have changed to 75.4%, 12.1%, 6.0%, and 6.5% respectively. At the level of world exports, there is therefore evidence that within the agri-food products category, dynamism is chiefly located in oil seeds and oleaginous fruits, and animal and vegetable fats, oils, and waxes. Changes in the relative makeup of this category have not been radical over recent decades, but secular trends are nonetheless apparent, which have implications for product specialization by individual countries. The key finding is that the relative importance of food and live animals is falling over time, as is the case for beverages and tobacco. However, the relative importance of oils and fats is increasing over time. In other words, demand is shifting towards the latter two product groups, which means that trade growth is relatively more rapid. Countries that are specialized in those product groups therefore experience benefits linked to more rapid export expansion than countries that are specialized in the first group of sectors.

Figure 4: World Exports of Agri-Food Products, by Section, 1995-2016, Billion USD



Source: UN Comtrade; and Authors' calculations.

The analysis thus far has focused on overall world trends in trade in agricultural products, using data at the overall, title, and section levels of the Annex 1 classification. The remainder of this subsection tracks world trends in exports by region of origin, to show the geographical evolution of world trade in agricultural products.

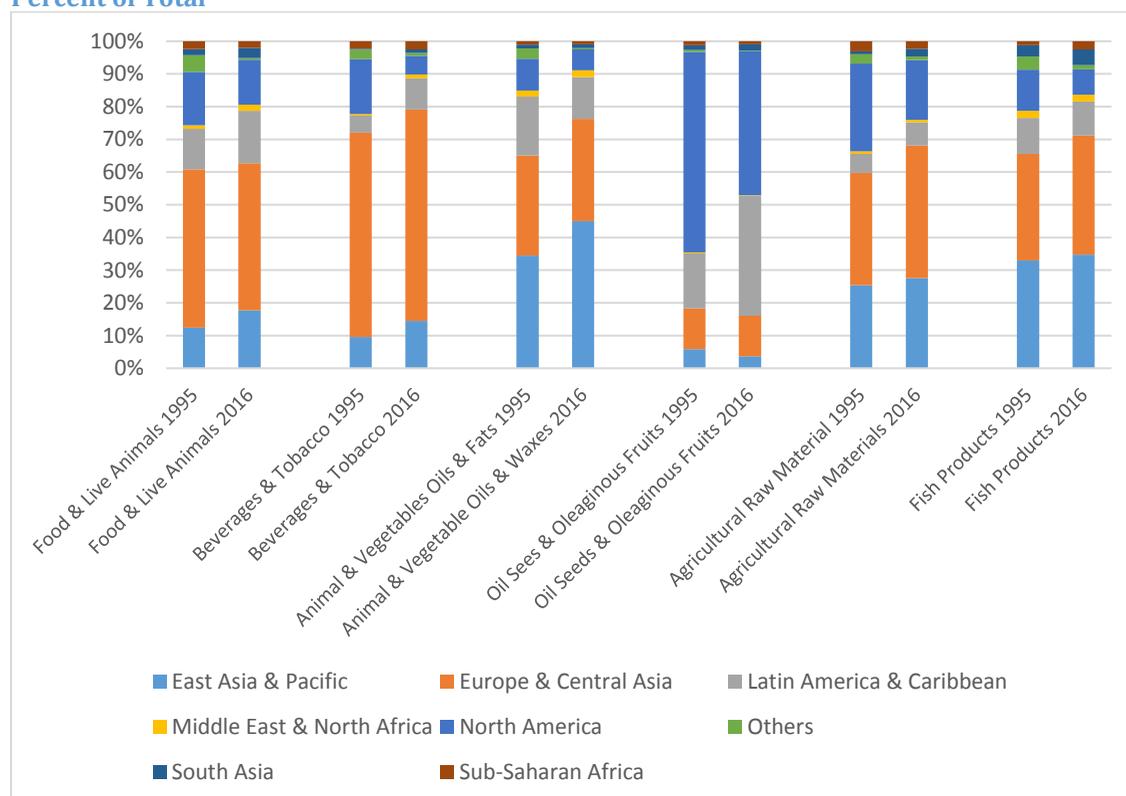
Agri-food products includes a number of different sections, whereas the other two titles only include one section each. Figure 5 considers all products at the section level separately, to investigate whether or not different export dynamics are in evidence in terms of the geographical distribution of exports. To enable presentation of all information in a single figure, we focus on the two extreme years of the sample only, namely 1995 and 2016. The difference between the two represents the trend in export dynamics over time. In all cases, the figure uses percentages of total exports, and so does not examine differences in the relative sizes of sectors over time; that issue has already been dealt with above.

In the first two sections of agri-food, namely, “food and live animals” and “beverages and tobacco”, Europe and Central Asia is the dominant exporting region. However, the picture changes for the last two sections, namely “animal and vegetable oils, fats and waxes” and “oilseeds and oleaginous fruits”. East Asia and the Pacific, as well as Europe and Central Asia, is a major exporter of animal and vegetable fats, oils, and waxes. Finally, North America and Latin America and the Caribbean are the dominant exporting regions for oil seeds and oleaginous fruits. All four sections under this title show a reasonable degree of stability over time in terms of the distribution of export origins. Sharp changes are likely due to reporting difficulties, as not all countries report trade data with the same lag period.

For agricultural raw materials, Europe and Central Asia, as well as East Asia and the Pacific, and North America are major exporters. The pattern of exports across geographical regions is relatively stable over time. The final section in the Annex 1 product classification is fish products. In this case, the leading exporters are East Asia and the Pacific, as well as Europe and Central

Asia, followed by Latin America and the Caribbean. Exports in this sector are relatively concentrated in regional terms, but once again, the distribution is relatively stable over time.

Figure 5: World Exports of Agricultural Products by Section, by Exporting Region, 1995-2016, Percent of Total

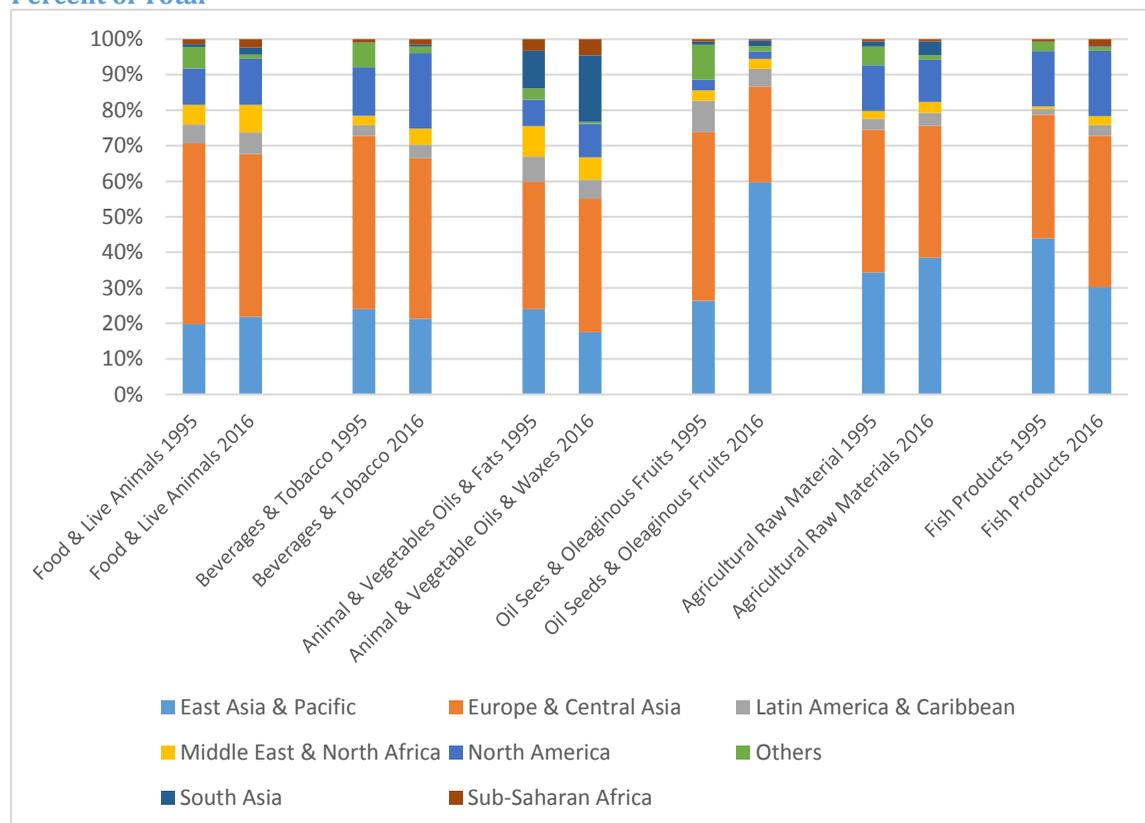


Source: UN Comtrade; and Authors' calculations.

Thus far, the focus has been on exports of agricultural products by origin. In the remainder of this subsection, consideration moves to the import side. Figure 6 shows the geographical pattern of world imports of agricultural products by section, comparing 1995 and 2016 to show the trend over time. In the first three sections, Europe and Central Asia is the dominant importing region. However, the picture changes for oil seeds and oleaginous fruits, where East Asia and the Pacific has become the dominant import market. With the exception of that development, import patterns at the section level show a reasonable degree of stability over time

In agricultural raw materials, Europe and Central Asia, as well as East Asia and the Pacific, and North America are major importers. The pattern of imports across geographical regions is relatively stable over time, although there is clear evidence of faster import growth in East Asia and the Pacific relative to other regions over recent years. The final section in the Annex 1 classification is fish products. In this case, the leading importers are East Asia and the Pacific, Europe and Central Asia, and North America. As was the case for export flows, considered above, imports in this sector are relatively concentrated in regional terms, but once again, the distribution is relatively stable over time.

Figure 6: World Imports of Agricultural Products by Section, by Importing Region, 1995-2016, Percent of Total



Source: UN Comtrade; and Authors' calculations.

Examining trade flow patterns like this is informative for studying macro-dynamics of trade flows, and starting to understand the linkages among regions in different trade product networks. However, trade flows on their own do not tell us which regions have comparative advantage in which products. For that analysis, an econometric model is required. As set out in Section 1, a gravity model approach is used, which provides a theory-consistent measure of comparative advantage, which is more accurate and informative than theoretical measures like the Balassa RCA index. The output is referred to as TRCA, as the authors of the paper liken their measure to Balassa's, but highlight the ways in which it is superior.

Table 1 presents results based on average TRCA indices based on an analysis at the division level due to computational restrictions. Unlike the Balassa index, there is no arbitrary cut-off in this index to show products of comparative advantage or disadvantage. Rather, analysis requires comparison of relative number across countries, which is the essence of comparative advantage in theoretical models. To undertake this comparison, it is easiest to normalize the table by dividing through by the index scores for live animals. The analysis of this table proceeds by comparing relative scores, with a higher ratio of the index in one sector relative to another indicating comparative advantage in the first. Based on such a comparison of relative scores, the table shows that South Asia has strong comparative advantage in sectors like meat, fish and crustaceans, cereals, vegetables, sugar products, and crude materials relative to other agricultural sectors. However, these numbers should be interpreted with caution, as the South Asia aggregate is composed of a small number of countries relative to other regions. Also,

calculations are based on observed trade flows, which are affected by policy settings within countries. As a result, subsidization practices could make a region appear to have comparative advantage based on observed trade patterns, even where it would not necessarily do so in an undistorted market. For the other regions, East Asia and the Pacific has its strongest comparative advantage in animal and vegetable fats and oils, as well as crude materials, and other edible products and cereals. For Europe and Central Asia, the relevant products are dairy, cereals, and other edible products. For Latin America and Caribbean, it is meat, cereals, and sugar products. For the Middle East and North Africa, the strongest comparative advantage is in cereals, sugar products, other edible products, and oils and fats. For North America, there is evidence of comparative advantage in cereals, live animals, meat, and animal feed. Finally, for Sub-Saharan Africa, the relevant products are live animals, cereals, and crude materials. From the point of view of interpretation of these results, it is important to stress that comparative advantage is a relative concept: it summarizes the extent to which one country relative to another is better at producing one product relative to another. It is not a measure of absolute or competitive advantage.

Table 1: TRCA Indices by Region and Product Division, 2016, Index Number

	East Asia & Pacific	Europe and Central Asia	Latin America & Caribbean	Middle East & North Africa	North America	South Asia	Sub- Saharan Africa
Live animals	1.50	1.81	1.67	1.15	2.01	2.35	1.66
Meat	1.44	1.92	2.30	1.18	2.36	7.85	1.55
Dairy products	1.73	2.50	1.93	1.43	1.76	3.93	1.50
Fish and crustaceans	1.74	1.56	1.77	1.20	1.49	5.70	1.59
Cereals	2.74	2.98	2.90	1.91	3.06	10.23	1.94
Vegetables and fruit	1.76	1.90	2.14	1.46	1.91	4.88	1.61
Sugar products	1.75	1.75	2.24	1.51	1.44	5.42	1.44
Coffee	1.59	1.63	1.95	1.17	1.24	6.59	1.71
Animal feed	1.50	1.84	2.17	1.10	2.32	4.29	1.60
Other edible products	2.09	2.32	2.03	1.77	2.08	6.49	1.60
Beverages and tobacco	1.44	1.76	1.73	1.05	1.47	4.43	1.23
Crude materials	1.95	2.07	2.05	1.26	1.90	6.20	1.80
Oil seeds and oleaginous fruits	0.96	0.79	1.06	0.53	1.45	3.33	1.08
Animal and vegetable fats and oils	2.20	1.85	2.13	1.51	1.70	6.49	1.69

Source: Authors' calculations.

From a policy standpoint, the TRCA results considered above can help policymakers identify sectors where future export growth is likely. They can then concentrate their efforts to improve market access on those sectors. Although progress in multilateral trade negotiations is challenging, there is considerable scope to move forward on agricultural trade regionally, as indeed has already happened in many cases, as discussed further below. Countries naturally have different market access interests in regional negotiations, but a technical analysis like

TRCA helps highlight for policymakers the areas of largest impact, as well as those where stronger imports can be expected as a result of liberalization (i.e., those sectors with comparative disadvantage).

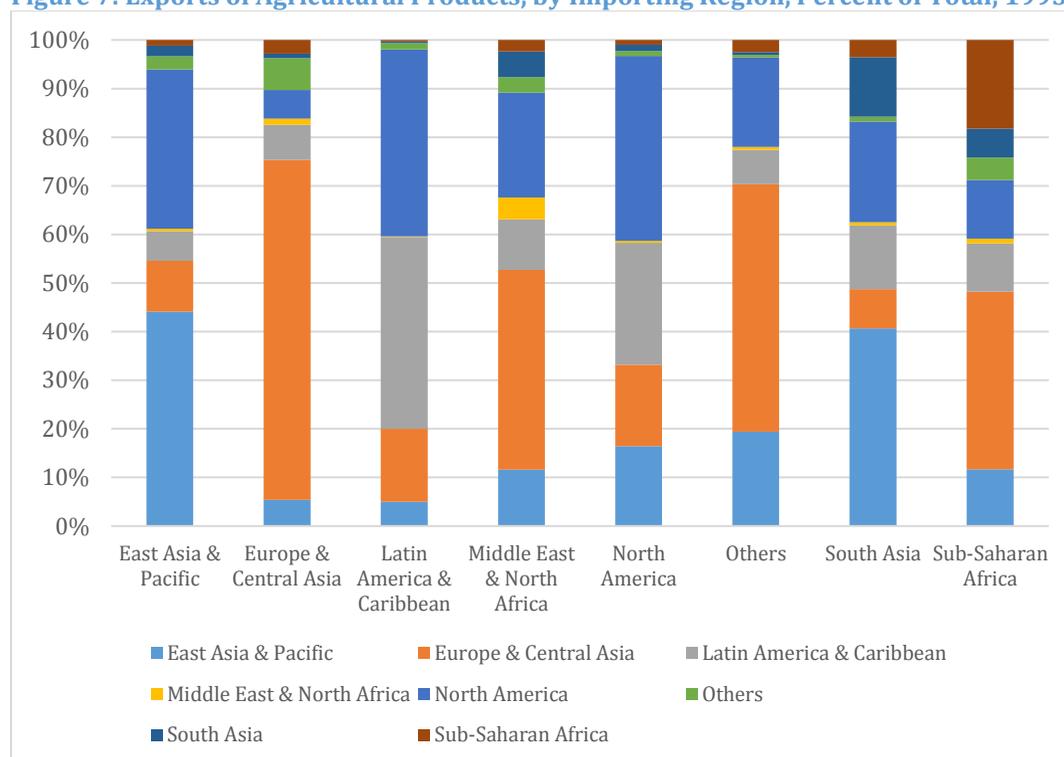
2.2. Direction of Global Agri-Food Trade

The previous section considered recent trends in global agri-food trade largely through the lens of products. This section considers geography, and specifically major export destinations by region. It takes the latest year of data available, 2016. Figure 7 presents results for 1995, while Figure 8 presents results for 2016. Each bar shows the breakdown in percentage terms of the listed region's exports by importing region. The data are analyzed at the aggregate level, i.e., agricultural products, which includes all product groups, because introducing directionality results in far more information to be presented, and aggregate analysis is sufficient to provide an overall picture and some first analytical results, before moving to analyze the data in more detail using network analysis methods, which are better adapted to the task.

A first interesting finding is that the importance of intra-regional trade varies sharply from region to region, but is fairly consistent through time. On the low end, the Others group and South Asia have only 3.3% and 11.0% of exports that are directed to other countries in the region in 2016. By contrast, Europe and Central Asia directs 75.8% of its exports to the same region in 2016, and the similar figure for East Asia and the Pacific is 57.1%. There are many reasons for these observed differences. Some relate to product similarity in trade: agricultural trade is typically in dissimilar products, so countries with similar geographical conditions will tend to engage in relatively less agricultural trade. Others, however, likely relate to policies that are holding back the integration of regional markets. Regional integration has been challenging in South Asia, for example, due both to more inward-looking development policies than are seen elsewhere combined with a high degree of importance attached to self-sufficiency for historical reasons, but also political tensions unrelated to trade policy that have nonetheless translated into relatively limited economic exchanges within the region; agricultural trade is surely an unintended casualty of these processes.

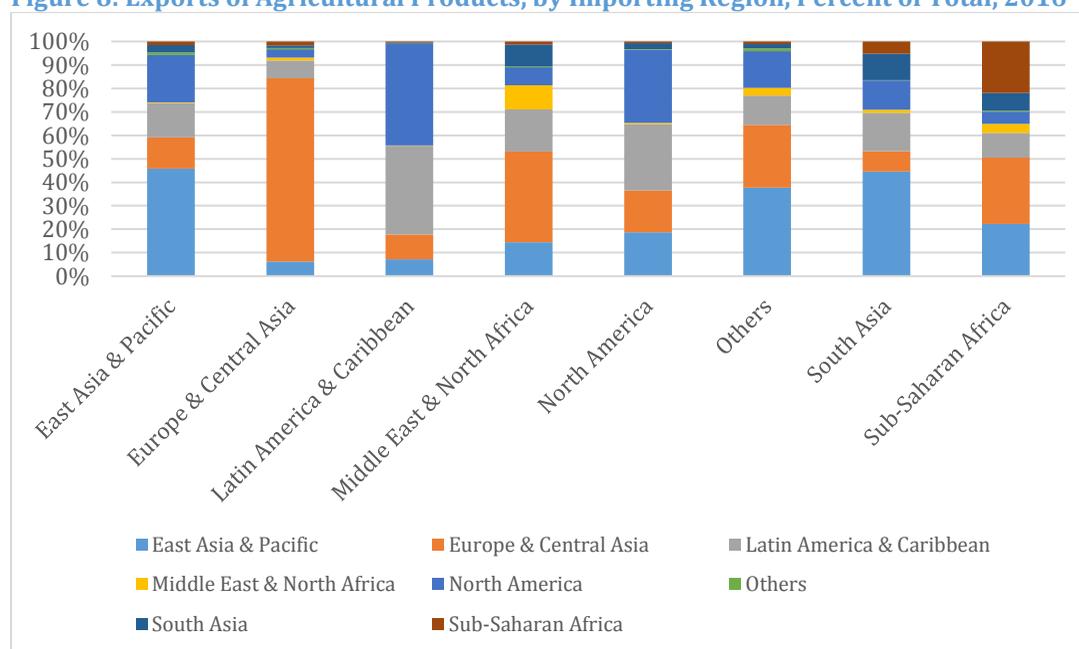
A second finding is that geographical proximity, even across regional boundaries, clearly favors greater trade integration. For instance, Sub-Saharan Africa exports relatively heavily to Europe and Central Asia, while South Asia exports relatively heavily to East Asia and the Pacific.

Figure 7: Exports of Agricultural Products, by Importing Region, Percent of Total, 1995



Source: UN Comtrade; and Authors' calculations.

Figure 8: Exports of Agricultural Products, by Importing Region, Percent of Total, 2016



Source: UN Comtrade; and Authors' calculations.

2.3. Networks in World Agricultural Trade

The previous subsections have focused on analyzing trade flows in the traditional ways, looking at sectoral and geographical breakdowns, and identifying the directions of trade at an aggregate level. An alternative way of looking at the data is through concepts drawn from network science. As set out in Section 1, the analysis applies key findings from the applied mathematics literature on networks to examine some key characteristics of agri-food trade networks at the global level. The analysis proceeds at the title level of the Annex 1 classification, because the metrics are best adapted to trade matrices that are relatively dense, and the number of zeros in the bilateral trade matrix increases rapidly at higher levels of disaggregation.¹¹

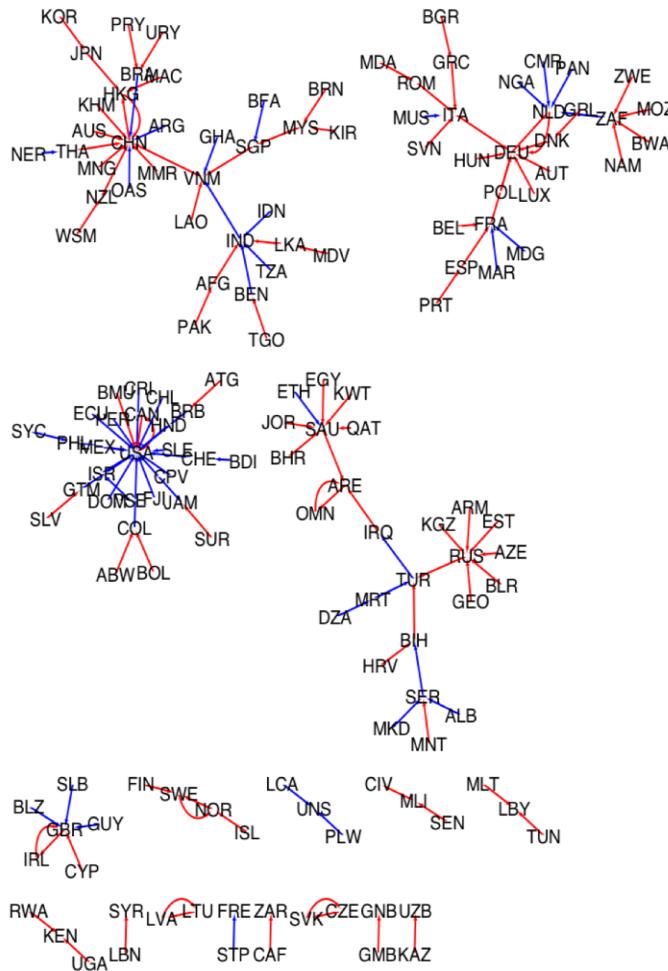
There is no unique visual representation of network data, but it is possible to use a standard technique, the prefuse force directed algorithm, to produce images that summarize the relevant data. The full trade network is made up of thousands of bilateral connections, and is impractical to present visually: the mass of individual lines in the end prevents any meaningful interpretation. The analysis therefore analyzes the network using only each country's largest export flow.¹² Countries are represented by the three letter ISO codes, which are reproduced for reference in Annex 4.

Figure 9 looks at the global network of trade in agri-food products. Blue lines indicate trading relationships between World Bank regional groupings, while red lines indicate trading relationships within World Bank regional groupings. Arrowheads indicate the direction of trade flows. The figure makes clear that there is a strong regional dimension to trade in agri-food products, with most countries having their largest trade link with a regional partner (i.e., red lines predominate). This finding is consistent with standard models of trade in which bilateral trade costs are in part determined by the geographical distance between countries, which means that more distant countries tend to trade less, keeping other factors constant. However, there are important cases in which extra-regional trade linkages are important as well, so the finding is by no means a cut and dried one. Rather than presenting a single integrated global network, the figure makes clear that there are subnetworks: a primarily European one, centered on Germany, a primarily Asian one centered on China and India, an American one centered on the United States, and a smaller West Asian network involving Turkey, the UAE, and Saudi Arabia. Each network also has extra-regional members, so trade clearly crosses regional boundaries in this sector, but the salience of the sub-networks is an important feature to note from the perspective of future trade development opportunities.

¹¹ Haveman, J., and D. Hummels. (2004). "Alternative Hypotheses and the Volume of Trade: The Gravity Equation and the Extent of Specialization." *Canadian Journal of Economics*, 37(1): 199-218.

¹² Shepherd, B., and L. Archanskaia. (2014). "Evaluation of Value Chain Connectedness in the APEC Region." Report Prepared for the APEC Policy Support Unit. Singapore: APEC. <https://developing-trade.com/publications/evaluation-of-value-chain-connectedness-in-the-apec-region/>.

Figure 9: Graphical Representation of the Global Trade Network in Agri-Food Products, Largest Flow Only, 2016



Source: Authors'.

To quantify the above insights, it is possible to use the metrics of centrality discussed in Section 1. The first is out degree centrality, which is the number of export partners of each country in this sector. This measure is an indicator of export diversification. Table 2 column 1 presents results. Clearly, the degree to which countries have a geographically diversified range of export markets is linked to their geography and income level. Countries in North America have, on average, nearly four times as many export destinations as countries in Sub-Saharan Africa. Europe and Central Asia also performs relatively strongly, but the other regions have far fewer export links than the leading region.

Column 2 of Table 2 presents results on eigenvector centrality, which weights each country's export destinations by importance using an iterative procedure. As discussed in Section 1, this measure summarizes a country's location in the network. Results are not as stark as for out degree centrality, but the pattern is largely the same. However, although North America is the leading region, its average score is not much higher than that of Europe and Central Asia, which

suggests a greater degree of convergence in regional diversification behaviors than the results using out degree centrality.

Using out degree centrality, it is possible to compute an overall level of centralization of the network. The score on this metric is 0.673, which means in essence that the centrality score of the leading country compared with the centrality scores of the other countries is nearly 70% of what would be observed in the most centralized network that could be constructed with these data. The conclusion is that the global network of trade in agri-food products is therefore relatively centralized, with countries in North America and Europe and Central Asia acting as major global export hubs.

Table 2: Centrality Scores for Agri-Food Products, by Region, 2016

	Out Degree Centrality	Eigenvector Centrality
East Asia & Pacific	68.111	0.054
Europe & Central Asia	114.720	0.078
Latin America & Caribbean	61.128	0.058
Middle East & North Africa	70.667	0.074
North America	137.000	0.082
South Asia	67.875	0.065
Sub-Saharan Africa	35.957	0.052

Source: Authors' calculations.

For the case of agricultural raw materials (Figure 10), trade is again strongly intra-regional (predominance of red lines), although some countries also have important inter-regional links. Regional coherence is weaker in this case than was the case for agri-food products, although there is more evidence of a hub and spoke structure. Sub-networks are centered on Europe (Germany), the Americas (United States), and Asia (China). There are also some countries not connected to any major hub either directly or indirectly.

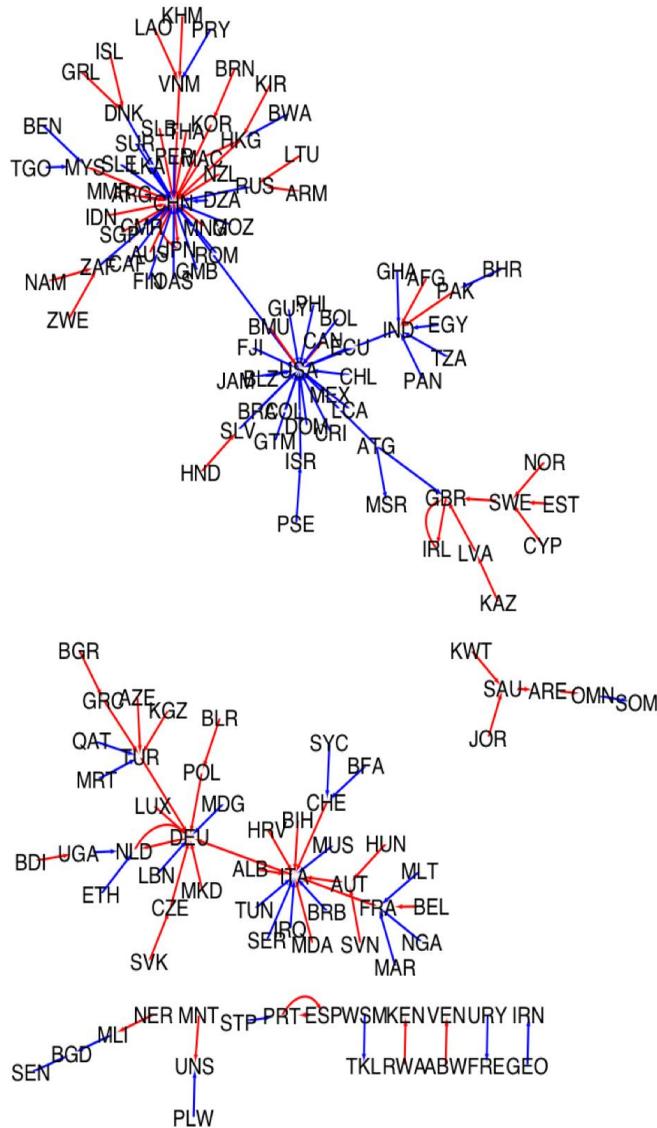
Table 3 shows that the pattern of out degree centrality increasing with per capita income is confirmed for this product group. However, export diversification is more limited for agricultural raw materials than for agri-food products, with the most central region, North America, exporting to 110 countries rather than the 137 observed above. Eigenvector centrality (column 2) confirms these observations, although the differences across regions are again less pronounced than for out degree centrality.

Table 3: Centrality Scores for Agricultural Raw Materials, by Region, 2016

	Out Degree Centrality	Eigenvector Centrality
East Asia & Pacific	45.611	0.052
Europe & Central Asia	78.300	0.081
Latin America & Caribbean	35.846	0.048
Middle East & North Africa	34.286	0.071
North America	110.667	0.087
South Asia	52.625	0.067
Sub-Saharan Africa	21.826	0.040

Source: Authors' calculations.

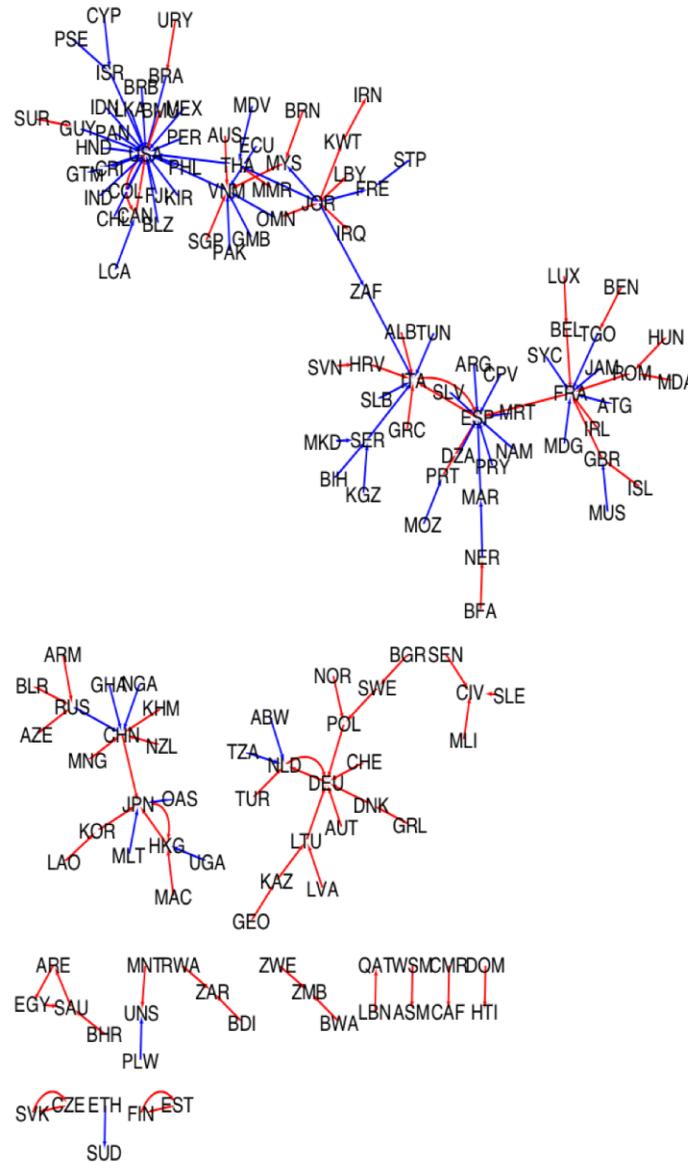
Figure 10: Graphical Representation of the Global Trade Network in Agricultural Raw Materials, Largest Flow Only, 2016



Source: Authors'.

Trade in fish products (Figure 11) is again strongly intra-regional, although some countries also have important inter-regional links. Regional coherence is weaker in this case than was the case for agri-food products. In terms of sub-networks, there are two European regions with some Asian and African connections, along with a diverse network centered on the USA. The lower part of the graph shows a dispersed network of trade among other countries from different regions. The network of global trade in fish products is more dispersed and less responsive to geography than is the case for the other two product groups examined above.

Figure 11: Graphical Representation of the Global Trade Network in Fish Products, Largest Flow Only, 2016.



Source: Authors'

Table 4 shows that centrality is more concentrated in this product group than in the other two. Using out degree centrality as a metric (column 1), North America exports to, on average, over six times as many countries as does Sub-Saharan Africa. Centrality is again approximately increasing in per capita income. Similar insights are apparent from a consideration of eigenvector centrality (column 2), with the dispersion of scores in this case higher than in the other two sectors, which indicates that world exports of fish products are more geographically concentrated than in the other two product groups.

Table 4: Centrality Scores for Fish Products, by Region, 2016

	Out Degree Centrality	Eigenvector Centrality
East Asia & Pacific	41.083	0.058
Europe & Central Asia	48.700	0.077
Latin America & Caribbean	22.949	0.043
Middle East & North Africa	22.857	0.062
North America	92.333	0.095
South Asia	36.125	0.054
Sub-Saharan Africa	14.000	0.039

Source: Authors' calculations.

Network analysis shows that world trade in agricultural products tends to be relatively dispersed, in the sense that although trade within regions plays an important role, inter-regional trade links are also important. Of course, geography means that trade costs are lower between countries in the same geographical region, and that is a factor that promotes intra-regional trade. But geography is also an important determinant of comparative advantage in agricultural trade: relative availability of arable land, as well as weather conditions, determine the types of agricultural products countries can specialize in, as well as patterns of comparative advantage and comparative disadvantage across countries. Whereas trade in manufactured goods is characterized by two-way trade in similar goods, results show that trade in agricultural products is closer to what would be expected from a simple factor proportions model, where countries trade dissimilar goods. This factor explains why inter-regional trade links are relatively important: countries within the same region have relatively similar geographical and climatic characteristics, which leads them to specialize in similar products; as a result, there is less scope than might be expected for commercial exchanges across borders with close neighbors as compared with distant countries. Policy also plays a role in this distribution of agricultural trade, a factor that the next subsection examines.

2.4. Agricultural Trade Policies

Trade in agricultural products is affected by different types of trade policies in all countries. To analyze the course of trade policies over the last two decades, the focus is on changes in ad valorem tariffs over time. Under WTO law, three types of tariffs are of relevance. Bound tariffs are the legal ceilings countries agree to in WTO negotiating rounds, and which are contained in their schedules of commitments. They cannot exceed these rates without the possibility of legal action by trading partners. However, they can apply lower tariffs if they wish. Applied MFN tariffs capture the tariffs actually applied by WTO members on a most-favored nation basis, i.e. a basis of non-discrimination across trading partners. These rates are typically substantially lower than bound rates. Finally, many countries have signed free trade agreements that allow them to impose lower rates with partner countries. These preferential rates, as well as preferences granted unilaterally by developed countries to developing and least developed countries, are captured in the concept of effectively applied rates.

Figures 12 through 14 present applied MFN and effectively applied tariff rates for the three titles identified in the Annex 1 classification. The analysis is undertaken at this level because tariff rates can vary substantially at more disaggregated levels, so it is less feasible to identify wholesale trends as opposed to momentary movements.

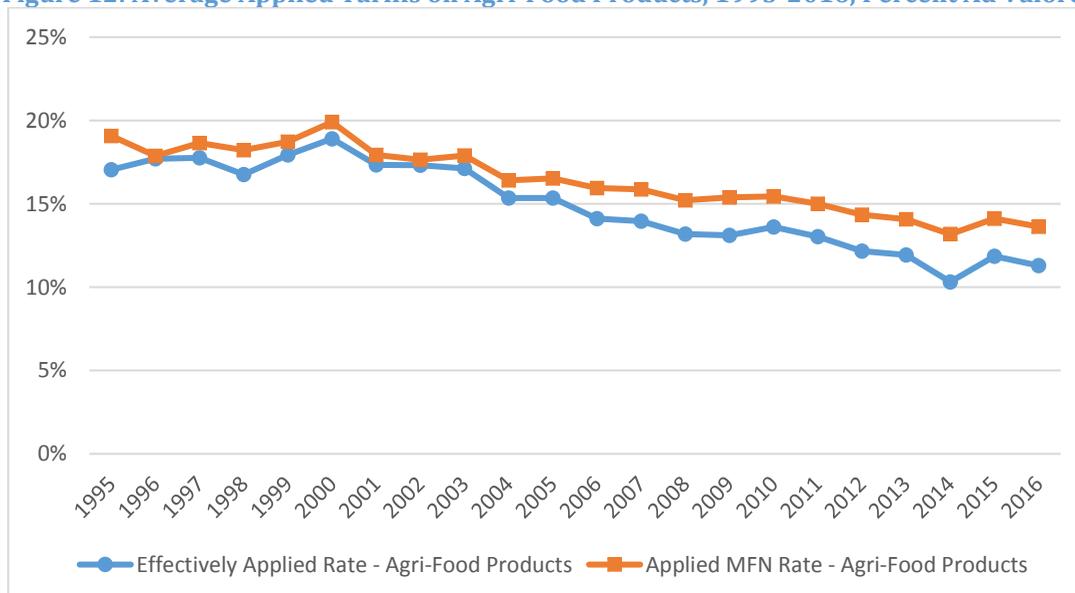
First, both types of applied tariff rates are substantially less than WTO bound rates, as would be expected. For agri-food products, bound rates were nearly four times as high as applied MFN

rates in 2016. For fish products, the difference was about 2.5 times, and for agricultural raw materials it was over seven times. The data therefore indicate that countries typically apply trade policies that are substantially more liberal than their WTO bound rates would suggest. Across sectors, the lowest bound rates are in fish products, followed by agricultural raw materials, then agri-food products. In terms of applied MFN rates, however, the order is different: rates are lowest in agricultural raw materials, then fish products, then agri-food products. The enhanced de facto liberalization of agricultural raw materials is likely driven by their importance as inputs into other industries, such as clothing and apparel, as well as processed foods. For countries interested in developing industrial capacity, it is important to be able to access inputs of high quality at reasonable prices, so there is a clear interest in maintaining relatively low tariffs on agricultural raw materials.

Second, there is clear evidence of liberalization in all three sectors over the last two decades. Applied tariffs, both MFN and including preferences, are trending noticeably downwards, even though bound rates have remained constant due to the lack of effective conclusion to the WTO's Doha Round of negotiations. There is a clear worldwide dynamic towards liberalizing trade in agricultural products across all three sectors.

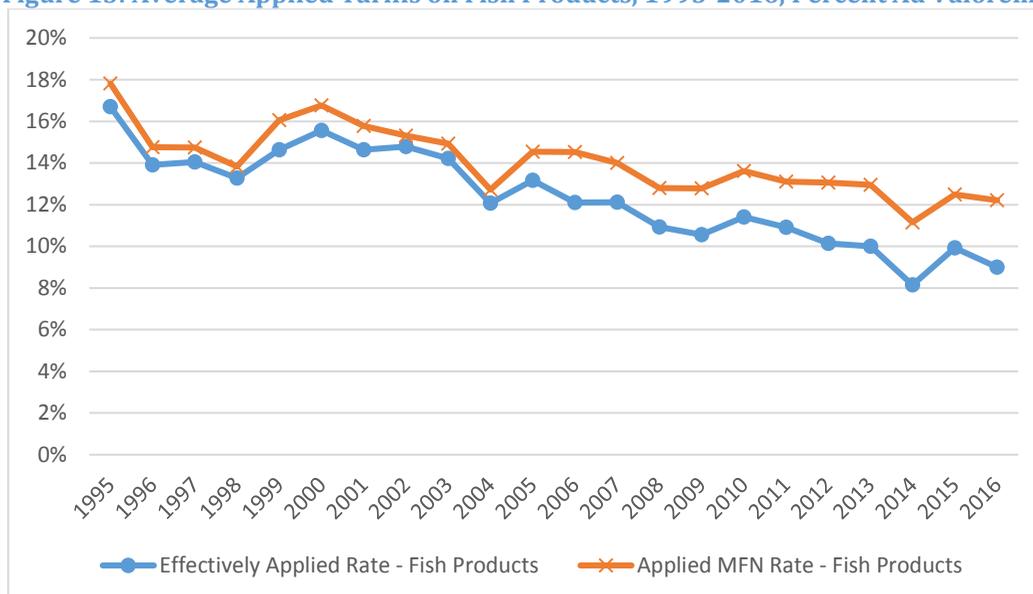
Third, it is important to nuance the previous point by stressing that the downwards trend in tariff rates is more pronounced for effectively applied rates than for applied MFN rates. The implication is that countries are tending to liberalize agricultural trade on a preferential basis rather than a non-discriminatory one. This dynamic is most pronounced in fish products, but is also notable in the other two sectors. This finding is consistent with the rise of regional trade agreements since the WTO's establishment in 1995. However, it is of concern to countries that are not heavily involved in regional agreements, as it suggests that their ability to access trading partners' agricultural markets is becoming relatively more challenging over time, despite liberalization, because preferential partners are being granted superior conditions.

Figure 12: Average Applied Tariffs on Agri-Food Products, 1995-2016, Percent Ad Valorem



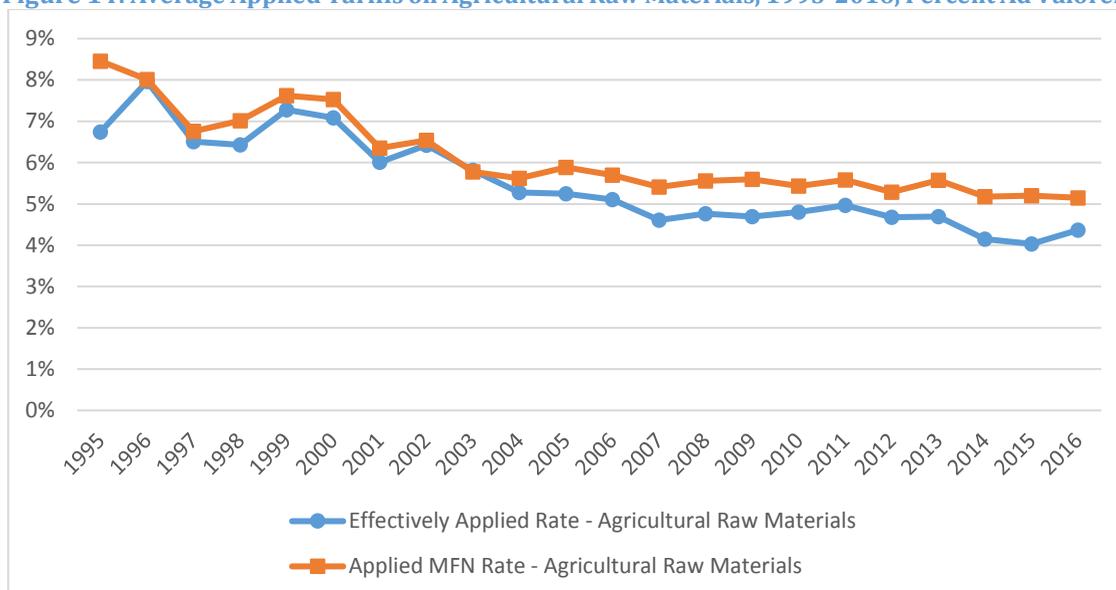
Source: Authors' calculations based on data from WITS-TRAINS.

Figure 13: Average Applied Tariffs on Fish Products, 1995-2016, Percent Ad Valorem



Source: Authors' calculations based on data from WITS-TRAINS.

Figure 14: Average Applied Tariffs on Agricultural Raw Materials, 1995-2016, Percent Ad Valorem



Source: Authors' calculations based on data from WITS-TRAINS.

As tariffs fall worldwide, agricultural products are subject to a dynamic seen in other sectors as well: the increasing importance of NTMs as factors affecting the ability of exporters to access foreign markets. NTMs come in many varieties, but the most important from the perspective of trade in agricultural products are product standards, namely documents setting out characteristics a product must have in order to be allowed access to a market, or to receive a certification seen as important by consumers. For instance, most countries apply maximum residue limits that limit the amount of pesticide that can be present in agri-food products destined for consumers. At the WTO level, these kinds of measures are regulated by the

Agreement on Sanitary and Phyto-Sanitary (SPS) Measures and the Agreement on Technical Barriers to Trade (TBT). In general, countries remain free to deploy appropriate regulations to protect consumers but are required to ensure that there is a scientific basis for it, and that it is not a disguised restriction on trade.

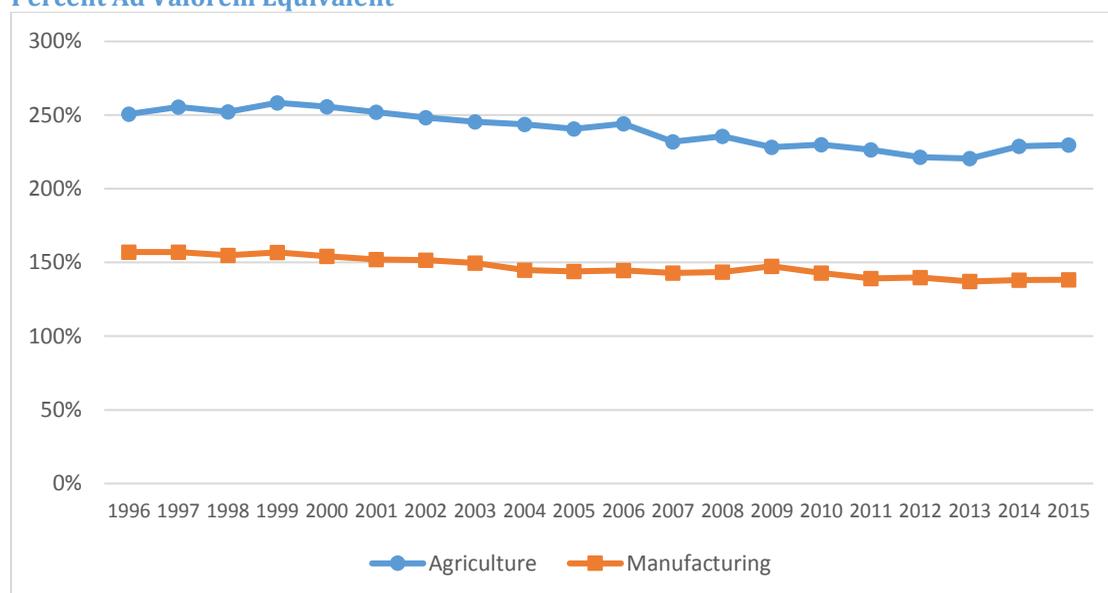
Unlike tariffs, NTMs cannot easily be summarized in a numerical measure. The reason is that they are regulations that are not strictly comparable from one product or measure to another. Some degree of econometric modeling is typically necessary to make an assessment of the restrictiveness of different NTMs. Moreover, there is no comprehensive global database of NTMs in force. The United Nations Conference on Trade and Development (UNCTAD) Trade Analysis Information System (TRAINS) database only provides partial information: it is limited in terms of the types of NTMs it covers, but is also in the course of being extended and updated, so country coverage is limited, in particular in the developing world. Summary measures from TRAINS are not reflective of overall world patterns, but only of data for those particular countries that are included. It is also impossible to produce a dynamic picture similar to the one for tariffs due to limited data availability.

To give a picture of the overall combined impact of tariff barriers and NTMs, the analysis uses an alternative source, the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)-World Bank Trade Costs Database.¹³ This database uses economic theory combined with data on the global pattern of trade and production to infer the ratio of international to domestic trade costs in ad valorem equivalent terms. It implicitly captures all factors that drive a wedge between producer prices in the exporting country and consumer prices in the importing country, including tariffs, as well as the full range of NTMs. Trade costs measured in this way are typically much higher than ad valorem tariffs, because a far wider range of factors are included. Because of limitations in the source data, it is not possible to undertake the analysis using the Annex 1 classification. It is only possible to present data for an aggregate agricultural sector that includes all agricultural goods as used in standard input-output table classifications.

Figure 15 shows that as in the case of tariffs, there is an overall downwards trend in trade costs in agricultural goods. However, it is less pronounced than in the case of manufacturing: trade costs for the latter fell by 12% over two decades, compared with only 8.5% for agriculture. Moreover, trade costs in agriculture are much higher than in manufacturing. Given that manufacturing tariffs are lower than in agriculture in most countries, the difference must be due to NTMs. These data therefore strongly suggest that NTMs are significantly raising trade costs in agricultural sectors. Although the trend is clearly downwards, distortions to world markets for agricultural products remain significantly higher than for manufactured goods. This finding has particular implications for developing countries with significant natural resources but a limited industrial base: it may be harder for them to access foreign markets than it is for exporters of manufactured goods.

¹³ Arvis, J.F., Y. Duval, B. Shepherd, C. Utoktham, and A. Raj. 2016. "Trade Costs in the Developing World: 1996-2010." *World Trade Review*, 15(3): 451-474.

Figure 15: Trade Costs for Agricultural Products and Manufactured Goods, 1996-2015, Percent Ad Valorem Equivalent



Source: UNESCAP-World Bank Trade Costs Database.

2.5. Conclusions and Lessons Learned

The main findings of this section can be summarized as follows:

- OIC member countries tend to be more active in global agricultural trade as importers than as exporters.
- Geographical proximity, as well as regional integration policies, favor a strong regional dimension to flows of global agricultural trade in some sectors, but inter-regional links are more important in others.
- Consistent with the regional dimension of global agricultural trade, most liberalization has tended to take place within regional agreements. RTAs therefore need to be high on the policy agenda of countries intending to integrate further into world agricultural markets.
- Whereas trade in manufactured goods is often in similar product categories bilaterally, trade in agriculture is typically driven by differences in environmental and geographical conditions that affect agricultural productivity, and thus trade is usually in dissimilar products.
- In terms of comparative advantage, which is an indicator of future export growth, the following findings stand out:
 - South Asia has strong comparative advantage in sectors like meat, fish and crustaceans, cereals, vegetables, sugar products, and crude materials relative to other agricultural sectors.

- East Asia and the Pacific has its strongest comparative advantage in animal and vegetable fats and oils, as well as crude materials, and other edible products and cereals.
 - Europe and Central Asia has its strongest comparative advantage in dairy, cereals, and other edible products.
 - For Latin America and Caribbean, it is meat, cereals, and sugar products.
 - For the Middle East and North Africa, the strongest comparative advantage is in cereals, sugar products, other edible products, and oils and fats.
 - For North America, there is evidence of comparative advantage in cereals, live animals, meat, and animal feed.
 - For Sub-Saharan Africa, the relevant products are live animals, cereals, and crude materials.
- In terms of networks, global trade in agricultural products is shaped by competing aspects of geography: proximity lowers trade costs, but also results in more similar environmental conditions, and thus reduced scope for trade in dissimilar products. These two forces produce different patterns of dispersion of centralization in different sectors.

Tariffs and non-tariff measures raise the costs of moving agricultural products between countries; although there is evidence that tariff rates are falling over time, other sources of trade costs remain substantial.

3. ANALYSIS OF THE AGRICULTURAL TRADE PERFORMANCE OF OIC MEMBER COUNTRIES

This section moves from a consideration of global trends in agricultural trade to the performance of OIC member countries. For exports and imports separately, the ten leading products are identified for each OIC regional group based on the average of the three most recent years of data. Table 5 presents consolidated results. Given overlap in some cases between the leading products of different regions, this process identifies 18 product groups. The fact that this number is substantially less than the thirty groups that would be indicated by completely independent product baskets across OIC regions indicates that there is in fact some degree of commonality across regions in terms of the most important products. In addition, a comparison of exports and imports shows that there is also considerable overlap between the most important export products and the most important import products.

Table 5: Leading Traded Products, OIC

Product
Live animals other than animals of division 03
Fish and crustaceans, chilled or frozen
Cocoa and chocolate
Tobacco
Oil seeds
Crude rubber
Cork and wood
Cotton
Rice
Palm oil
Bread products
Vegetables
Fruit and nuts
Coffee
Other edible products
Rest of 06 (sugars, sugar preparations, and honey)
Rest of 4 (animal and vegetable oils, fats, and waxes)

Source: Authors' calculations based on UN Comtrade Data.

3.1. Composition and Patterns of Agricultural Trade

This subsection considers exports and imports separately, and looks at the product composition of trade flows, as well as their direction between OIC regional groups. In all cases, product groups are as defined in Table 5. The Annex 1 classification identifies 55 different product groups at its most disaggregated level. Although sectors can be important components of exports at the aggregate level, the same is not typically true of highly disaggregated products. To put this point in perspective, the analysis therefore shows the percentage of each group's total exports accounted for by the products listed in Annex 1. In all cases, there is a comparison of 2005 and 2016 to show the evolution of these product shares over time.

Table 6 shows results for the three OIC regional groups. Moving from left to right, the table shows that the African Group has seen an overall increase in export diversification within the agricultural products sector, as the percentage of total exports accounted for by the leading products has fallen significantly over the last decade. The other two groups, by contrast, have seen their export bundles become slightly less diversified. However, it started from a very high level, so it is still appropriate to characterize the group's export basket as highly concentrated. The Asian Group has also diversified its export bundle slightly over the last decade, whereas the Arab Group's exports have become slightly more concentrated. In all three groups, there are individual products that account for large amounts of total exports: cotton (15%) and cocoa (16%) in the case of Africa, vegetables and fruits and nuts (12% in the case of the Arab Group, and palm oil (29%) for the Asian Group. The implication of this finding is that changes in the world market prices of a small number of commodities can potentially have large impacts on the export earnings of countries in all three groups, although the extent of this effect varies depending on the proportion of agricultural exports in total exports, which is highest for Africa.

Table 6: Leading Products, Percent of Total Agricultural Exports, by OIC Regional Group, 2005 and 2016

	African Group		Arab Group		Asian Group	
	2005	2016	2005	2016	2005	2016
Live animals	1.72	3.22	3.26	1.63	0.75	0.34
Tobacco	2.45	6.83	2.36	4.49	3.20	3.11
Oil seeds	0.89	5.55	0.90	0.30	0.36	0.89
Crude rubber	3.67	1.19	0.11	0.20	10.77	6.21
Cork and wood	14.04	6.71	0.42	0.24	5.63	3.20
Rice	0.61	2.55	3.18	0.26	3.02	2.44
Vegetables	1.25	2.43	10.33	11.89	2.68	2.04
Fruit and nuts	5.25	5.54	9.78	11.85	11.04	6.86
Coffee	4.94	5.87	0.41	0.48	1.55	2.30
Other edible products	1.35	3.20	2.04	4.85	1.99	3.84
Cotton	15.00	15.00	3.90	0.46	1.36	0.59
Bread products	0.16	0.19	1.94	3.36	1.51	2.59
Palm oil	1.24	2.32	0.50	0.70	20.55	28.64
Fish and crustaceans	7.34	6.58	12.34	10.12	7.44	5.65
Cocoa and chocolate	32.15	15.92	1.51	1.97	3.68	3.83
Rest of 06	0.39	0.40	4.55	7.24	0.75	0.76
Rest of 04	0.57	0.96	0.42	0.45	2.43	3.45
Total (Leading Products)	93.01	84.44	57.96	60.48	78.71	76.75

Source: Authors' calculations based on UN Comtrade Data.

Patterns of recent export growth at the product level are quite different across the three regional groups. In the African Group, the fastest growing export product was oil seeds (18.3% per annum), followed by rice (14.1% per annum) and tobacco (9.9% per annum). For the Arab Group, export growth was most rapid for other edible products (16.1% per annum), followed by tobacco (13.8% per annum), and bread and similar products (12.8% per annum). Finally, for the Asian Group, the three fastest growing export products were oil seeds (16.0% per annum), other edible products (13.5% per annum), and bread products (12.3% per annum).

At the regional level, there is no evidence of product-level export diversification: all regions exported at least some of all of the key products in 2005. At the level of individual countries, however, there is mixed evidence of product-level export diversification and concentration (Table 7). To conduct this analysis, data for 2005 and 2016 are compared. If a country did not export a product in 2005 but did in 2016, that is counted as a “new” product, i.e. evidence of export diversification. On the contrary, if a country exported a product in 2005 but did not in 2016, that is counted as a “product exit”, or evidence of increasing export concentration. The pattern across countries is mixed. Bangladesh, for example, is substantially more concentrated in key products, as are Cote d’Ivoire, Guinea, Qatar, Iran, and Syria. On the other hand, substantial diversification is evident in Brunei, Kuwait, Nigeria, and Sierra Leone. Most countries see little activity in either sense, which is evidence of a relative consistency in their key product export bundle over time. This finding is consistent with evidence elsewhere in the report to the effect that trade patterns exhibit a reasonable amount of stability through time.

Table 7: Export Diversification and Concentration among OIC Countries, 2005-2016, Key Products

Country	No. of New Products	No. of Product Exits
Afghanistan	4	0
Albania	1	1
Algeria	1	1
Azerbaijan	4	0
Bahrain	3	0
Bangladesh	0	15
Benin	3	0
Brunei	14	0
Burkina Faso	3	1
Cameroon	1	0
Comoros	0	3
Cote d'Ivoire	0	17
Egypt, Arab Rep.	0	0
Gabon	0	13
Gambia, The	7	1
Guinea	0	13
Guyana	1	0
Indonesia	0	0
Iran, Islamic Rep.	0	17
Iraq	2	6
Jordan	0	1
Kazakhstan	1	0
Kuwait	17	0
Kyrgyz Republic	2	0
Lebanon	0	0
Malaysia	0	0
Maldives	1	9
Mali	3	1
Mauritania	3	0
Morocco	1	0
Mozambique	4	0
Niger	1	1
Nigeria	14	0
Occ.Pal.Terr	0	3
Oman	3	0

Country	No. of New Products	No. of Product Exits
Pakistan	1	0
Qatar	0	15
Saudi Arabia	0	3
Senegal	0	0
Sierra Leone	16	0
Suriname	1	1
Syrian Arab Republic	0	16
Togo	0	0
Tunisia	1	1
Turkey	0	0
Turks and Caicos Isl.	0	5
Uganda	0	0
United Arab Emirates	0	0
Yemen	0	17

Source: Authors' calculations based on UN Comtrade Data.

Table 8 moves the analysis to the import side. For all three groups, import baskets are more diversified than export baskets in the product dimension. For the African and Asian Groups, there is evidence of greater diversification over time, although the opposite is true in the case of the Arab Group. As of 2016, the Asian Group had the most concentrated import bundle, followed by the African Group, then the Arab Group. However, at the product level, rice imports into Africa stand out as representing a large, but declining, share of total agricultural imports, at 17.7% in 2016.

Table 8: Leading Products, Percent of Total Agricultural Imports, by OIC Regional Group, 2005 and 2016

	African Group		Arab Group		Asian Group	
	2005	2016	2005	2016	2005	2016
Live animals	0.43	0.12	3.92	2.26	0.71	2.23
Tobacco	5.58	3.13	4.86	4.96	4.25	3.32
Oil seeds	0.44	0.27	2.41	2.26	6.31	6.86
Crude rubber	0.18	0.14	0.38	0.38	5.37	5.42
Cork and wood	1.32	0.48	5.72	3.97	3.39	2.00
Rice	28.58	17.73	3.84	3.40	2.85	1.85
Vegetables	2.10	2.03	3.50	4.40	3.24	5.39
Fruit and nuts	1.06	0.96	4.20	5.90	2.95	4.88
Coffee	0.54	0.81	1.24	1.55	0.61	1.20
Other edible products	6.19	8.52	4.18	6.66	4.03	5.37
Cotton	0.01	0.08	0.43	0.25	9.35	4.89
Bread products	0.71	0.45	1.05	2.25	0.56	0.86
Palm oil	4.22	7.12	2.18	1.57	6.00	4.02
Fish and crustaceans	6.92	8.82	1.30	2.17	1.97	2.07
Cocoa and chocolate	0.30	0.28	1.46	2.55	2.82	3.88
Rest of 06	4.22	3.81	2.44	1.82	3.02	1.41
Rest of 04	0.77	0.50	0.27	0.18	0.72	0.75
Total (Leading Products)	63.55	55.25	43.36	46.54	58.14	56.40

Source: Authors' calculations based on UN Comtrade Data.

Import growth in the African Group has been most rapid for cotton (26.8% per annum), palm oil (14.0% per annum), and cocoa (13.5% per annum). For the Arab Group, import growth has been most rapid in crustaceans (18.1% per annum), bread products (15.1% per annum), and chocolate products (13.1% per annum). In the Asian Group, the three fastest growing import categories were live animals (18.8%), coffee (13.9% per annum), and chocolate products (12.6% per annum).

Taking these results together, there is clear evidence of trade dynamism at a disaggregated level in all regional groups. From the point of the OIC as a trade network, however, it is also important to look at the direction of trade. Figure 16 shows a breakdown of the African Group's exports by destination region, distinguishing between the three OIC regional groups, and an aggregate non-OIC group. In 2005, the African Group's exports in most product categories went overwhelmingly to non-OIC countries, and to other African countries. It is expected to see strong intra-regional dimension to the trade network, but some products, like cocoa and chocolate, fruits and nuts, and crude rubber are exceptions, with little intra-African trade. To the extent that there is a pattern, it suggests that staple products are the most traded intra-regionally, while inputs into food processing industries are typically traded more distantly, given the relative lack of industrialization regionally. Although the basic pattern is the same in 2016, with exports dominated by intra-regional flows and flows to non-OIC countries, there is a significant change in terms of the increasing importance of the Asian Group as a destination for the African Group's exports in sectors like cocoa and chocolate, palm oil, and cotton. This dynamic is driven by the fact that these goods are inputs into the production of labor-intensive manufactured goods, such as processed food products, and textiles and garments. Asian members have been developing these industries strongly over recent years, with consequence derived demand for inputs, which is partially supplied by other OIC countries. For coffee, the Arab Group remains an important destination market

Figure 17 presents a similar analysis for the Arab Group. In 2005, trade within the Arab Group was more strongly intra-regional than trade in the African Group, and trade with non-OIC members was relatively more important. Among other OIC regional groups, only the Asian Group was a significant export destination in 2005. The same general picture of strong intra-regional trade links persists into 2016, but there is a noticeable rise in exports to non-OIC members, typically at the expense, in relative terms, of exports to the Asian Group. One likely driver is regional integration efforts between some Arab Group members and the European Union (non-OIC). Policy changes, including trade agreements, have a significant impact on trade flows, and could be a partial explanation of this change. This dynamic is the opposite of what was seen for the African Group, where exports to the Asian Group increased in relative importance over the last decade, largely in the absence of formal trade agreements.

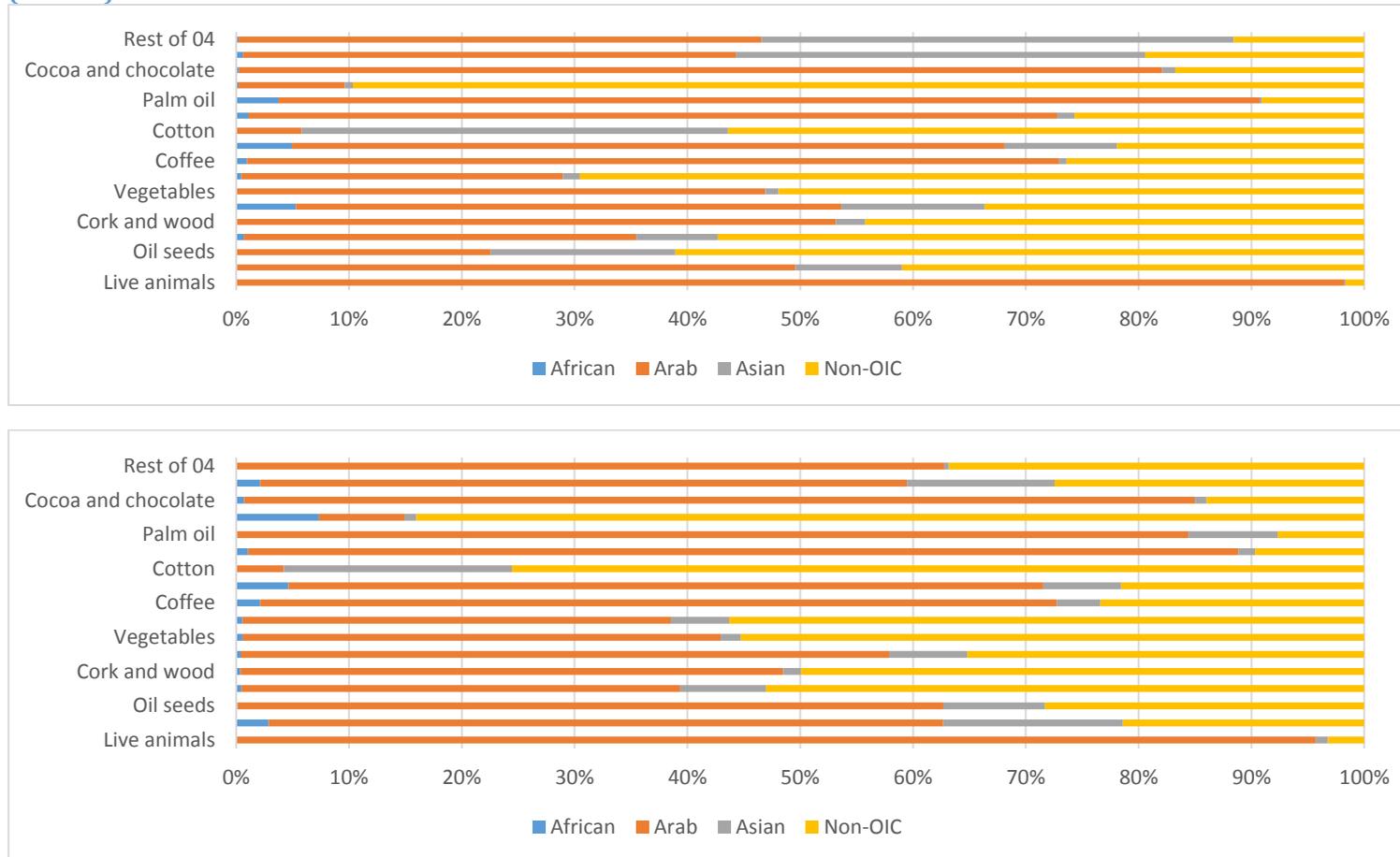
Finally, Figure 18 contains an analysis of the trade network for the Asian Group. In 2005, exports to non-OIC members were dominant in most sectors, although intra-regional exports were also important in some cases as well. This dynamic in part reflects the extension of regional integration agreements within Asia, but including a mix of OIC member countries and non-members. Exports to the Arab Group are significant in relative terms in cocoa and chocolate, palm oil, vegetables, rice, and live animals. Only in the case of rice are exports to the African Group significant. 2016 was characterized by a relatively similar distribution of exports across destination regions as in 2005.

Figure 16: Breakdown of the African Group's Exports of Leading Products, Percent of Total by Destination Region, 2005 (Top) and 2016 (Bottom)



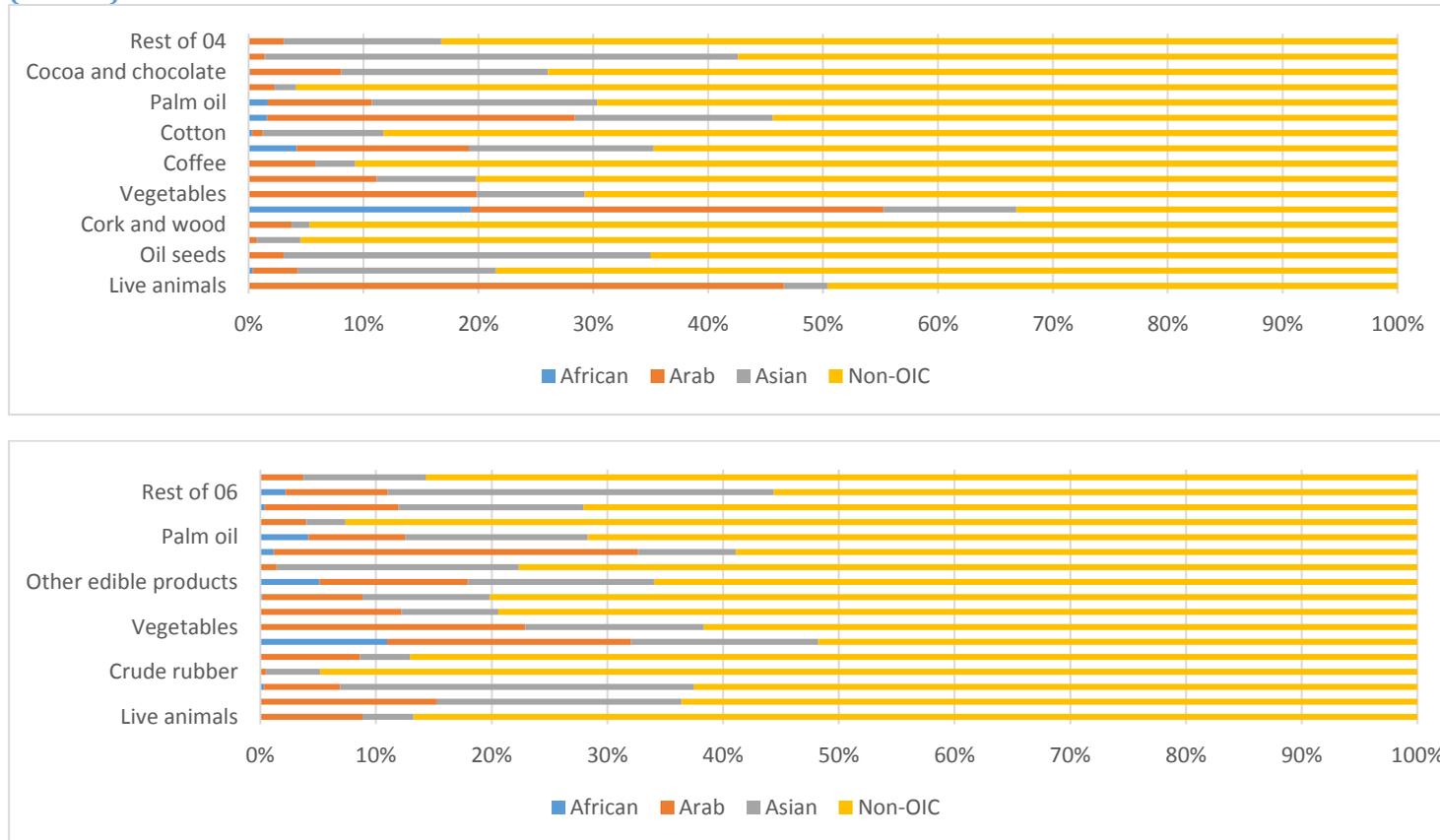
Source: Authors' calculations based on UN Comtrade Data.

Figure 17: Breakdown of the Arab Group's Imports of Leading Products, Percent of Total by Destination Region, 2005 (Top) and 2016 (Bottom)



Source: Authors' calculations based on UN Comtrade Data.

Figure 18: Breakdown of the Asian Group's Exports of Leading Products, Percent of Total by Destination Region, 2005 (Top) and 2016 (Bottom)



Source: Authors' calculations based on UN Comtrade Data.

The conclusion for the above figures is that there is no single trade network among OIC countries in agricultural products. Rather there are specific inter-regional linkages that are of importance for particular products, but they do not generalize even across all leading product categories. Moreover, exports to non-OIC countries are very important for most regional groups and most product categories. In part, this reflects the fact that geographical entities like Africa and Asia have economic coherence but include OIC member countries as well as non-member countries. This geographical coherence is increasingly supported by formal trade agreements, which lead to lower trade costs between some OIC member countries and selected non-members. This effect is on top of geographical proximity, which serves to reduce trade costs. In the case of the Arab region in particular, there are also linkages with neighboring non-OIC regions, such as the EU. As a result of these factors, the intra-regional trade links referred to in the analysis of the global trade network in Chapter 2 still holds true, but tends to link OIC and non-OIC countries within the same geographical entity.

These insights are confirmed by an analysis of the average distance of exports for leading products (Table 9). Results are presented as an export-weighted average of the distance between exporters and importers by exporting regional group. For the African Group, a comparison of 2005 and 2016 results shows that average distance has typically increased markedly, which is consistent with the increasing importance of trade links with Asia, previously referred to. Even though the importance of non-OIC trade is substantial for the other two groups as well as Africa, average distance has not changed much for them in the last decade, and has even decreased for a significant number of product categories. These results are consistent with an increasingly inter-regional trade network for agricultural products in Africa, but sustained importance of intra-regional links elsewhere. It is also consistent with a significant proportion of non-OIC trade taking place within regions as understood geographically, but covering OIC and non-OIC countries alike.

Table 9: Average Distance of Exports, by Leading Product, OIC Regional Groups, 2005 and 2016, Km

	African Group		Arab Group		Asian Group	
	2005	2016	2005	2016	2005	2016
Live animals	1649	973	1212	1195	861	866
Tobacco	2649	4305	1656	1577	3984	3475
Oil seeds	3809	8656	4326	2230	2848	3359
Crude rubber	5268	5630	3692	3952	9624	8423
Cork and wood	6391	7903	1072	2190	5770	5886
Rice	875	7512	2015	2066	4797	4574
Vegetables	2251	3806	1534	1969	2229	2039
Fruit and nuts	6317	7168	2387	2691	2748	2956
Coffee	4600	5950	3109	2640	9788	7425
Other edible products	1149	1650	2045	2330	3585	4144
Cotton	7432	8437	4264	4324	3555	3942
Bread products	1138	1175	2424	1427	3275	3463
Palm oil	2076	8312	1611	1324	6372	6697
Fish and crustaceans	5177	5832	3962	3859	8267	7383
Cocoa and chocolate	6263	6088	1620	1540	7523	6449
Rest of 06	3029	1827	2330	2624	2397	3614
Rest of 04	2954	6075	1559	1912	8692	8521

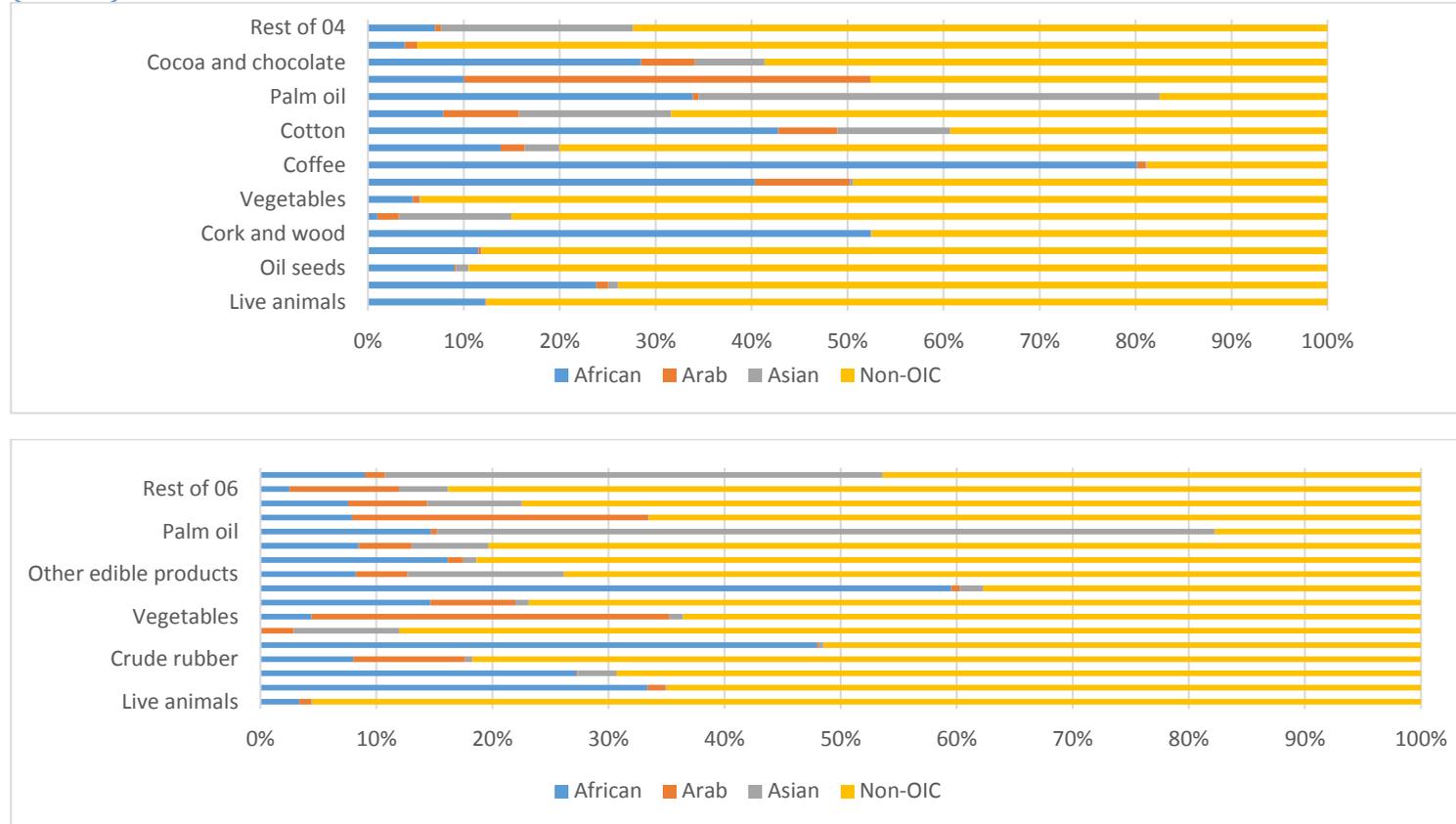
Source: Authors' calculations based on UN Comtrade Data. Note: Average distances are weighted by export flows.



In terms of the geographical distribution of trade flows among OIC members, the focus thus far has been on the export side. The remainder of this subsection turns to the import side. Figure 19 shows that in 2005, the African Group sourced most of its imports from outside the OIC, but that intra-African trade was important in some product categories, like coffee and cork and wood, and also imports from the Asian Group in sectors like palm oil, as well as from the Arab Group in fish and crustaceans. Then in 2016, a similar pattern existed, with heavy reliance on imports from outside the OIC in most product categories. Imports from the Arab Group had become increasingly important in the vegetables sector, while imports from Asia had become more dominant in palm oil, potentially crowding out some intra-African trade. As noted in the section on exports, geography and regional integration policies combine to support intra-regional relationships observed in some cases, while imports from outside the region are largely driven by stronger comparative advantages elsewhere, combined with falling tariff barriers (see below).



Figure 19: Breakdown of the African Group's Imports of Leading Products, Percent of Total by Origin Region, 2005 (Top) and 2016 (Bottom).



Source: Authors' calculations based on UN Comtrade Data.

Figure 20 shows a similar analysis for the Arab Group. Imports from outside the OIC were again dominant in 2005, although there were some important instances of intra-regional trade, such as bread products, live animals, and fish and crustaceans. Similarly, the Asian Group played a large role as a source of imports of palm oil and rice. This pattern was accentuated over the following decade, so that imports from outside the OIC were generally dominant in 2016. There were still important instances of intra- and inter-regional trade within the OIC, but the general trend was towards greater import sourcing from outside the organization's membership. As in the case of exports, this dynamic is driven by linkages with neighboring regions, particularly the EU, as well as patterns of comparative advantage elsewhere, such as in Asia.

Finally, Figure 21 presents the situation for the Asian Group. In 2005, the Asian Group was even more reliant than the other two regional groups on imports sourced from outside the OIC, with the exception of sectors where intra-regional trade was important, like palm oil and cereals, as well as a small number of products where import sourcing from the Arab Group was significant, and notable imports of cocoa products from the African Group. By 2016, this pattern had largely accentuated, with greater reliance on imports from outside the OIC. However, import sourcing from the African Group had grown in relative terms in cocoa and cotton, while import sourcing from the Arab Group had generally weakened. Intra-regional trade remained significant, but only in selected sectors, essentially reflecting the pattern a decade earlier. These relationships reflect dynamics already referred to in the context of exports, such as enhanced regional integration within Asia between OIC members and non-members, as well as the rise of manufacturing and consequent demand for raw materials from other parts of the world.

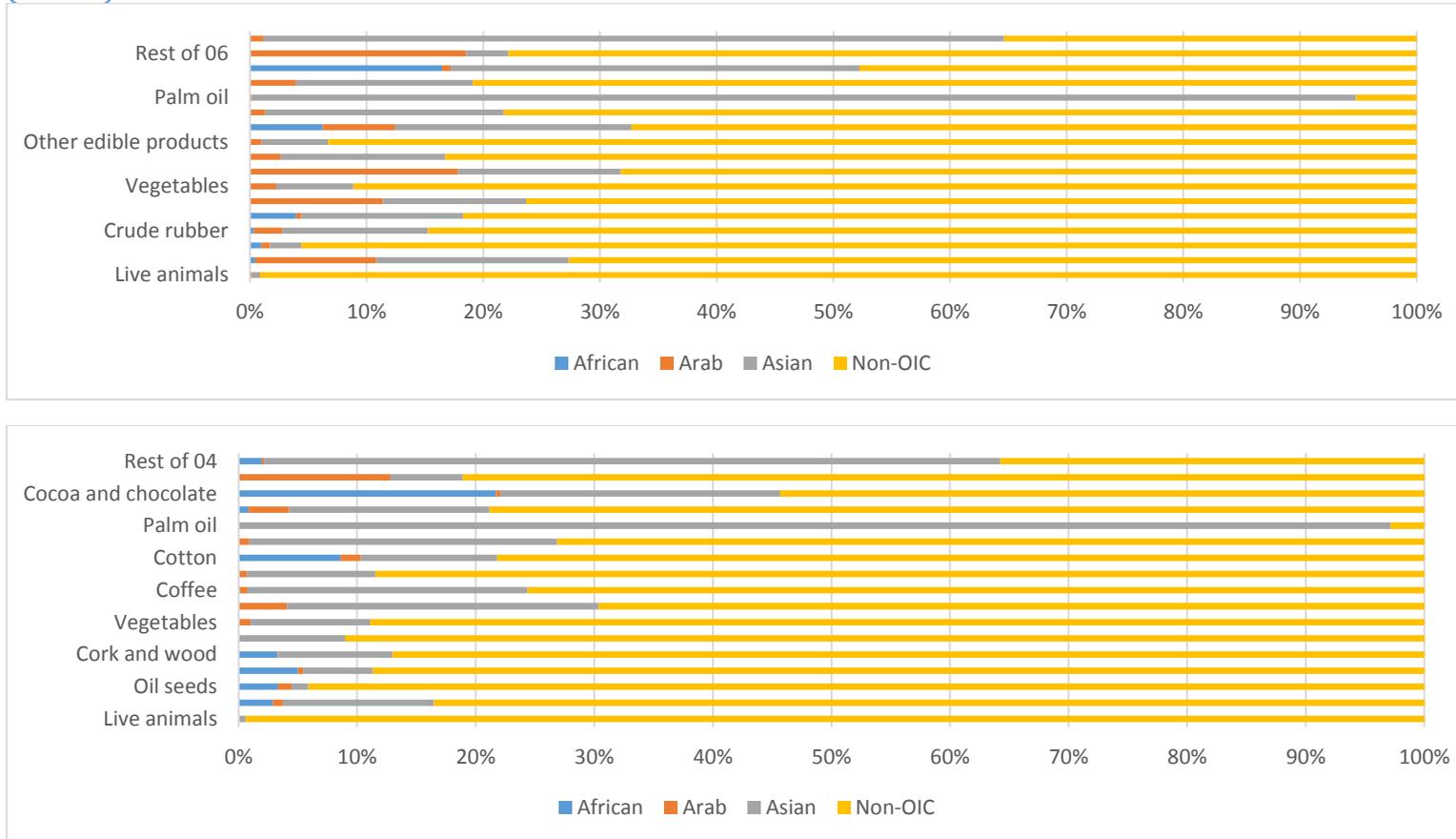
Figure 20: Breakdown of the Arab Group's Imports of Leading Products, Percent of Total by Origin Region, 2005 (Top) and 2016 (Bottom)



Source: Authors' calculations based on UN Comtrade Data.



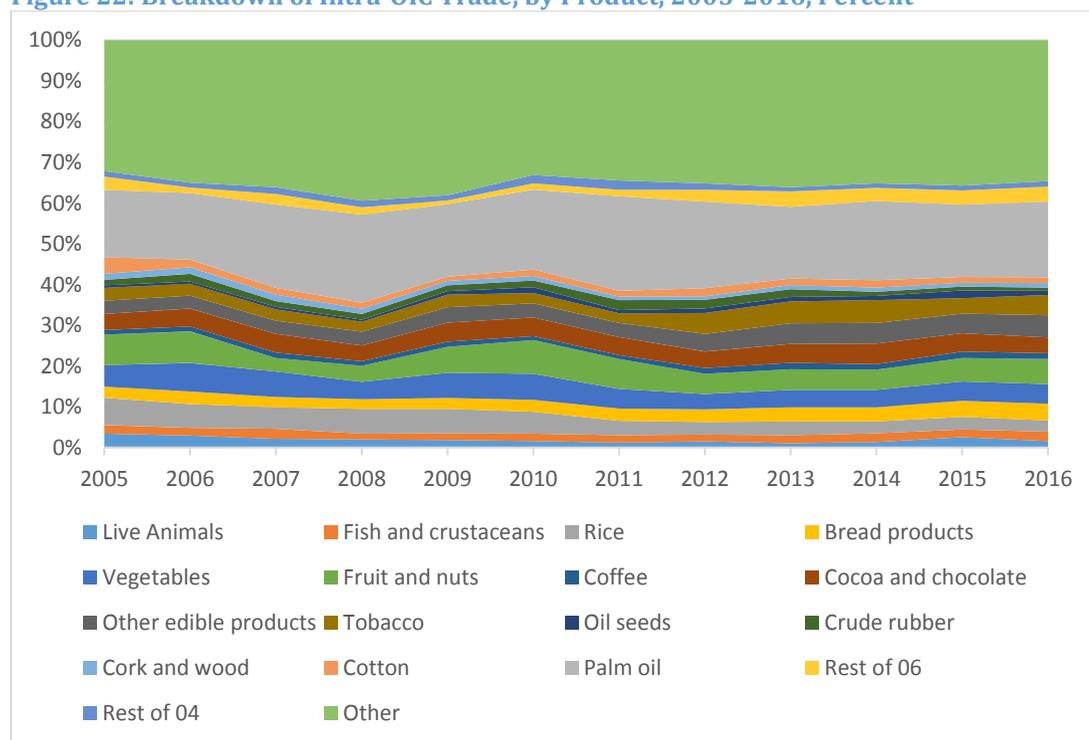
Figure 21: Breakdown of the Asian Group's Imports of Leading Products, Percent of Total by Origin Region, 2005 (Top) and 2016 (Bottom)



Source: Authors' calculations based on UN Comtrade Data.

To analyze intra-OIC trade in agricultural products further, it is informative to examine the product composition of trade relations within the organization over time, focusing on the leading products identified above. Figure 22 shows the evolution of product shares over the last decade. Focusing on the ten leading products from each of the three regional groups on the export and import sides allows us to capture nearly 70% of total intra-OIC trade. This proportion is relatively stable over time except for 2008-2010, when trade flows were likely significantly affected by the Global Financial Crisis. Looking at the product categories in detail, it is clear that by value, palm oil is the most important product for intra-OIC trade, followed by vegetables and fruit and nuts. Most product shares are relatively stable over time, but there is a noticeable decline in the importance of rice within intra-OIC trade. Given that rice is generally becoming more important as a staple in the developing world, including in Africa, this dynamic likely shows that importers are diversifying their suppliers outside the OIC, in particular to focus on competitive producers in non-OIC Asia. These results generally show that intra-OIC trade is quite concentrated in product terms, and that there is a certain stability in the relative proportions of trade flows accounted for by different products over time. However, Figure 22 does not show growth in intra-OIC trade in agricultural products, which increased nearly 2.5 times over a decade, from \$15.4bn in 2005 to \$37.3bn in 2016.

Figure 22: Breakdown of Intra-OIC Trade, by Product, 2005-2016, Percent



Source: Authors' calculations based on UN Comtrade Data.

3.2. Networks in Intra-OIC Agricultural Products Trade

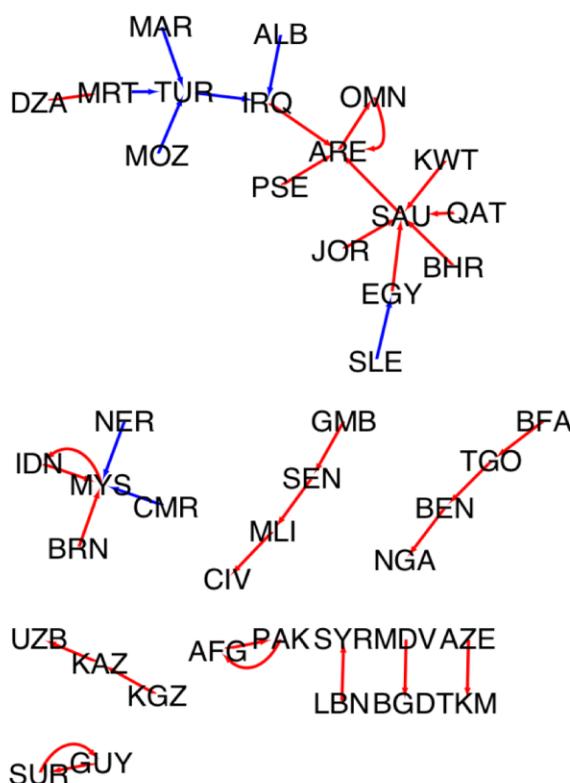
Combining results on the export and import sides above reinforces the finding previously mentioned that the trade networks of OIC member countries are relatively dispersed and decentralized in geographical terms. In policy terms, it is difficult to characterize a single OIC trade network as such, because member countries are typically highly reliant on exports to and imports from non-OIC countries. As shown in Chapter 2, there is some degree of geographical coherence within networks in some regions, but since geographical entities group together countries that are OIC members and others that are not, the result is that from the standpoint of the organization, trade relations remain dispersed. Having said that, there is clear evidence of important intra- and inter-regional links among OIC member countries, but there is no clear trend across time or products: results are highly specific to particular contexts, so policymakers need to be alive to product and regional specificities to a more than usual degree when analyzing their agricultural trade relations.

This section uses network analysis tools to summarize and interpret these findings for intra-OIC trade in agricultural products. The analysis is undertaken at a relatively aggregate level, namely the title level of the Annex 1 classification, because network analysis requires a relatively dense trade matrix to be meaningful, and the data move in the opposite direction (i.e., more zero entries) as they become more disaggregated. The title level is sufficient in this case to provide the necessary information as to intra-OIC trade linkages. Analysis at a more disaggregated level, such as individual products, would not provide meaningful policy insight due to the large number of zeros in the bilateral trade matrix.

By contrast with the network analysis in Chapter 2, this case only considers trade flows among OIC members. Non-OIC trade flows are excluded from consideration, so as highlighted above, that necessarily focuses the analysis on a modest proportion of total trade for most countries. Again, consideration is only given to the largest trade flow of each country to make graphical analysis possible. In this case, intra-(red) and extra-regional (blue) trade are identified using the three OIC regional groups. The discussion again proceeds descriptively, based on network diagrams produced using the same algorithm as in Chapter 2.

For agri-food products, once non-OIC trade is excluded and the focus is on the largest remaining trade flow, it is immediately clear that there is a strong regional element to intra-OIC trade in this sector (Figure 23). Most OIC member countries have their largest intra-OIC trade flow with a country in the same regional group, as indicated by red lines. There are exceptions, of course, but as a general rule, intra-OIC trade has a strong regional dimension. This finding sits well with the idea, noted above, that geographical proximity as well as regional integration initiatives play an important role in determining trade flows. In terms of sub-networks, there is evidence of a network within the OIC Arab Group, centered on Turkey, the UAE, and Saudi Arabia, which also played a hub role in global trade (see Chapter 2). In addition, there is a small Asian network and two African networks, but there is also evidence of bilateral linkages that cannot easily be interpreted in network terms.

Figure 23: Graphical Representation of the Intra-OIC Trade Network in Agri-Food Products, Largest Flow Only, 2016

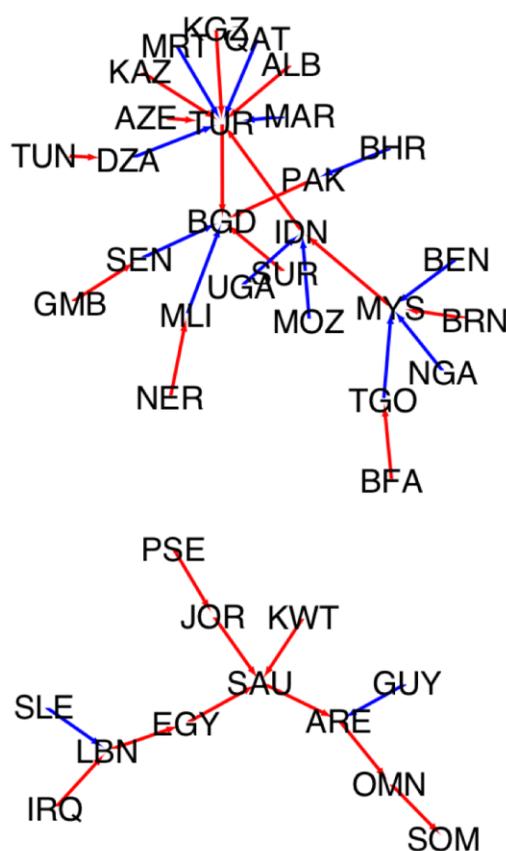


Source: Authors.

For agricultural raw materials, there is again evidence of a strong intra-regional dimension of intra-OIC trade in agricultural products (Figure 24): it is again largely predominant in this sector. An important point of difference, however, is that the network for agricultural raw materials is much more centralized than for agri-food products. Two countries, Turkey and Saudi Arabia, act as largely independent hubs for two sub-networks covering the other regional groups. This presentation is, of course, highly stylized, as it considers only each country's largest intra-OIC trade flow, but it is nonetheless informative in terms of highlighting the role of hub economies in this sector. One reason for this point of distinction with respect to the agri-food sector is that raw materials are typically inputs into the production of manufactured goods, including processed foods, whereas agri-food products can be both inputs and final consumption products. The presence of hub countries in this case is a significant feature of the intra-OIC trade network in agricultural raw materials, and it suggests that on a policy level, individual exporters benefit from their connections with these two hubs. As such, integration efforts in a broad sense—extending to transport connectivity as well as policy measures in the trade and agricultural spheres—need to take account of the hub and spoke structure of the trade network in this case.

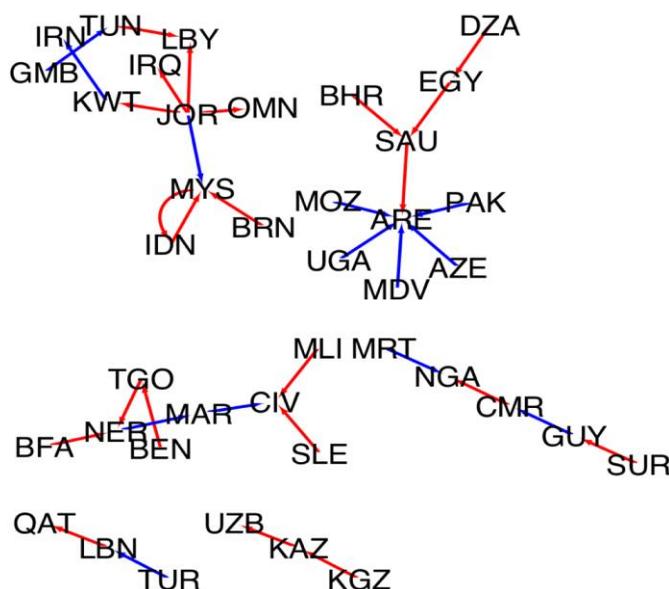
The network for fish products (Figure 25) is more decentralized than the network for agricultural raw materials, again likely reflecting the fact that fish products tend to be final consumption goods rather than intermediate inputs. Trade is again strongly intra-regional, with a predominance of largest intra-OIC trade flows being within the same regional group. The sub-networks do not have an obvious interpretation in policy terms, as they tend to bring together countries from different regional groups but not in a consistent way. The somewhat anomalous nature of the fish products network was further investigated using more disaggregated data at the COMCEC Group level. This research shows that there is very little trade in fresh fish among OIC member countries, so the sector is dominated by trade in processed products. The fisheries sector is unusual among agricultural products in that trade data ascribe an export location for processed products based on the location of the processing plant, even if the fish were caught elsewhere, or were caught by a vessel under a different country's flag. As such, assigning origin is more challenging in this sector than for the others considered, and this point may go some way to explaining why there is no clear pattern in terms of intra-OIC trade using network analysis

Figure 24: Graphical Representation of the Intra-OIC Trade Network in Agricultural Raw Materials, Largest Flow Only, 2016.



Source: Authors'.

Figure 25: Graphical Representation of the Intra-OIC Trade Network in Fish Products, Largest Flow Only, 2016.



Source: Authors’.

To flesh out the above findings, it is possible to calculate degree centrality scores for the intra-OIC trade network. In this case, it is possible proceed at a fully disaggregated level, looking at the leading products identified at the start of this Chapter. Given that the analysis is dealing with a sub-network, it is only feasible to calculate degree centrality, which has a convenient substantive interpretation in terms of the level of export diversification. Eigenvector centrality is not calculated, as it only has a meaningful interpretation when the full network (i.e., global trade) is considered.

Another way of looking at the data is through the lens of network analysis. Specifically, Table 10 uses out degree centrality to examine changes in geographical diversification of exports at the product-level over the last decade. It considers intra-OIC trade flows only. For the African Group, there is diversification for some product lines (higher out degree centrality), but other product categories show increasingly concentrated exports. By contrast, the Arab Group and the Asian Group show reasonably uniform evidence of export diversification across product categories. From the perspective of the trade network, these changes mean that for the two latter groups, their network is becoming more decentralized over time, while for Africa there is some evidence of increasing dependence on a small number of markets. Both dynamics are consistent with the patterns described above in terms of the regional breakdown of export destinations.

Taking these results together confirms that the nature of OIC trade networks varies substantially across sectors and products. Although there is a strong intra-regional component to intra-OIC trade flows, there are also important linkages across regions. Geography is an important determinant of trade flows, but policy also plays a role. Most preferential integration arrangements affecting agricultural trade are regional in nature, so they tend to reinforce the dynamic for relatively close countries to trade more. This dynamic is an issue for the future

development of the intra-OIC trade network, as the organization has a diverse membership in geographical terms, so it will be important to look at ways of reducing trade costs that are not unduly focused on intra-regional partnerships. Complementarity of trade flows in agriculture is a reason for working in a non-discriminatory way to ensure that cross-regional linkages can take place and develop adequately, as distant partners often have different climactic situations and comparative advantages, so they are comparatively well placed to take advantage of market opportunities, subject to being able to overcome trade costs. Subsection 4 investigates the role of policy in driving these outcomes.

Table 10: Average out Degree Centrality for Leading Products, by Exporting Regional Group, 2005 and 2016

	African Group		Arab Group		Asian Group	
	2005	2016	2005	2016	2005	2016
Live animals	4.92	4.32	4.58	7.52	6.90	7.21
Tobacco	3.89	5.60	5.83	8.28	11.21	10.75
Oil seeds	4.06	5.78	5.38	5.79	8.11	8.66
Crude rubber	6.58	5.09	2.96	4.23	10.65	12.71
Cork and wood	8.69	6.50	4.90	6.58	9.58	12.30
Rice	2.11	3.00	7.56	4.71	11.52	9.80
Vegetables	5.43	5.87	10.53	12.00	10.89	11.26
Fruit and nuts	5.59	6.58	10.74	14.82	16.00	14.37
Coffee	6.04	6.22	5.96	7.50	10.65	13.36
Other edible products	5.24	6.16	10.13	16.66	15.25	20.00
Cotton	6.46	4.55	5.13	3.77	9.19	11.00
Bread products	3.60	2.95	11.21	12.55	14.63	16.39
Palm oil	3.39	3.18	4.45	4.75	18.14	22.50
Fish and crustaceans	10.34	10.21	11.61	14.29	19.81	20.48
Cocoa and chocolate	6.73	5.33	8.34	10.58	18.90	20.03
Rest of 06	3.13	3.15	5.76	9.50	9.17	11.17
Rest of 04	3.05	3.78	4.76	6.53	6.84	9.17

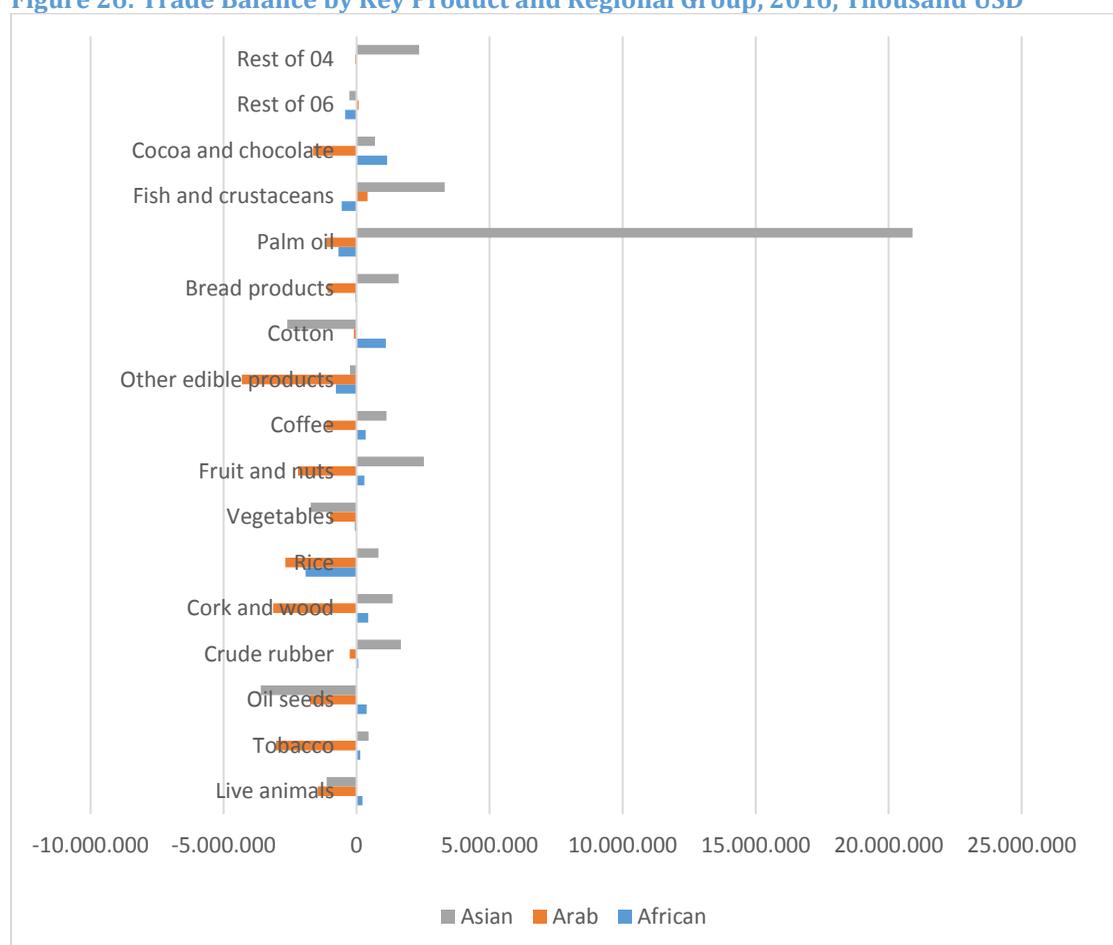
Source: Authors' calculations based on UN Comtrade Data.

3.3. Trade Balances and Comparative Advantage

The above analysis has considered exports and imports separately. However, it is possible to sum them to produce a measure of the product-level balance of trade. A negative figure indicates that a region is a net importer of the product in question, while a positive value indicates that it is a net exporter. From an economic point of view, a position of deficit or surplus is not informative. It simply reflects comparative advantage, a point that is examined in further detail below. Policymakers should avoid undue concern with the aggregate balance of trade, summing across all products, as it is largely driven by macroeconomic factors, specifically the balance between savings and investment, rather than factors specific to trade. An undue focus on a net deficit position, for example, can lead to overuse of active trade policy to the detriment of local consumers.

Figure 26 presents product-level trade balances by regional group for the key products identified above. The Asian Group has a strong surplus in palm oil, then smaller deficits in most other sectors except cotton (which is used as an input in the garment industry), vegetables, oil seeds, and live animals. The Arab Group runs a deficit in every product except fish and crustaceans, and the rest of chapter 06, which is sugar preparations. Finally, the African Group runs a mixture of deficits and surpluses. On the surplus side, cocoa and chocolate stand out, and on the deficit side, attention is drawn to rice, palm oil, and other edible products. Some policymakers are concerned with deficits in certain food products because they believe that they threaten food security. However, these figures show that the largest deficits in the OIC are in the Arab Group, where countries typically have the capacity to acquire food staples easily from world markets, and food security is not a serious issue. Food security is a more significant issue in Africa and parts of Asia, but it is largely due to issues of productivity and efficiency in food staple value chains, including provision of inputs like fertilizers and irrigation, rather than a question of trade balances.¹⁴

Figure 26: Trade Balance by Key Product and Regional Group, 2016, Thousand USD



Source: UN Comtrade and Authors' calculations.

¹⁴ In the West African context see, for example: Maur, J.C., and B. Shepherd. 2015. *Connecting Food Staples and Inputs Markets in West Africa: A Regional Trade Agenda for ECOWAS Countries*. Washington, D.C.: World Bank.

Far more reliable than the trade balance as an indicator of the relative productivity of different parts of a country's agricultural sector is TRCA. For computational reasons—the large number of parameters involved—it is not feasible to report estimates of TRCA at the product level. The approach taken is therefore to use the estimates referred to in Section 2, which are at the division level, and to provide averages by OIC regional group. Within each division, it is possible to draw tentative conclusions about the pattern of comparative advantage in relation to specific products.

Table 11 presents results. For the African Group, comparative advantage is strongest in live animals and cereals, as well as crude materials and animal and vegetable fats and oils. For the Arab Group, comparative advantage is weaker than for the other groups, but cereals stand out, as do other edible products. Finally, for the Asian Group, cereals show a strong comparative advantage, as do other edible products, crude materials, and animal and vegetable fats and oils. Comparative advantage estimates are based on a theory-driven model of bilateral trade, and so are much more informative than trade balances as an indicator of possible future export growth.

Table 11: TRCA by Division and OIC Regional Group, 2016

	African	Arab Group	Asian Group
Live animals	2.10	1.11	1.49
Meat	1.37	1.25	1.54
Dairy products	1.85	1.43	1.62
Fish and crustaceans	1.49	1.30	1.59
Cereals	2.11	1.83	2.95
Vegetables and fruit	1.76	1.40	1.63
Sugar products	1.77	1.45	1.65
Coffee	1.71	1.20	1.47
Animal feed	1.58	1.21	1.52
Other edible products	1.71	1.70	1.94
Beverages and tobacco	1.40	1.02	1.30
Crude materials	2.03	1.22	1.86
Oil seeds and oleaginous fruits	1.35	0.49	0.83
Animal and vegetable fats and oils	2.09	1.55	2.03

Source: Authors' calculations.

3.4. Agricultural Trade Policies and Regional Trade Agreements

There is no international database that makes it possible to accurately identify what proportion of trade takes place under regional trade agreements (RTAs). Utilization rates of preferences vary across agreements, due to differences in compliance costs (especially related to rules of origin), and preferential margins. Most countries do not systematically produce data on preference utilization rates, although in theory it could typically be collated from detailed customs statistics.

To provide some basic information on the role of RTAs in shaping trade in agricultural products within the OIC, it is possible to analyze export and import flows assuming that trade flows covered by an RTA use preferences at a rate of 100%. This is therefore an upper bound on the true role of preferences in agricultural trade, but it is not feasible to conduct a more rigorous analysis across all countries in the OIC as there is no standardized international source on preference utilization within RTAs. To conduct the analysis, it is necessary to merge bilateral trade data from UN Comtrade with the standard RTA dataset used in empirical international trade.¹⁵ The result is a measure of the percentage of trade by value that is with RTA partners and with non-RTA partners respectively. This summary statistic shows the relative importance of RTAs as drivers of agricultural trade by product, focusing exclusively on intra-OIC trade.¹⁶

Table 12 presents results. Although the RTA data are not granular, breaking out exports separately by product within regional groups shows that trade with RTA partners differs substantially across sectors. This difference likely reflects different degrees of liberalization within agreements, while differences over time likely reflect the signature of new agreements. For the African Group, most trade in leading agricultural goods takes place within RTAs. Although percentages of coverage have changed over the last decade, they still represent in most cases the bulk of trade in 2016. Exceptions are rice, vegetables, palm oil, fish and crustaceans, and cocoa, where more trade takes place outside RTAs. The case of fish and crustaceans is interesting, as there is a significant decrease in RTA coverage over the last decade, but it was seen above that trade is still strongly intra-regional in a geographical sense. The implication is that African exporters are trading with close countries whether or not there is an RTA. For the Arab Group, most trade in most products also takes place within RTAs. In most cases, coverage has either stayed constant or increased over time, which is consistent with signing more RTAs. Only the case of tobacco sees a marked shift to extra-RTA trade over time, while the dynamic is strongly in the opposite direction for fish and crustaceans. Coverage rates are generally lower for the Asian Group, which means that trade flows outside regional agreements are relatively more important. Nonetheless, RTAs still play a strong role in shaping intra-OIC trade in most products, although in many cases that role is declining over time.

¹⁵ De Sousa, J. 2012. "The Currency Union Effect on Trade is Decreasing Over Time." *Economics Letters*, 117(3): 917-920.

¹⁶ An extension to this exercise would be to look at the proportion of extra-OIC trade that goes through regional agreements with non-members, such as the EU, as well as other countries. However, the focus of this section is on intra-OIC trade, so the analysis is not further complicated by introducing this dimension.

Table 12: Percentage of Intra-OIC Exports Taking Place within RTAs, by Leading Product and Regional Group, 2005 And 2016, Percent

	African Group		Arab Group		Asian Group	
	2005	2016	2005	2016	2005	2016
Live animals	99.60	99.95	99.94	98.94	8.02	78.20
Tobacco	83.39	71.56	91.69	50.32	50.90	49.41
Oil seeds	99.93	89.62	72.50	85.98	32.84	47.01
Crude rubber	87.93	98.95	93.75	95.44	51.37	25.62
Cork and wood	97.98	78.34	97.40	96.77	46.30	47.20
Rice	72.94	49.70	96.04	94.16	54.76	42.21
Vegetables	43.05	23.65	93.40	95.85	89.37	69.94
Fruit and nuts	9.38	76.61	97.66	97.84	69.77	63.60
Coffee	91.83	78.85	75.57	83.65	51.76	56.11
Other edible products	98.44	77.69	81.86	74.66	75.70	62.75
Cotton	50.24	59.65	57.93	99.53	90.81	88.97
Bread products	16.70	85.08	88.14	83.22	61.70	55.24
Palm oil	36.50	33.32	94.75	92.11	30.65	28.65
Fish and crustaceans	66.04	45.06	39.78	94.67	88.86	65.92
Cocoa and chocolate	99.19	21.05	87.04	77.91	73.06	72.79
Rest of 06	98.12	91.08	52.83	74.44	96.68	77.58
Rest of 04	99.98	86.10	45.31	99.14	60.46	68.07

Source: UN Comtrade and Authors' calculations.

These results confirm the importance of the regional dimension referred to throughout this section. From a policy perspective, regional agreements play an important role in terms of structuring trade in agricultural products. This insight is true across most products, although rates vary for the reasons referred to above.

To see in further detail how RTAs can influence trade flows, it is informative to look at data on tariffs to show just how much benefit exporters get from being within an RTA. Table 13 reports preferential margins by regional group in 2005 and 2016. Intuitively, these numbers summarize the degree of tariff preference accorded by RTAs at the beginning and the end of the sample. In all cases, there is a clear increase in the margin of preference over time. The increase is clearest in the African Group, where the impact of RTAs was limited in practice in 2005, but substantial in 2016. The Arab Group also stands out for having particularly large preferential margins.

Table 13: Preference Margin by Importing Group and Product, 2005 and 2016, Percent of MFN Rate

	African Group		Arab Group		Asian Group	
	2005	2016	2005	2016	2005	2016
Live animals	3.33	25.10	27.77	73.05	0.84	7.45
Tobacco	2.16	39.44	75.31	68.48	1.16	24.66
Oil seeds	0.00	36.84	59.85	43.20	0.98	6.92
Crude rubber	0.00	34.78	34.58	51.85	0.71	9.92
Cork and wood	0.00	23.91	39.45	50.05	11.42	23.81
Rice	0.00	25.55	75.26	77.57	0.00	23.95
Vegetables	0.00	27.14	51.05	43.60	0.63	21.23
Fruit and nuts	1.04	22.39	39.62	49.67	0.28	7.39
Coffee	0.00	19.27	49.61	43.55	6.11	28.17
Other edible products	0.61	21.66	60.74	59.35	1.04	14.38
Cotton	0.00	42.86	45.87	46.87	0.00	22.07
Bread products	0.00	20.63	50.14	52.35	0.37	23.56
Palm oil	0.00	33.69	35.67	40.31	0.00	5.61
Fish and crustaceans	0.00	28.40	51.26	33.77	0.86	18.47
Cocoa and chocolate	1.21	23.29	43.48	48.00	1.58	14.37
Rest of 06	0.00	18.37	51.71	51.80	1.91	10.96

Source: TRAINS via WITS.

This policy analysis shows that the dynamic towards regional integration, as embodied in the rise of RTAs involving OIC members, has played a strong and fundamental role in shaping trade flows. Over time, the effective difference in the restrictiveness of policies facing RTA partners as compared with MFN policies has grown substantially. In combination with geographical considerations and product features, this fundamental dynamic has reinforced the tendency of intra-OIC trade to take place within, rather than across, regional groups. As such, the network of RTAs among OIC countries has been a defining feature of the multiple networks of trade flows that are now in evidence.

In addition to formal trade agreements involving OIC members, there is also the Trade Preferential System (TPS) Among Member States of the OIC (TPS-OIC). The legal basis for this system is fully in place, and the instruments have been ratified by the required number of countries. However, before the preferences can take effect, it is necessary for members to submit updated concession lists; as of December 2017, seven countries had done so. Preferential arrangements like this can potentially boost trade with beneficiaries, but as with any discriminatory liberalization, policymakers need to pay attention to the dual effects of trade creation and trade diversion. The same is true of regional agreements. Policymakers should craft schedules of concessions designed to maximize reliance on low cost suppliers, i.e. maximize trade creation. Accompanying enhanced preferences with multilateral rate reductions is a good way of minimizing trade diversion—and this would be in keeping with the progressive liberalization of tariff rates referred to above.

3.5. Conclusions and Lessons Learned

The main findings of this section can be summarized as follows:

- OIC regional groups display some degree of commonality in terms of their key exports and imports at the level of individual products in the Annex 1 classification.
- In the product dimension, import baskets tend to be more diversified than export baskets. At the country level, however, there is mixed evidence of diversification and concentration over time, in response to policy changes and patterns of comparative advantage.
- There is no single trade network among OIC member countries when it comes to agricultural products. Rather, networks are highly specific to regional groups and individual products. From a policy perspective, this dynamic is not necessarily negative. Trade is, and should, be driven by a mix of geography, productivity (comparative advantage), and policy, and these factors interact in complex ways to produce observed outcomes.
- Trade with non-OIC members is important across regional groups. The reason is that geographical entities usually incorporate a mix of members and non-members, so regional integration efforts, including through trade agreements, foster both kinds of trade. Increasing trade integration is an important policy objective, but the identity of trading partners is a less important one. Policymakers should take care when introducing preferential schemes or entering into trade agreements to maximize trade creation (use of low cost suppliers) and minimize trade diversion (use of high cost suppliers).
- Although cross-regional dynamics cannot be summarized easily, one that stands out is the rise of Asia as source of demand for imports of agricultural raw materials. This change is due to the rise of manufacturing in that region, including industries like processed food products and garments, which both require raw materials from elsewhere, including OIC member countries.
- Another important dynamic is the role played by hub economies in some sectors, especially Turkey and Saudi Arabia. Their role in agricultural trade networks suggests that developing closer ties—through trade agreements, but also improved transport links and connectivity—could be beneficial to exporters of some products. Whether or not a network is dispersed or concentrated into a hub and spoke pattern is highly product specific, however.
- Regional integration has been an important dynamic behind growth in intra-OIC trade, with significant preference margins and wide coverage at the level of key products. Trade agreements are an important factor driving the exports and imports of OIC member countries, and serve to give a distinctly intra-regional flavor to intra-OIC trade relations, in combination with geographical proximity. Trade agreements with neighboring regions, particularly the EU, likely also shape relations with countries outside the OIC, and have helped drive trade growth there as well.

4. COUNTRY CASE STUDIES

This section presents three country studies based on field work undertaken in each OIC region. For the Asian Group, the case study example is Bangladesh. For the Arab Group, the country is Tunisia. For the African Group, it is Cameroon. The rationale behind this choice of countries is that they reflect the OIC's diversity in terms of levels of per capita income, geography and climate, and product specializations. Nonetheless, agriculture is a significant source of income and employment in all three countries, despite differences in sectoral characteristics that the case studies bring out. As such, these diverse examples provide the basis for developing policy insights that can be of broad relevance to the OIC's diverse membership.

4.1. Bangladesh

Bangladesh, the largest Least Developed Country, is predominantly an agricultural country and its agriculture sector continues to be one of the driving forces of the national economy. In 2007 the Government of Bangladesh for the first time embraced a long-term development objective, popularly known as *Vision 2021*, aiming to graduate Bangladesh into a middle-income country by 2021, the year which marks the 50th anniversary of Bangladesh's independence. Vision 21 is implemented by the Perspective Plan of Bangladesh (2010-2021) which serves as a strategic articulation of the development vision, mission, and goals of the Government.¹⁷ The National Sustainable Development Strategy (2010-2021) has been prepared to meet the formidable environmental challenges that Bangladesh faces on the way to development.¹⁸ Both these long term development strategy papers have emphasized the accomplishment of self-sufficiency in food grain production and the achievement of nutritional requirements by 2021. The immediate past medium term development plan, the Sixth Five-Year Plan (2011-2015) and the ongoing Seventh Five Year Plan (2016-20), aimed at raising rural income and generating employment opportunities for poor rural people through increased agricultural productivity, fostering diversification and boosting rural infrastructure. The guiding principles for the agriculture sector laid down by the Seventh Five Year Plan aim at achieving food and nutritional security for country's population. It also targets ensuring sustainable agriculture and green growth alongside increased commercialization and livelihood improvement through technological innovations and use, and linking the farming community with both national and international markets.¹⁹

Thanks to a supportive policy space complemented by a vibrant private sector, the country's agricultural sector has made tremendous progress over the past four decades. While the agriculture sector contributes only 14.74% to the national GDP, its indirect contribution to overall GDP growth is significant, and the sector employed about 41% of the country's work force in 2015-2016.²⁰

¹⁷ Planning Commission, Ministry of Planning, Government of Bangladesh (2007), The Perspective Plan of Bangladesh, available at: <http://www.plancomm.gov.bd/perspective-plan/> [accessed on 31 March 2018]

¹⁸ Planning Commission, Ministry of Planning, Government of Bangladesh (2010), The National Sustainable Development Strategy, available at: <http://www.plancomm.gov.bd/national-sustainable-development-strategy/> [accessed on 31 March 2018]

¹⁹ Planning Commission, Ministry of Planning, Government of Bangladesh (2016), Seventh Five Year Plan, available at: <http://www.plancomm.gov.bd/7th-five-year-plan-2/> [accessed on 31 March 2018]

²⁰ Bangladesh Economic Review 2017, Ministry of Finance, Government of Bangladesh, available at: <http://www.mof.gov.bd/site/page/44e399b3-d378-41aa-86ff-8c4277eb0990/BangladeshEconomicReview>; and Bangladesh Quarterly Labour Force Survey 2015-16, Bangladesh Bureau of Statistics, Ministry of Planning, available at:

Bangladesh's agriculture sector is now transforming rapidly from low-input subsistence to commercial agriculture with higher level of input use and different high value crop production, especially in horticultural crops. Although Bangladesh has achieved self-sufficiency in food grains, much still needs to be done to transform its agriculture sector towards commercial farming, including developing value chain structures, minimizing postharvest losses, promoting contract farming and group marketing, adopting international quality standards, following strict compliance with sanitary and phytosanitary measures, ensuring quality packaging, enhancing transportation and storage facilities, and improving market linkages for smallholder farmers both with domestic and international markets.

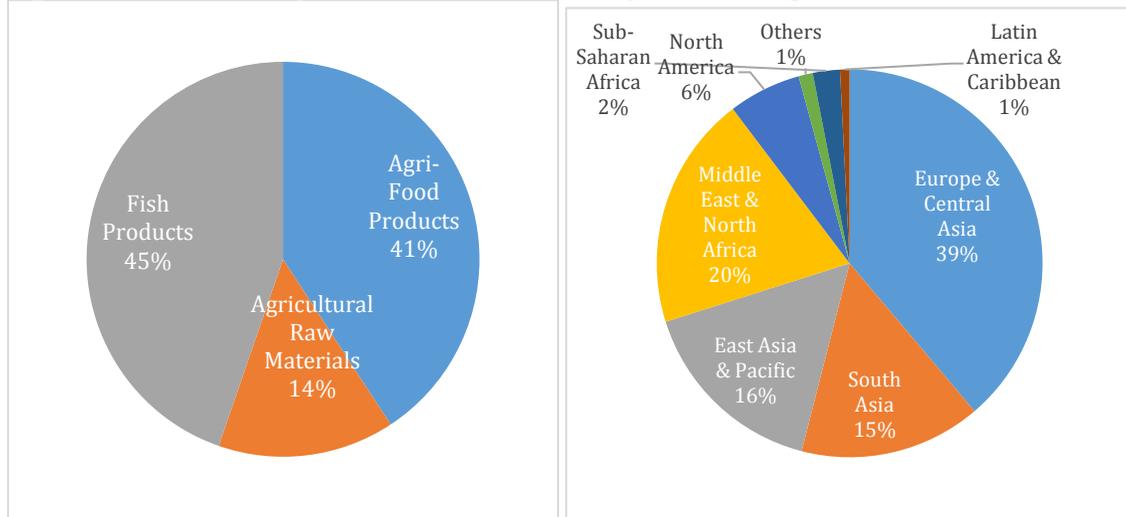
Agricultural Trade Performance

Bangladesh implemented a series of reforms and agricultural trade liberalization measures since the early 1990s aiming at increasing agricultural productivity and accomplishing self-sufficiency in food grain production. Major deregulations in agricultural sector includes liberalization of input markets, shrinking the role of government agencies in distribution of inputs, substantial reduction and rationalization of tariffs, removal of quantitative restrictions and moving from fixed to a flexible exchange rate system. Agricultural trade liberalization resulted in major structural reforms and technological transformation in agricultural production, enabling the country to achieve self-sufficiency in food grain production.

While the agricultural sector has made remarkable progress in terms of production and diversification towards high value crops and non-crop agriculture during this period, exports of agricultural products grew at slower pace than those of other sectors. Average growth of agricultural export was approximately 4% during 2005-2015 period, while overall exports grew by an average 24% annually during that period. However, imports of agricultural products increased at an even faster rate than other sectors since 2005. Agricultural imports grew by an average 32% per year compared to an average 28 % growth of the country's total imports (based on UN Comtrade data).

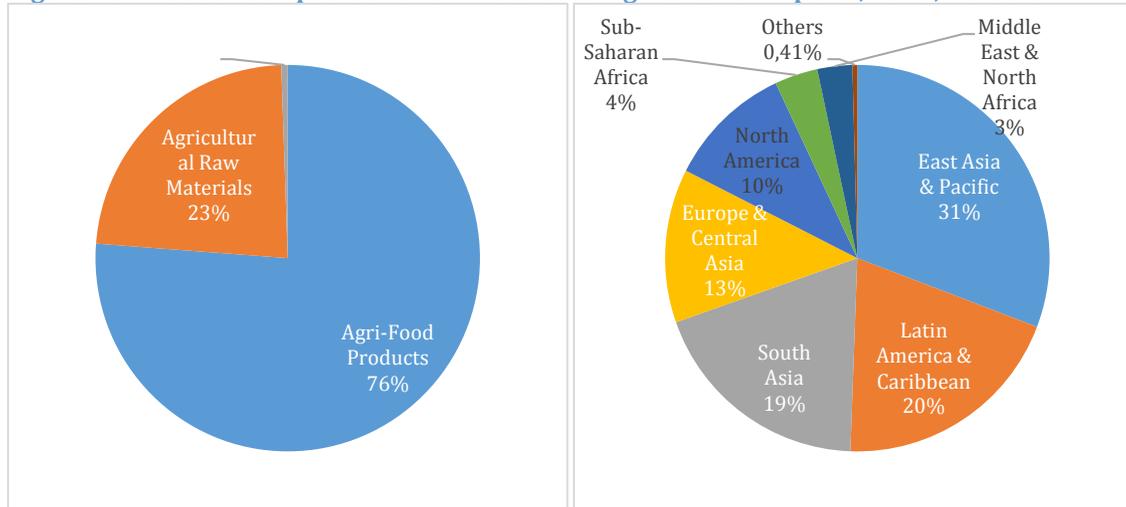
Figure 27 and 28 show the product and market composition of Bangladesh's agricultural trade in 2015. As can be seen, the product breakdown of exports is dominated by fish products, followed by agri-food products, then agricultural raw materials. In terms of destinations, Europe and Central Asia dominates, followed by the Middle East and North Africa, South Asia, and East Asia and the Pacific. On the import side, the product mix is dominated by agri-food products and agricultural raw materials. Major sources of imports include East Asia and the Pacific, South Asia, and Europe and Central Asia.

Figure 27: Product Composition and Direction of Agricultural Exports, 2015, Percent



Source: UN Comtrade retrieved through WITS.

Figure 28: Product Composition and Direction of Agricultural Imports, 2015, Percent



Source: UN Comtrade retrieved through WITS.

Export of Agricultural Products

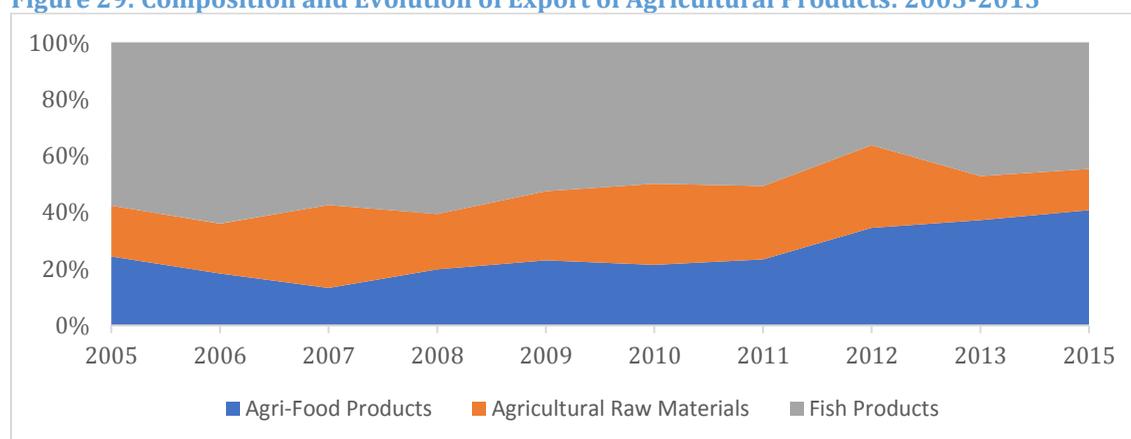
Composition and patterns of Agricultural Exports

Bangladesh's Agricultural exports increased from 707.68 million USD in 2005 to more than 1 billion USD in 2015, at an average annual growth rate of 4%. However, the country's agricultural export shows an uneven growth trend. While the export sector grew positively up to 2007, faced steep contraction in 2008 and 2009, probably due to the shirking global demand following the global financial crisis. Then it jumped again in 2010 registering a huge 43 % growth, while

achieved moderate growth of 17% in 2011. Again the sector lost around one quarter of its export value in 2012 which was again regained in 2013. The sector’s export earnings yet again declined by 12% in 2015. These uneven growth trends of agricultural export could not keep pace with the country’s fast growing other export sectors. As a result, the share of Agricultural exports in Bangladesh’s total exports reduced from 7.58% in 2005 to only 3.15% in 2015.

Bangladesh’s exports of agricultural products were mainly dominated by Fish products, followed by Agri-food and Agricultural raw materials during this period. The share of Fish products in total agricultural exports however reduced from 58 % in 2005 to 45 % in 2015. The share of Agri-food products in total agricultural exports increased from 24% to over 40%, while the share of exports of Agricultural raw materials remained almost unchanged during that period (Figure 29).

Figure 29: Composition and Evolution of Export of Agricultural Products: 2005-2015



Source: UN Comtrade retrieved through WITS.

This section focuses on identifying and analyzing top agricultural export products of Bangladesh at the disaggregated level as specified in Annex 1. Table 14 shows the shares of the top 10 export items of Bangladesh from 2005 to 2015, which are selected based on the last 3 years average export value. This analysis shows that Bangladesh’s Agricultural export was highly concentrated within a few specific products over the last decade. While the top 10 export items accounted for more than 90% export earnings in 2005, these 10 products still represent 85% of total export value in 2015. These 10 product groups are Crustaceans (live or dead), chilled or frozen; Jute and other textile based fibers; Vegetables- fresh, chilled or frozen; Fish, fresh (live or dead), chilled or frozen; Tobacco and tobacco manufactures; Fruit and nuts (not including oil nuts); Fruit and vegetable juices; Spices; Bread, pastry, cakes, biscuits and other bakers' wares and Edible products and preparations. Among these 10 product groups only the first two, Crustaceans (live or dead), chilled or frozen and Jute and other textile based fibers was accounted for more than 50 % of country’s total Agricultural export earnings, which was even higher (around 69 %) in 2005.

Table 14: Share of Top 10 Agricultural Products in Total Agricultural Export: 2005-2015, Percent

Products	2005	2006	2007	2008	2009	2010	2011	2012	2013	2015
Agricultural Products	100									
Crustaceans (live or dead), chilled or frozen	50.4	57.7	51.1	49.9	42.5	40.6	39.6	29.1	40.6	39.5
Jute and other textile based fibers	17.2	16.8	16.3	17.5	21.5	25.7	23.3	26.5	13.4	12.3
Vegetables, fresh, chilled or frozen	8.8	5.2	4.7	5.2	5.3	4.9	6.2	6.5	10.0	7.0
Fish, fresh (live or dead), chilled or frozen	6.2	5.5	4.1	9.8	8.7	8.2	10.0	6.3	5.6	4.6
Tobacco and tobacco manufactures	3.6	2.2	2.0	3.5	6.4	6.7	6.1	6.0	4.3	4.9
Fruit and nuts (not including oil nuts)	5.2	5.2	1.8	2.0	2.1	2.6	3.9	5.2	4.4	2.7
Fruit and vegetable juices	0.3	0.6	0.4	0.8	1.2	0.9	1.2	1.8	3.7	5.5
Spices	0.6	0.4	0.2	1.0	0.9	0.8	1.0	2.5	1.5	2.4
Bread, pastry, cakes, biscuits and other bakers' wares	0.3	0.4	0.4	0.5	1.0	0.8	0.7	1.4	1.4	3.5
Edible products and preparations	0.5	0.2	0.4	1.3	0.3	0.5	0.8	0.9	1.5	3.3
Total share of top 10 products	93.1	94.4	81.4	91.5	89.8	92.0	92.7	86.2	86.3	85.8
Rest of Agricultural export products	6.9	5.6	18.6	8.5	10.2	8.0	7.3	13.8	13.7	14.2

Source: UN Comtrade retrieved through WITS.

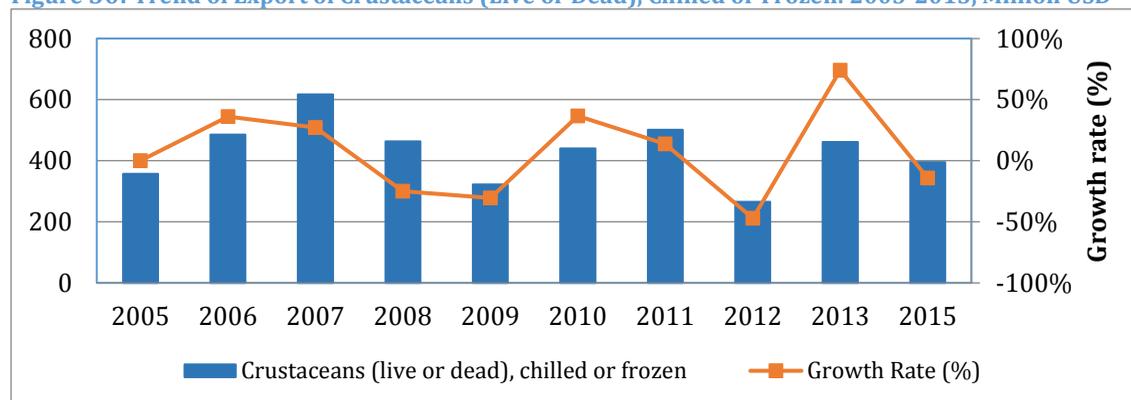
The fisheries and aquaculture sector in Bangladesh played a significant role in the country's economic growth over the last four decades. The sector's contribution to GDP, export earnings, and providing a livelihood to millions of Bangladeshis are well known. The sector's importance can be seen from the fact that its contribution to GDP currently is around 3.65%. Bangladesh is one of the world's leading fish producing countries with a total production of 4.134 million MT, where aquaculture production contributes more than 56% of the total production. Over the last 10 years, the average growth performance of this sector was around 6%.²¹

This growth performance of the fisheries sector however has not been reflected in its export performance. Although around 50% of the export earnings of Bangladesh's agricultural sector still accounts for exports of fish products, this export group is showing a decline over the last decade. Crustaceans (live or dead), chilled or frozen product group alone accounted for 50% of country's total agricultural export earnings in 2005 which was however gradually reduced to around 40% in 2015. Between 2005 and 2015, more than 80% of total exports of fish items consisted of chilled and frozen prawn and shrimp, and the picture has been almost similar in recent years. In 2015, annual exports of fish were around 447 million USD, among which almost 400 million USD came from shrimp and prawn exports. Other fish (live or dead), chilled or frozen

²¹ Bangladesh Economic Review 2016, Ministry of Finance, Government of Bangladesh, available at: <http://www.mof.gov.bd/site/page/44e399b3-d378-41aa-86ff-8c4277eb0990/BangladeshEconomicReview> [accessed on 1 April 2018]

product group still listed at the fourth position of the top 10 export items, and export of this group is also shirked from more than 5% of total agricultural trade in 2005 to only 2.66% in 2015. Overall, export earnings from the fishing sector have been quite unstable and growth rates fluctuated significantly during the last decade (Figure 30).

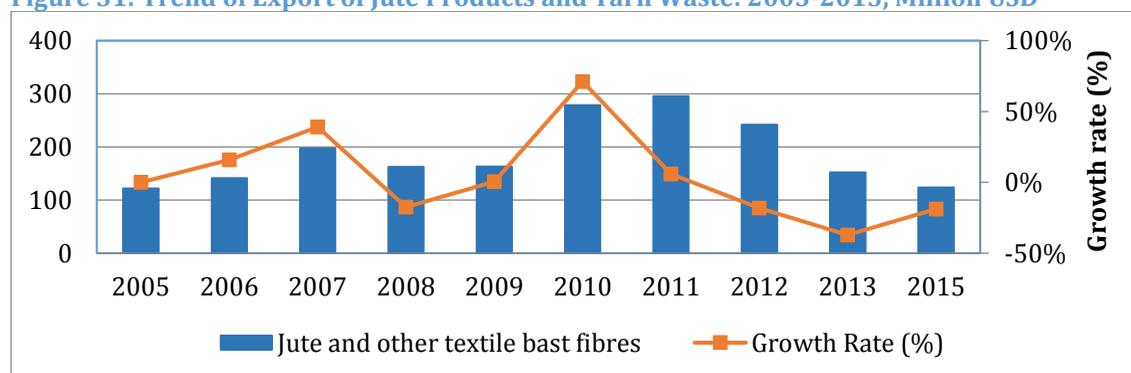
Figure 30: Trend of Export of Crustaceans (Live or Dead), Chilled or Frozen: 2005-2015, Million USD



Source: UN Comtrade retrieved through WITS.

The second top Agricultural export item is Jute and other textile based fibers. Bangladesh's export earnings from Agricultural Raw Materials mainly come from the export of Jute products and yarn waste. The export earnings from Jute products and yarn waste remain almost stagnant, 122 million USD in 2005 and 123 million USD in 2015; at the same time, the share of Jute products and yarn waste in total Agricultural export earnings of Agricultural Raw Materials reduced from approximately 17% in 2005 to around 12% in 2015 (Figure 31).

Figure 31: Trend of Export of Jute Products and Yarn Waste: 2005-2015, Million USD



Source: UN Comtrade retrieved through WITS.

Bangladesh's agri-food exports are mainly driven by vegetable and fruit items, as almost half of the export earnings of this sector come from vegetable and fruit exports. Vegetables, fresh, chilled or frozen and fruit and nuts (not including oil nuts) product groups together accounted for around 10% of total agricultural exports in 2015 and listed at the third and sixth places, respectively, in the list of the top 10 export items. The products within this group that showed bright export potential are potatoes, tomatoes, pointed gourd, and beans, all of which have registered increasing volumes of exports. On the other hand, trends in exports of okra, eggplant, cabbage, cauliflowers, and citrus fruits have exhibited a high degree of instability.

Market structure and networks of Agricultural Exports

India, United States, Belgium, United Kingdom, China, Pakistan, Netherlands, Germany, Saudi Arabia, and United Arab Emirates were the top 10 export markets of Bangladesh's Agricultural exports over the 2005-2015 period. Similarly to the export baskets, Bangladesh's export markets are also highly concentrated. The top 10 export destinations accounted for more than 80 % of Bangladesh's Agricultural exports in 2005, which however reduced to 70 % in 2015 showing moderate diversification of export destinations.

Table 15 lists the top 10 export destinations by share of Bangladesh's Agricultural products selected based on the last 3 years average export value. India is the leading export market for recent years, although the export trend to India was quite uneven during the last decade. Along with geographical proximity, gradual trade liberalization between Bangladesh and India under South Asian Free Trade Agreement (SAFTA), improved communication and connectivity and increased demand of Bangladeshi products in Northeast Indian territory. Top 10 agricultural export items to India during the 2005-2015 period were Jute and other textile based fibers; Fruit and nuts (not including oil nuts); Fish, fresh (live or dead); chilled or frozen; Cotton; Feeding stuff for animals; Crude rubber; Non-alcohol Beverage; Animal and vegetable oils, fats and waxes; Spices; and Sugar confectionary (Table 16).

Table 15: Share of Top 10 Export Markets' in Total Agricultural Export: 2005-2015, Percent

Export Destinations	2005	2006	2007	2008	2009	2010	2011	2012	2013	2015
All Agricultural export markets	100									
India	10	12	18	7	12	10	16	17	9	12
United Kingdom	18	13	9	9	11	9	11	9	10	11
Belgium	13	15	15	14	10	10	12	7	8	8
China	4	4	4	5	8	11	8	10	7	4
Netherlands	1	4	2	1	6	6	5	5	7	8
Saudi Arabia	3	2	1	3	5	3	4	6	6	7
United Arab Emirates	3	2	2	2	2	3	3	6	6	5
United States	21	23	19	16	13	11	7	4	6	6
Germany	3	3	3	3	5	5	4	4	5	6
Pakistan	8	5	7	7	6	6	6	6	4	4
Total share of top 10 export markets	82	83	81	68	77	75	75	74	68	70
Rest of Agricultural export markets	18	17	19	32	23	25	25	26	32	30

Source: UN Comtrade retrieved through WITS.

The United States is an important export destination of Bangladesh's agricultural products, and in fact it was the top destination from 2005 until 2010. From 2011, Bangladesh's agricultural export products lost their competitiveness and exports earnings declined sharply in recent years placing it at the eighth position. While more than one fifth of Bangladesh's total agricultural exports were destined to the US in 2005, it only accounted for less than 6% in 2015. Over the last decade Bangladesh's top agricultural export items to the US were Crustaceans (live or dead), chilled or frozen, Tobacco and tobacco manufactures, Fish, fresh (live or dead), chilled or frozen, Bread, pastry, cakes, biscuits and other bakers' wares, Jute and other textile based fibers, Edible products and preparations, Animal and vegetable oils, fats and waxes, Vegetables, fresh, chilled or frozen, Fish or shellfish, prepared or preserved, and Rice. The rapid drop of

agricultural export the United States mainly due to sharp fall of export of shrimp and other fish products which started with the drastic shrinking of demand in the US market following global economic meltdown followed by shifting interest of the US buyers to import low-price hybrid variety of these items from China, Vietnam and Thailand. The items showing encouraging growth trend in recent years in the US market are Bread, pastry, cakes, biscuits and other bakers' wares, Tobacco and tobacco manufactures and Edible products and preparations.

The United Kingdom is still the second important export destination of Bangladesh's agricultural exports, although its share reduced from more than 17% in 2005 to around 11% in 2015. While most of the top 10 export items (listed in Table 16) showing mixed trend exports of Bread, pastry, cakes, biscuits and other bakers' wares and Jute and other textile based fibers recorded promising uprising trend in recent years. The European Union member countries are traditionally major export destinations of Bangladesh's export items including agricultural export for which Belgium, the Netherlands and Germany are the main destinations. While agricultural exports to Belgium reduced over the last decade, exports to the Netherlands and Germany significantly increased. Shrimp and prawn are the major agricultural exports of Bangladesh influenced by the growth trends.

Table 16 shows a mapping of key products to key bilateral destinations to give a sense of Bangladesh's agricultural trade network. Product mix varies across destinations, as would be expected, but given the concentration of the country's export basket, there is unsurprisingly a good deal of commonality across markets. Fish products are exported particularly to the European Union and United States, fruits and vegetables are exported to regional partners like India and Pakistan, and textile fibers are exported widely for use in textile industries abroad.

Table 16: Top 10 Agricultural Export Destinations with Top 10 Export Items: 2005-2015

Export destinations	Top 10 export products (COMCEC Groups)
<i>All Agricultural export destinations</i>	Crustaceans (live or dead), chilled or frozen [036], Jute and other textile based fibers [264], Vegetables, fresh, chilled or frozen [054], Fish, fresh (live or dead), chilled or frozen [034], Tobacco and tobacco manufactures [12], Fruit and nuts (not including oil nuts) [057], Fruit and vegetable juices [059], Spices [075], Bread, pastry, cakes, biscuits and other bakers' wares [0484], Edible products and preparations [098]
India	Jute and other textile based fibers [264], Fruit and nuts (not including oil nuts) [057], Fish, fresh (live or dead), chilled or frozen [034], Cotton [263], Feeding stuff for animals [08], Crude rubber [23], Non-alcohol Beverage [111], Animal and vegetable oils, fats and waxes [Rest of 4], Spices [075], Sugar confectionary [062].
United Kingdom	Crustaceans (live or dead), chilled or frozen [036], Vegetables, fresh, chilled or frozen [054], Fish, fresh (live or dead), chilled or frozen [034], Bread, pastry, cakes, biscuits and other bakers' wares [0484], Fruit and nuts (not including oil nuts) [057], Jute and other textile based fibers [264], Vegetables, roots and tubers [056], Edible products and preparations [098], Tobacco and tobacco manufactures [12], Fish or shellfish, prepared or preserved [037]
Belgium	Crustaceans (live or dead), chilled or frozen [036], Tobacco and tobacco manufactures [12], Fish or shellfish, prepared or preserved [037], Jute and other textile based fibers [264], Vegetables, roots and tubers [056], Fish, fresh (live or dead), chilled or frozen [034], Cotton [263], Vegetables, fresh, chilled or frozen [054], Wheat [041], Sugars, sugar preparations and honey [Rest of 06]

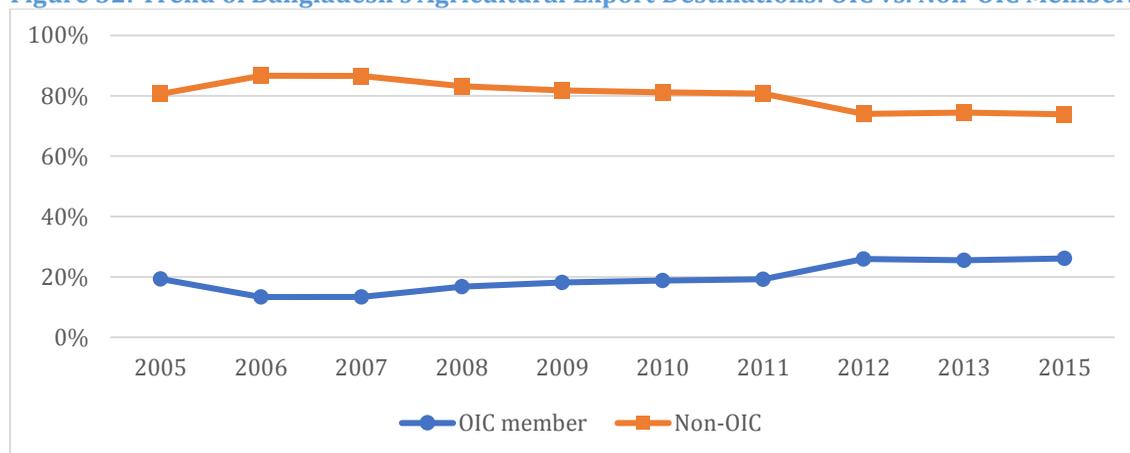
Export destinations	Top 10 export products (COMCEC Groups)
China	Jute and other textile based fibers [264], Fish, fresh (live or dead), chilled or frozen [034], Crustaceans (live or dead), chilled or frozen [036], Oil-seeds and oleaginous fruits [22], Cotton [263], Crude rubber [23], Cork and wood [24], Hides, skins, raw [21], Fish, dried, salted or smoked [035], Vegetables, roots and tubers [056]
Netherlands	Crustaceans (live or dead), chilled or frozen [036], Tobacco and tobacco manufactures [12], Jute and other textile based fibers [264], Fish, fresh (live or dead), chilled or frozen [034], Fish or shellfish, prepared or preserved [037], Vegetables, roots and tubers [056], Bread, pastry, cakes, biscuits and other bakers' wares [0484], Fruit and vegetable juices [059], Non-alcohol Beverage [111], Feeding stuff for animals [08]
Saudi Arabia	Vegetables, fresh, chilled or frozen [054], Fish, fresh (live or dead), chilled or frozen [034], Spices [075], Edible products and preparations [098], Fruit and vegetable juices [059], Cereal and cereal preparation [Rest of 04], Bread, pastry, cakes, biscuits and other bakers' wares [0484], Fruit, preserved and food preparations [058], Mustard oil [4217], Rice [042]
United Arab Emirates	Vegetables, fresh, chilled or frozen [054], Fruit and vegetable juices [059], Sugars, sugar preparations and honey [Rest of 06], Fish, fresh (live or dead), chilled or frozen [034], Spices [075], Tobacco and tobacco manufactures [12], Cereal and cereal preparation [Rest of 04], Edible products and preparations [098], Non-alcohol Beverage [111], Crustaceans (live or dead), chilled or frozen [036],
United States	Crustaceans (live or dead), chilled or frozen [036], Tobacco and tobacco manufactures [12], Fish, fresh (live or dead), chilled or frozen [034], Bread, pastry, cakes, biscuits and other bakers' wares [0484], Jute and other textile based fibers [264], Edible products and preparations [098], Animal and vegetable oils, fats and waxes [Rest of 4], Vegetables, fresh, chilled or frozen [054], Fish or shellfish, prepared or preserved [037], Rice [042]
Germany	Crustaceans (live or dead), chilled or frozen [036], Fish, dried, salted or smoked [035], Tobacco and tobacco manufactures [12], Jute and other textile based fibers [264], Vegetables, fresh, chilled or frozen [054], Sugars, sugar preparations and honey [Rest of 06], Fish or shellfish, prepared or preserved [037], Fish, fresh (live or dead), chilled or frozen [034], Vegetables, roots and tubers [056], Cotton [263]
Pakistan	Jute and other textile based fibers [264], Tea and mate [074], Tobacco and tobacco manufactures [12], Crude rubber [23], Cotton [263], Spices [075], Sugar confectionary [062], Vegetables, roots and tubers [056], Fish, fresh (live or dead), chilled or frozen [034], Hides, skins, raw [21]

Source: UN Comtrade retrieved through WITS.

Note: Products are listed according to the COMCEC group based on their total exports during the 2005-2015 period.

In 2015, around 26% of Bangladesh's total agricultural exports were destined to the OIC member countries, compared to only around 20% in 2005 exhibiting growth prospect specifically from 2012 (Figure 32). Among the OIC members, the Middle Eastern OIC members are the most important export destinations for Bangladesh's agricultural products with Saudi Arabia and United Arab Emirates in the top 10. Bangladesh's agricultural exports to these two countries more than doubled over the last decade. Major export items to these markets are Vegetables, Spices, Fruit and vegetable juices, and Bread, pastry, cakes, biscuits and other bakers' wares.

Figure 32: Trend of Bangladesh’s Agricultural Export Destinations: OIC vs. Non-OIC Members



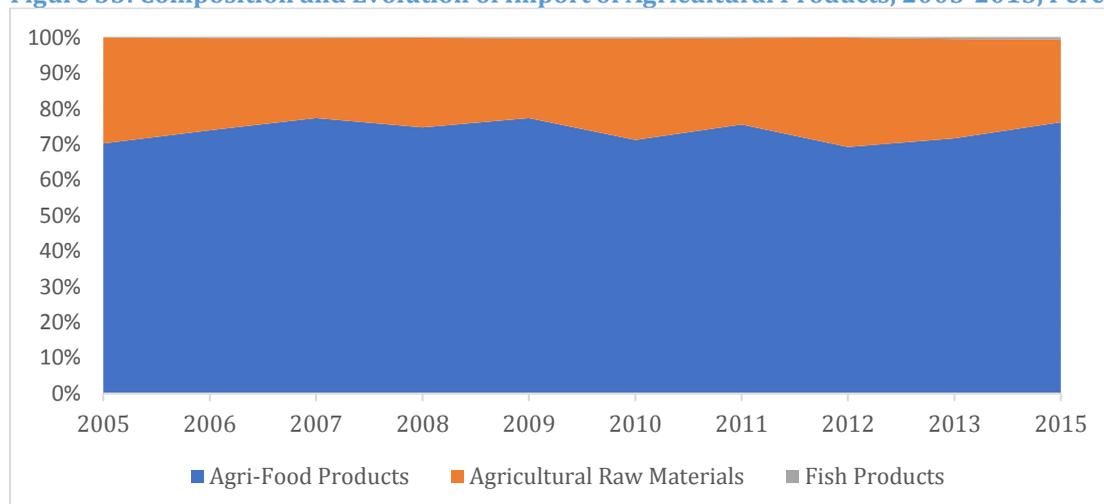
Source: UN Comtrade retrieved through WITS

Import of Agricultural Products

Composition and patterns of Agricultural Imports

Agricultural imports by Bangladesh grew by more than four times from around 2.5 billion USD in 2005 to more than 10 billion USD in 2015. The share of agricultural imports in the country’s total imports slightly increased during this period. Imports of agri-food products represent the major share of Bangladesh’s imports of agricultural products, followed by agricultural raw materials imports. While the share of agri-food imports in total agricultural imports of Bangladesh increased from 70% in 2005 to more than 75 % in 2015, the share of Agricultural raw materials imports reduced from 30% in 2005 to 23 % in 2015. Imports of Fish products increased from only 2.6 million USD in 2005 to 55.4 million USD in 2015; which however, represent only 0.5% of total agricultural imports (Figure 33).

Figure 33: Composition and Evolution of Import of Agricultural Products, 2005-2015, Percent



Source: UN Comtrade retrieved through WITS.

This section focuses on identifying and analyzing top agricultural import products of Bangladesh at the disaggregated level as specified in Annex 1. Table 17 shows the import their shares in country's total agricultural imports for the top 10 import items of Bangladesh from 2005 to 2015, which are selected based on the last 3 years average import value. The following analysis reveals that Bangladesh's imports of agricultural items were also highly concentrated within a small number of product groups during the 2005-2015 period. The top 10 import items (as per COMCEC group of classification) were representing more than 80% of country's total agricultural imports over the last decade, while for some years that share even higher than 90 % of total imports. These top 10 import products are Cotton; Palm oil and its fractions; Soya bean oil and its fractions; Wheat; Cane sugar, raw; Vegetables, fresh, chilled or frozen; Oil-seeds and oleaginous fruits; Feeding stuff for animals; Milk and milk products other than butter or cheese; and Fruit and nuts (not including oil nuts). Among these 10 import products, the first three, Cotton, Palm oil and Soya bean oil represent more than 50 % Bangladesh's total agricultural imports for most of the recent years.

Table 17: Share of Top 10 Agricultural Products in Total Agricultural Import: 2005-2015, Percent

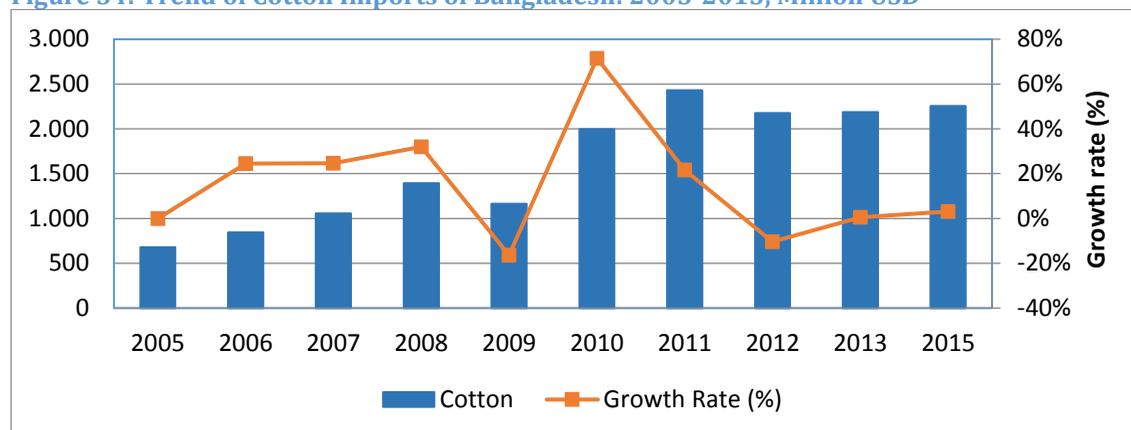
Products	2005	2006	2007	2008	2009	2010	2011	2012	2013	2015
All Agricultural Products	100	100	100	100	100	100	100	100	100	100
Cotton	27	24	21	24	21	27	23	29	26	22
Palm oil and its fractions	19	20	18	26	23	20	22	26	24	17
Soya bean oil and its fractions	6	7	12	8	10	9	10	12	8	9
Wheat	11	11	12	8	14	11	10	3	9	10
Cane sugar, raw	7	5	4	6	9	9	9	6	8	8
Vegetables	5	6	7	4	6	5	3	5	6	7
Oil-seeds and oleaginous fruits	3	3	3	2	4	2	2	3	5	5
Feeding stuff for animals	2	3	3	2	2	2	2	2	3	5
Milk and milk products other than butter or cheese	4	3	3	5	2	2	2	3	3	3
Fruit and nuts (not including oil nuts)	1	1	1	1	2	2	1	2	1	3
Total share of top 10 products	86	83	84	84	93	89	85	93	94	88
Rest of Agricultural import products	14	17	16	16	7	11	15	7	6	12

Source: UN Comtrade retrieved through WITS.

Cotton is the single most import item among the agricultural imports of Bangladesh and represents more than 1/5 of this sector's total import value. Bangladesh's largest export sector, the textile and apparel industry (Bangladesh is the second largest exporter of apparel in the world) is mostly cotton-based and Bangladesh can meet only 1% of its cotton demand from domestic sources. This makes Bangladesh the second largest cotton importing country in the world following China. In 2015, Bangladesh imported 2.3 billion USD worth of cotton, compared with only 680 million USD in 2005. Although the total imports value of cotton more than tripled over the last decade, its share in total agricultural imports showing slightly decreasing trend following the increased import demand of other agricultural products. India, Uzbekistan, Iran, United States, United Arab Emirates, Pakistan, Turkmenistan, Australia, Singapore, and United

Kingdom were the top 10 import sources of cotton for Bangladesh during the 2005-2015 period. Among these countries only India, Uzbekistan and United Arab Emirates (likely misidentified re-exports) provided more than 50% of cotton import in 2015.

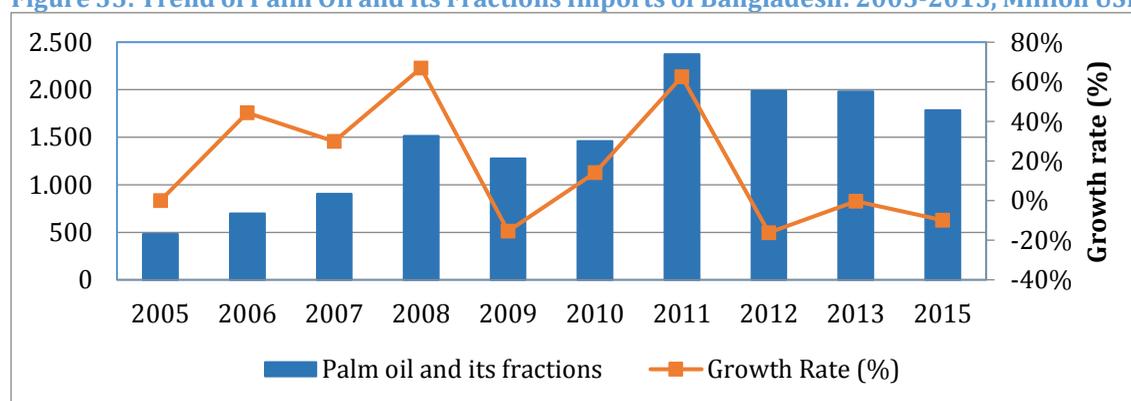
Figure 34: Trend of Cotton Imports of Bangladesh: 2005-2015, Million USD



Source: UN Comtrade retrieved through WITS.

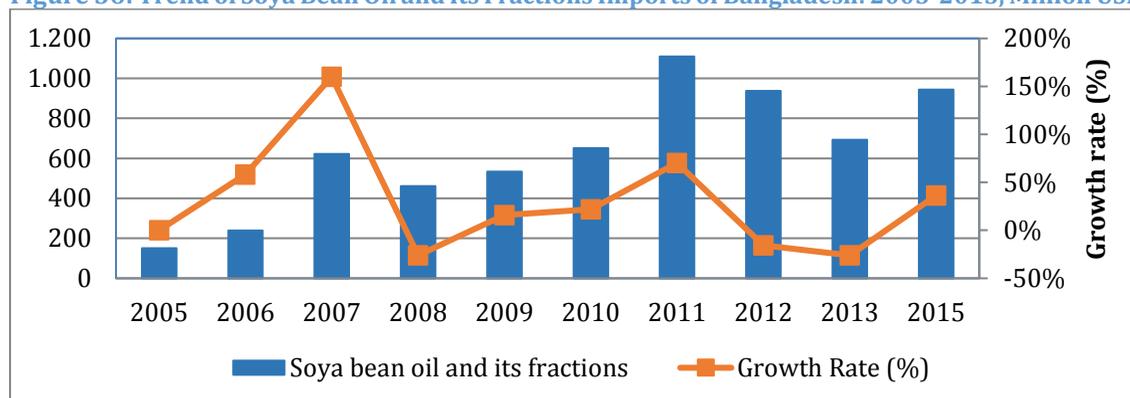
Palm oil and soya bean oil together represent more than one quarter of Bangladesh's total agricultural imports and their imports increased significantly (more than four times) over the last 10 years to meet the increasing internal consumer demands. Indonesia and Malaysia were the two main import sources of these import products for Bangladesh. Over the last 10 years, more than 85 % of Bangladesh's total imports of Palm oil and Soya bean oil were sourced from these two countries, and more than 50% was sourced from Indonesia alone. However the growth trends of these two items were also quite uneven during this period of time (Figure 35 and Figure 36). Imports of oil seeds (mainly rap seeds, mustard seeds and canola seeds) also registered substantial growth during the 2005-2015 period from only 75 million USD in 2005 to 565 million USD in 2015, and mainly sourced from Canada, Argentina, United States and Australia.

Figure 35: Trend of Palm Oil and Its Fractions Imports of Bangladesh: 2005-2015, Million USD



Source: UN Comtrade retrieved through WITS.

Figure 36: Trend of Soya Bean Oil and Its Fractions Imports of Bangladesh: 2005-2015, Million USD



Source: UN Comtrade retrieved through WITS.

Bangladesh is a net importer of wheat and rice. Bangladesh imported almost 1 billion USD worth of wheat in 2015, while the import value of rice in the same year was 400 million USD. However, import trends of rice and wheat varied substantially during the 2005-2015 period based on domestic production. Imports of rice decreased during normal years, but increased significantly in years with natural disasters. Imports of wheat increased substantially over the last decade following increased demand for wheat flour in urban areas and a decreasing trend in domestic production and a substantial drop in food aid.

Sugar imports also showed significant and steady growth during this period following increased demand from the growing agro-processing sector, placing it at fifth important agricultural import item of Bangladesh. Fish and livestock and poultry production in Bangladesh flourished over the last decades and presently meet up the majority of country's internal demand. This has also been reflected in the growing imports of feeding stuff for animals which is increased almost 10 times during the 2005-2015 period.

Table 18: Top 10 Agricultural Import Products and Their Top 10 Import Sources: 2005-2015

Products	Top 10 import sources
All Agricultural Products	Indonesia, India, Brazil, Argentina, Malaysia, Canada, Uzbekistan, Australia, United States, and Thailand
Cotton [263]	India, Uzbekistan, Iran, United States, United Arab Emirates, Pakistan, Turkmenistan, Australia, Singapore, and United Kingdom
Palm oil and its fractions [4222]	Indonesia, Malaysia, Singapore, Thailand, Mali, Venezuela, India, South Korea, United States, and Argentina
Soya bean oil and its fractions [4211]	Argentina, Brazil, United States, Paraguay, Singapore, Saudi Arabia, Indonesia, Malaysia, Vietnam, and Spain
Wheat [041]	Canada, Ukraine, Russian Federation, India, Australia, United States, Pakistan, Argentina, Thailand, and Romania
Cane sugar, raw [06111]	Brazil, India, Thailand, Singapore, Australia, South Africa, United Kingdom, Belize, Indonesia, and Argentina
Vegetables, fresh, chilled or frozen [054]	Canada, Australia, India, China, Turkey, Thailand, Myanmar, Netherlands, United States, and Ethiopia
Oil-seeds and oleaginous fruits [22]	Canada, Argentina, United States, Australia, Uruguay, Brazil, India, Ukraine, Russian Federation, and Indonesia
Feeding stuff for animals [08]	India, United States, Brazil, Netherlands, Singapore, Paraguay, Thailand, Australia, China, and Croatia

Products	Top 10 import sources
Milk and milk products other than butter or cheese [022]	New Zealand, Australia, India, Germany, Denmark, United States, Thailand, Ukraine, Netherlands, and Czech Republic
Fruit and nuts (not including oil nuts) [057]	China, India, United Arab Emirates, South Africa, Indonesia, Thailand, Brazil, Malaysia, Uganda, and Egypt

Source: UN Comtrade retrieved through WITS.

Market structure and networks of Agricultural Imports

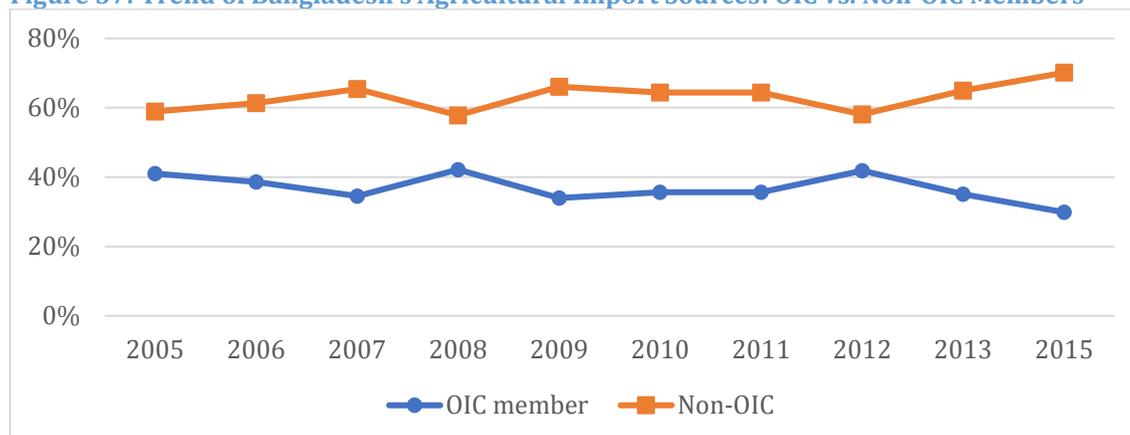
Similar to the agricultural import items, Bangladesh's import partners are also highly concentrated and the top 10 import sources provided around 75% of country's total agricultural imports during the last decade. These top 10 sources of Bangladesh's Agricultural imports during 2005-2015 period were Indonesia, India, Brazil, Argentina, Malaysia, Canada, Australia, the United States, Uzbekistan, and Singapore²².

From a network perspective, Table 18 shows that import sourcing is more varied geographically than export supply, which was relatively concentrated. For cotton, Bangladesh is reliant on the major international suppliers, with Singapore's case likely representing mis-classified re-exports from another origin. Vegetables and cereals primarily come from large agricultural exporters like Australia, Brazil, and Canada, as well as regional partners like Pakistan and India.

OIC member countries are important sources of Bangladesh's agricultural import (Figure 37), placing three member countries, namely Indonesia, Malaysia and Uzbekistan in the top 10 import partners. While Indonesia is traditionally is an important import source of agricultural products for Bangladesh, recent upsurge of imports of Palm oil and Soya bean oil from Indonesia placed the country at the top of Bangladesh's agricultural import partners. Other important agricultural products imported from Indonesia are Animal and vegetable oils; fats and waxes [Rest of 4]; Fruit and nuts (not including oil nuts); Oil-seeds and oleaginous fruits; and Spices, showing important growth in recent years. From Malaysia, Bangladesh mainly imports Palm oil and Cotton, whereas Animal and vegetable oils, fats and waxes; Edible products; and Milk and milk products other than butter or cheese are showing encouraging growth trend. Cotton is the single important imports from Uzbekistan which however showing decreasing trend in recent times.

²² This figure likely includes re-exports from Singapore, as the country's own agricultural production capacity is limited due to lack of arable land.

Figure 37: Trend of Bangladesh's Agricultural Import Sources: OIC vs. Non-OIC Members



Source: UN Comtrade retrieved through WITS

India was the most important source of agricultural imports for Bangladesh in most of the years during the last decade. Cotton is the most important import items from India, while imports of rice, wheat, vegetables, raw cane sugar, sugar and sugar confectionary, spice and feeding stuff for animals showing growing trend in recent years. Again, along with geographical proximity and improved communication and connectivity supplemented by gradual trade liberalization between Bangladesh and India under South Asian Free Trade Agreement (SAFTA) and friendly political relationship in recent years act as the key driving forces for increased trade between these two neighboring countries.

Table 19: Share of Top 10 Import Sources' in Total Agricultural Import: 2005-2015, Percent

Import Sources	2005	2006	2007	2008	2009	2010	2011	2012	2013	2015
All Agricultural import sources	100									
Indonesia	9	11	13	19	19	16	20	20	15	15
India	13	19	19	19	8	10	11	13	13	18
Brazil	8	5	7	5	13	10	12	11	10	11
Argentina	9	7	9	8	6	7	9	8	8	7
Malaysia	11	9	6	7	5	4	4	7	9	5
Canada	2	4	7	4	7	8	4	4	7	6
Australia	5	3	2	2	5	7	2	4	5	3
United States	3	3	4	3	3	3	5	3	4	5
Uzbekistan	14	12	10	11	5	3	1	4	3	2
Singapore	0	0	0	1	2	2	1	2	4	3
Total share of top 10 import sources	74	74	78	79	73	71	68	76	77	75
Rest of Agricultural import sources	26	26	22	21	27	29	32	24	23	25

Source: UN Comtrade retrieved through WITS.

Table 20: Top 10 Agricultural Import Sources with Top 10 Import Items: 2005-2015

Import Sources	Top 10 import products
All Agricultural import sources	Cotton [263], Palm oil and its fractions [4222], Soya bean oil and its fractions [4211], Wheat [041], Cane sugar, raw [06111], Vegetables, fresh, chilled or frozen [054], Oil-seeds and oleaginous fruits [22], Feeding stuff for animals [08], Milk and milk products other than butter or cheese [022], Fruit and nuts (not including oil nuts) [057]
Indonesia	Palm oil and its fractions [4222], Animal and vegetable oils, fats and waxes [Rest of 4], Fruit and nuts (not including oil nuts) [057], Oil-seeds and oleaginous fruits [22], Spices [075], Feeding stuff for animals [08], Soya bean oil and its fractions [4211], Cane sugar, raw [06111], Coconut (copra) oil [4223], Edible products n.e.s. [098]
India	Cotton [263], Rice [042], Wheat [041], Sugars, sugar preparations and honey [Rest of 06], Vegetables, fresh, chilled or frozen [054], Feeding stuff for animals [08], Edible products n.e.s. [098], Cane sugar, raw [06111], Milk and milk products other than butter or cheese [022], Spices [075]
Brazil	Cane sugar, raw [06111], Soya bean oil and its fractions [4211], Oil-seeds and oleaginous fruits [22], Cotton [263], Feeding stuff for animals [08], Wheat [041], Sugars, sugar preparations and honey [Rest of 06], Tobacco and tobacco manufactures [12], Maize except sweet corn [044], Fruit and nuts (not including oil nuts) [057]
Argentina	Soya bean oil and its fractions [4211], Oil-seeds and oleaginous fruits [22], Wheat [041], Feeding stuff for animals [08], Cane sugar, raw [06111], Milk and milk products other than butter or cheese [022], Palm oil and its fractions [4222], Cotton [263], Fruit and nuts (not including oil nuts) [057], Tobacco and tobacco manufactures [12]
Malaysia	Palm oil and its fractions [4222], Cotton [263], Animal and vegetable oils, fats and waxes [Rest of 4], Edible products n.e.s. [098], Milk and milk products other than butter or cheese [022], Fruit and nuts (not including oil nuts) [057], Feeding stuff for animals [08], Soya bean oil and its fractions [4211], Coconut (copra) oil [4223], Crude rubber [23]
Canada	Wheat [041], Vegetables, fresh, chilled or frozen [054], Oil-seeds and oleaginous fruits [22], Feeding stuff for animals [08], Cork and wood [24], Cotton [263], Live animal except fish [00], Crustaceans molluscs etc [037], Edible products n.e.s. [098]
Australia	Vegetables, fresh, chilled or frozen [054], Wheat [041], Cotton [263], Milk and milk products other than butter or cheese [022], Oil-seeds and oleaginous fruits [22], Cane sugar, raw [06111], Feeding stuff for animals [08], Sugars, sugar preparations and honey [Rest of 06], Edible products n.e.s. [098], Fruit and nuts (not including oil nuts) [057], Tobacco and tobacco manufactures [12]
United States	Cotton [263], Oil-seeds and oleaginous fruits [22], Wheat [041], Feeding stuff for animals [08], Soya bean oil and its fractions [4211], Milk and milk products other than butter or cheese [022], Live animal except fish [00], Vegetables, fresh, chilled or frozen [054], Maize except sweet corn [044], Fruit and nuts (not including oil nuts) [057]
Uzbekistan	Cotton [263], Milk and milk products other than butter or cheese [022], Silk [261], Fruit and nuts (not including oil nuts) [057], Cork and wood [24], Tobacco and tobacco manufactures [12]
Singapore	Cotton [263], Palm oil and its fractions [4222], Feeding stuff for animals [08], Cane sugar, raw [06111], Spices [075], Wheat [041], Cork and wood [24], Alcoholic beverages [112], Soya bean oil and its fractions [4211], Edible products n.e.s. [098]

Source: UN Comtrade retrieved through WITS.



Agricultural Quality Framework

Agricultural Quality related policies and infrastructure

The Ministry of Industries is responsible for leading and facilitating the legal and technical institutional framework for national standards, quality, and conformity assessment. The Bangladesh Standards and Testing Institution (BSTI), the national standardization body, formulates national standards for all products including agricultural products (except pharmaceuticals), enforces compliance with standards, and certifies the quality of products. Under the Bangladesh Accreditation Board Act 2006, the Bangladesh Accreditation Board (BAB) was established with a mandate to enhance the recognition and acceptance of products and services in international, regional, and domestic markets.

Bangladesh adopted a National Quality Policy for Goods and Services, 2015 to upgrade its national quality infrastructure to international level. The Government of Bangladesh also enacted the Safe Food Act 2013 to regulate and coordinate activities related to food production, import, processing, stockpiling, supplying, marketing, and sales to ensure the people's right to access safe food through appropriate application of scientific processes and technology. The Bangladesh Food Safety Authority (BFSA) was established in 2015 to realize the objectives outlined in this Act.

Agricultural Certification and Labelling

Present Infrastructure and Practice

BSTI is the only product certification body in Bangladesh for local consumption as well as for export and import. In theory, Bangladesh allows the sale of products that comply with standards issued by a recognized international organization if there is no relevant national standard; but in practice, the sale of such products requires certification from the BSTI. The other national testing organizations and conformity assessment bodies involved in testing, inspection, and certification for the agricultural sector are the Bangladesh Centre for Scientific and Industrial Research (BCSIR), the Bangladesh Atomic Energy Commission (BAEC), and the Fisheries Inspection & Quality Control (FIQC).

The 2006 Product Labelling Policy provides labelling requirements for all domestically produced and imported products, including agricultural commodities. Manufacturers and importers are allowed to label their product according to their own choice. All product labels must include the manufacturer's name, full address, country of origin, and weights and measures expressed in International Units. Additionally, agricultural and food products labels need to incorporate ingredients, composition, batch number, manufacturing and expiry dates, and any other related information.²³

²³ Bangladesh Standards and Testing Institution (2018), available at: <http://www.bsti.gov.bd>, (accessed on 1 April 2018)

Local and Regional Quality labelling scheme

Halal Certification

Bangladesh is actively working to explore and expand its export basket especially in developing markets to take advantage of approximately 1.25 trillion USD worth market of the halal food sector²⁴. Halal certification is no longer just purely a religious issue, but is increasingly becoming a global symbol for quality assurance and life style choice. At present, there is no mandatory regulatory requirement of halal certification or labelling for importing agricultural or food and beverage products. However, export of Bangladesh's food and beverage items require halal certification in most of the Muslim-majority countries. Halal certification has also developed as a significant force in the Muslim-minority countries, where halal food has become a defining element of Muslim identity. Currently in Bangladesh, one public (Islamic Foundation Bangladesh) and one private (Halal Bangladesh Services Limited) organization issues Halal certifications. The Islamic Foundation Bangladesh launched its Halal Diagnostic Laboratory in Dhaka's Agargaon on 4 August 2017, the first of its kind in the country, to test products for their compliance with Islamic rules and regulations before giving them Halal certificates.

The OIC is the only global body working on developing a unified regulatory framework and a sound mechanism for the halal market. The designated body under the OIC is the Standards and Metrology Institute for the Islamic Countries (SMIIC), which currently has a membership of 35 countries. Various standards and metrology bodies in the Islamic world are actively collaborating with SMIIC, such as ESMA and the Turkish Accreditation Agency, and several standards have been developed and published. These include standards for food production, certification bodies and accreditation bodies. The aim is to provide a unified framework in which all the OIC member states all use the same standards and methodologies for certification, accreditation and laboratory services. The framework follows the normative mainstream structure and may culminate in the formation of an International Halal Accreditation Forum as the overarching authority.²⁵ Bangladesh is yet to become a member of the SMIIC, which, however, could have assist Bangladeshi meat exporters to overcome the market entry requirements in the Saudi market, as well as, act as a driving force to enhance its exports of halal food and beverages to other Muslim-majority countries.

Geographical Indications

Bangladesh enacted Geographical Indications (GIs) of goods (registration and protection) Act, 2013 to facilitate the protection of traditional products nationally and possibly abroad, if Bangladeshi GIs could be registered in other countries. The 2016 National Industrial Policy has also identified this as a key area for policy initiatives. Following adoption of the GIs Act, two products namely, *Jamdani* and *Hilsha* received GI registration in August 2017.

However, the enactment of the 2013 GIs Act 2013 is merely the first step in a longer process of recognition, commercialization, and management of Bangladeshi GIs and GI-denominated products. In order to preserve the country's cultural heritage and to protect traditional products

²⁴ State of the Global Islamic Economy report 2017/18, commissioned by the Dubai government, and researched and written by Thompson Reuters and DinarStandard valued the halal food and beverage market at 1.24 trillion USD in 2016. That represents 18.2% of the total global food and beverage market, and estimated to reach 1.93 trillion USD by 2022.

²⁵ For more details please visit the Standards and Metrology Institute for the Islamic Countries (SMIIC) webpage, available at: <https://www.smiic.org/en/smiic>

and fully benefit from them, all products identified as GIs need to be brought under the registration mechanism now put into place by the GI Act. Harmonization and mutual recognition of Bangladesh's GI products with countries that have a tradition of protecting GIs through aligned legal conditions and effective protection system is necessary to realize the opportunity created by the adoption of the GI Act.²⁶

International and Regional Labels

Bangladesh is working towards promoting its export products to upstream markets through harmonizing and promoting its public and private standards with international and regional standards. Working under the GlobalGap approach, Bangladesh has successfully exported about 5000 tons of fresh horticultural produce and 300 tons of non-traditional items like French beans and Broccoli to EU countries, through producing products to international standards by maintaining a contract growing system, Good Agricultural Practice (GAP), Traceability and Maximum Residue Level (MRL). At the regional level, in 2006 ASEAN countries through the ASEAN Secretariat developed the ASEANGAP for fruits and vegetables with the purpose of enhancing harmonization of national GAP programs within the ASEAN region. The Ministry of Agriculture and its associated organizations are working towards developing a national program on Good Agricultural Practice (BanglaGAP) for fresh produce in Bangladesh.

SARRC members are also working to achieve and enhance coordination and cooperation among South Asian countries in the fields of standardization and conformity assessment. The South Asian Regional Standards Organization (SARSO) was established in 2011 to develop harmonized Standards for the region to facilitate intra-regional trade and to have access to the global market. BSTI is accredited by the National Accreditation Board for Certification Bodies (NABCB), India starting from 9 January 2012 aiming to ensure export products' conformity assessment in the regional and Indian markets.²⁷ Recently 21 Bangladeshi food items certified by the BSTI received permission to enter India without further testing as the Indian authorities started accepting the test certificates provided by the BSTI.²⁸ Bangladesh could also pursue similar regional standard and conformity assessment approach to promote its exports and imports with the OIC member countries, especially by joining the SMIIC.

Recent Evolution of the Trade Policy Landscape

Trade policy with respect to imported food staples (rice and wheat) is characterized by interventions based on food security concerns and variable in terms of levels of protection and support. According to the WTO Trade Policy Review, Bangladesh has bound 17.8 % of its tariff lines, from which 100% of agricultural tariff lines are bound; while this is the case for only 2.7% of industrial tariff lines. The average applied customs duty on agricultural products (19.4%) remains higher than the one for industrial goods (14.3%). Additional protection has been maintained through other charges and internal taxes, notably regulatory duties and supplementary duties (SDs). Regarding import restrictions, Bangladesh has maintained the

²⁶ Zahur, M. (2017). The Geographical Indication Act 2013: Protection of Traditional Knowledge in Bangladesh with Special Reference to Jamdani. In I. Calboli & W. Ng-Loy (Eds.), *Geographical Indications at the Crossroads of Trade, Development, and Culture: Focus on Asia-Pacific* (pp. 439-460). Cambridge: Cambridge University Press. doi:10.1017/9781316711002.019

²⁷ For more information, please see the webpage of National Accreditation Board for Certification Bodies (NABCB), India, available at: <http://nabcb.qci.org.in/accreditation/prdt/prdt002-BSTI.php>

²⁸ Address by Indian High Commissioner Harsh Vardhan Shringla at the Indian Agro Products Buyer-Seller Meet 2018 at Hotel Pan Pacific Sonargaon, Dhaka, 04 March 2018, available at: <http://www.newagebd.net/article/19316/21-bangladeshi-food-items-with-bsti-certification-to-enter-india-without-test>

limited product coverage of the control list containing import prohibitions and restrictions in force. The new Import Policy Order (2015-2018) also has similar objectives and adds the aim of making a strong base for indigenous exports by facilitating backward linkages for export-oriented local industries. To achieve development of targeted export sectors, Bangladesh uses high tariffs on frozen shrimp and fish, and on jute, despite the fact that they are major exports. Tariffs are also high on some import substitution crops, for example vegetables, fruits, nuts and spices.²⁹

Over the last decade, Bangladesh's export policies have emphasized the need to diversify the export base, stimulate higher value-added exports, improve the quality of exports, develop backward-linkage industries, and undertake vigorous marketing efforts, which also reflected the ongoing Export Policy (2015-2018). A key component of the Export Policy (2015-2018) has been the use of various types of assistance for domestic production and exports (export-oriented firms, 'deemed exporters'), which varies by type of activity to, inter alia, encourage use of domestic technology, import substitution, adjustment and/or boost export performance, as well as to offset the adverse effects of tariffs and other border taxes. Such assistance is available in the form of tax and non-tax incentives. The former includes indirect tax measures, such as concessionary duty rates on imports of capital machinery and spare parts, duty drawback for exports, special bonded warehouses for inputs used in the manufacture of finished products, and Value Added Tax (VAT) rebates on certain export-related services; and direct tax measures, like rebates on taxable income generated from any export business or exemption from income tax. Other forms of support consist of cash grants for exports, accelerated depreciation, and various types of loans at concessional interest rates (for exports, agricultural production, small and cottage industries) determined by the Bangladesh Bank. Export prohibitions are maintained mainly for reasons of health, ecological balance, security, archaeological value, or maintenance of adequate domestic supply. Export permits or authorizations are required only for a few items.³⁰

Main Barriers and Potential Drivers: Stakeholders' Views

This section summarizes the findings from stakeholder consultations through semi-structured interviews on the main obstacles that inhibit further exploitation of Bangladesh's agricultural trade potential, and possible drivers that could stimulate the country's exports and imports of agricultural products with the rest of the world in general, and with OIC members in particular.

Major Barriers Affecting Agricultural Trade

Government Policies Affecting Agricultural Trade

Stakeholders largely agreed that Bangladesh's trade policy and regulatory regime related to agricultural trade, production, the processing industry, as well as other sectoral policies, are generally focused on protection and promotion of domestic production, related industries and exports thereof, ensuring the country's food security and safeguarding against hazards to public

²⁹ Ministry of Commerce, Government of Bangladesh (2015), Bangladesh import policy order 2015-18, available at: http://mincom.portal.gov.bd/sites/default/files/files/mincom.portal.gov.bd/page/e177ee18_f389_4f9e_a40c_57435cfac5b2/Import%20Policy.pdf [accessed on 2 April 2018]

³⁰ Ministry of Commerce, Government of Bangladesh (2015), Bangladesh export policy 2015-18, available at: http://mincom.portal.gov.bd/sites/default/files/files/mincom.portal.gov.bd/page/e177ee18_f389_4f9e_a40c_57435cfac5b2/Export%20Policy%202015-2018_English.pdf [accessed on 2 April 2018]

health, and the environment. However, exporters' consulted often identified non-tariff market access barriers as one of the major obstacles that hindering expected export growth of Bangladesh's agricultural exports and request for more active government initiatives to ensure market access for agri-food export items. Government policymakers mainly highlighted liberalization of agricultural trade policy regime which has been reflected in the gradual reduction of the number of products in the sensitive list (presently 21 HS-4 digit products face import bans based on social, moral, security, religious and environmental grounds and only 9 products are subject to conditional exports), However, agri-food importers pointed that the applied para-tariffs in the form of Supplementary Duty and Regulatory Duty on many import items are on the rise and impeding the realization of full benefit from the liberalized agri-food trade regime.

Lack of Harmonization and Mutual Recognition of Standards with other OIC Members

Exporters and importers face challenges with regards to products' quality and standards since Bangladesh does not have any mutual recognition agreements for the acceptance of its product standards, testing, and certification with any it's trading partners, which hampers bilateral trade, especially agricultural trade with the OIC members. (Only India recently signaled possible acceptance of Bangladesh's testing certification of 21 food items.)

Capacity Constraints in Conformity Assessment and Standards Agencies

Stakeholders identified capacity constraints, for example, lack of adequate testing facility including required equipment, accessories and chemicals, as well as the shortage of qualified manpower in BSTI offices and in Plant Quarantine Wings of the Department of Agricultural Extension (DAE) are negatively affecting both the exports and imports of agricultural products. The Plant Quarantine offices in many land ports suffer from capacity constraints to conduct some tests, such as the organochlorine, organophosphate tests, and maximum residue limit (MRL) tests. Import permits of agricultural products are only issued from the DAE Dhaka office, resulting additional costs and delays for imports of agricultural products.

Poor Infrastructure and Inadequate Facilities at Major Ports and Connecting Highways

Infrastructural deficiency is one of the main obstacles affecting agricultural trade reported by the agri-food exporters and importers. Lack of adequate infrastructure and inefficient operational procedures followed at the country's main port (Chittagong Port, though which more than 90% of country's trade takes place) have often resulted in severe congestion of cargo vessels and containers at the outer anchorage of Chittagong Port. The port also lacks necessary container handling equipment which often causes undesirable delays in cargo handling and transshipment. Dhaka International Airport also suffers from inadequate cold storage, cool-chain facilities, and loose container loading sheds which severely affect exports and imports of vegetables and other agro-processed products and foods through air cargo.

Barriers to border clearance of traded goods

Agri-food traders reported that the processing of import and export consignments clearance at the point of entry and exit by Customs and other government agencies is often affected primarily due to: lack of reliable, fast and uninterrupted internet connectivity causing frequent interruptions with the Automated System for Customs Data (ASYCUDA) World server; lack of

adequate and dedicated sheds for physical examination of imports and export goods; lack of skills (e.g. tariff classification and valuation); incomplete submission of declaration (e.g. lack of necessary documents with the goods declaration); and lack of proper coordination between Customs and other border agencies in conducting inspections of consignments. Absence of risk management in the selection process of customs inspections leads to high rates of interventions resulting in unnecessary delays in customs clearance procedures.

Lack of Awareness among the Trading Community about Regulatory and Procedural Requirements

Government agencies believe that lack of proper understanding among exporters and importers as well as C&F agents about the regulatory requirements, applicable laws, rules and procedures, standards, certifications and packaging requirements in export destinations act as an important barrier to agricultural trade. In the case of imports, the trading community, at times, submits incomplete declarations due to lack of knowledge of documentary requirements, and suffers from the subsequent delays.

Potential Drivers to Stimulate Bangladesh's Agricultural Trade

Along with addressing supply side capacity constraints to produce safe, compliant and quality agricultural products through full implementation Good Agricultural Practices, stakeholders identified the following major areas of interventions that could assist in exploring Bangladesh's agricultural trade potential with rest of the world and OIC members, in particular.

Harmonization of Standards and Mutual Recognition Agreement with Agri-food Trade Partners including other OIC Members

Stakeholders' consultation revealed the need for extended cooperation between Bangladesh and other OIC members to harmonize the application of non-tariff measures (TBTs and SPS measures) related to product quality and standards among the member countries. The goal of such harmonization should be to have the same understanding of the scope of these NTMs and to standardize the application of the mechanisms that affect them. Mutual recognition agreements among the member countries about the acceptance of quality certifications issued by each other could have huge positive impact to promote agricultural trade between Bangladesh and other OIC members. For example, introducing and accepting common halal certification procedures and labelling through the OIC framework would greatly enhance OIC-wide food trade networks. To address this, Bangladesh could consider joining the SMIIC, which could act as a driving force to enhance its exports of halal food and beverages to other Muslim-majority countries. For instance, this could have assisted Bangladeshi meat exporters to overcome the market entry requirements in the Saudi market, mentioned earlier. At the bilateral level, Bangladesh could also consider possible collaboration with other OIC members following its standard and testing certification related cooperation arrangement with India.

Operationalization of Trade Preferential System among the Member States of the OIC

The entry into force of the Trade Preferential System among the Member States of the OIC could be a great facilitator of the trade between Bangladesh and other OIC members including agri-food trade. The most important practical steps to operationalize the TPS-OIC agreement is updating the concession lists by the country. As of December 2017, Bangladesh along with

Turkey, Malaysia, Pakistan, Jordan, Iran and Morocco have conveyed their updated concession lists. Stakeholders believe that operationalization TPS-OIC agreement could have a great positive impact on fostering agricultural trade between Bangladesh and other OIC member countries.

Addressing Infrastructure Capacity Constraints

Agri-food traders urged for immediate interventions to upgrade the operational efficiency of the Chittagong port to meet the growing demands of country's exports and imports. Special attention requested towards reducing waiting time at the outer anchorage, installing required cargo handling equipment, arranging sufficient sheds and storage facilities including cool chain facilities to promote agricultural trade. Transportation facilities need to be upgraded between major agricultural production areas, agro-processing industrial sites and port cities to ensure timely delivery of agricultural exports and imports. Air transportation is crucial for exports and imports of some of the agricultural products, for example, fresh vegetables, fruits and cut flowers. Major areas of intervention identified are arranging sufficient cold storage and cool chain facilities, increasing the capacity of loose container load sheds, as well as ensuring required cargo space in flights and reducing very high airfares.

Addressing Procedural Barriers

Although the Bangladesh National Board of Revenue has taken several important measures to modernize its customs procedures, agricultural trading community believe that there still remains significant scope to harmonize internal work flows that could speed up border clearance procedures. Further clarity and harmonization of trade related policies and better coordination among implementing departments and organizations is crucial to promoting the country's agricultural trade.

Addressing Capacity Constraints of Standards Organizations

Stakeholders' consultations reveal that the GoB should focus on upgrading the country's conformity assessment (certification, inspection and testing) procedures to meet the demands of export and import partners and to facilitate overall agricultural trade. These involve addressing capacity constraints of testing facilities and certification procedures of agricultural exports and imports as well as investing in increasing technical know-how and knowledge transfer.

Harmonization and Mutual Recognition of Bangladesh's GI products

Harmonization and mutual recognition of Bangladesh's GI products with countries, in particular with OIC members, those have a tradition of protecting GIs through aligned legal conditions and effective protection system has been identified as be an important potential driver to enhance agricultural trade of Bangladesh by realizing the opportunity created by the adoption of the GI Act 2013.

Conclusions and Lessons Learned

Bangladesh's agricultural trade has been expanding over the last decade; however, its full potential in agri-food trade is yet to be explored. This is evident from the case study, there are five key challenges impacting Bangladesh's agricultural trade performance and its agri-food trade networks with the rest of the world and particularly OIC members:

1. **Highly concentrated agri-food trade products and markets:** Bangladesh agricultural exports and imports items are highly concentrated and only 10 products account for more than 85% of its total agri-food trade. Similarly, the country's major share of agricultural exports and imports are also limited to a limited number of destination and source countries.
2. **Lack of effective bilateral and regional trade agreements with other OIC members:** Bangladesh yet to have any bilateral trade agreements with any of the OIC members and the Trade Preferential System among the Member States of the OIC has yet to be operationalized. These affect market access of two way agricultural trade between Bangladesh and other OIC members.
3. **Mutual recognition of standards and quality certification:** One of the major factors hindering the expansion and strengthening of the country's agri-food networks is the non-recognition of its standards and certification by its trading partners.
4. **Trade related infrastructure:** The country's ports and internal road and railway infrastructure have not been fully upgraded to meet the growing needs of its trade sector. They often negatively affect the country's agricultural trade performance and hinder exploration of its full potential.
5. **Quality infrastructure:** Although Bangladesh adopted a National Quality Policy to upgrade its quality infrastructure; there are significant challenges that remain unattended in terms of setting up a comprehensive standards and conformity assessment system to meet the requirements of upstream export markets.

Indeed, the earliest entry into force and operationalization of the Trade Preferential System among the Member States of the OIC would facilitate both export and imports of agricultural trade between Bangladesh and other OIC members. Although, Bangladesh along with few other OIC members has submitted its updated concession lists, other OIC members could take appropriate initiatives to operationalize the TPS-OIC. The OIC members could also consider, either collectively or bilaterally, potential collaboration with Bangladesh to address its pressing trade related infrastructural requirements. Regarding quality infrastructure related bottlenecks, there is a clear recognition among stakeholders that harmonization with international standards represent a sensible starting point for developing acceptable standardization and conformity assessment system that can form the basis for upgrading trade competitiveness of the agricultural sector of the country. Joining and working under the framework of the Standards and Metrology Institute for the Islamic Countries (SMIIC) could be certainly foster such collaboration with other OIC members. Harmonization and mutual recognition of Bangladesh's GIs, in particular between other OIC members, could be another potential area of mutual cooperation. These will undoubtedly help to boost Bangladesh's agricultural trade with both regional partner countries as well as OIC member counties with a view to building sustainable regional and OIC-wide agricultural trade networks.

4.2. Cameroon

The Republic of Cameroon covers an area of 475,442 km² and has a population of approximately 23.4 million with 24.6% living in urban settings.³¹ Located in central Africa, the country borders Equatorial Guinea, Gabon, the Republic of the Congo, the Central African Republic, Chad and Nigeria, making it a regional center for trade in goods and services. As of 2016, Cameroon had a GDP of 29,334 million USD and between 2013 and 2015 trade represented 27.3% of the GDP.³² Cameroon's main trading partners are the EU which accounts for a 47.4% share of the total exports, followed by India and China which represent 15.6% and 12.5% of exports respectively.³³ The main points of origin for imports into Cameroon are the EU (27.7%), China (19.4%), and Nigeria (12.1%).

Cameroon's current trade flows are the culmination of a targeted policy shift away from decades of anti-export policies and a strategic opening of the economy to the international market system.³⁴ Together with its CEMAC regional partners Cameroon introduced in 1994 new customs and fiscal regimes.³⁵ More than a decade after their implementation, exports from three main commodity groups dominate the market: agricultural products at 46.2%, fuel/mining products at 46%, and manufactured goods at a distant third with only 7.7%. Taken collectively, goods outside of these categories represent only 0.1% of the country's total exports.³⁶ Cameroon is dependent upon foreign manufactured goods which account for 50% of total imports.³⁷ In 2011, crude oil and petroleum, cocoa, logs and petroleum accounted for $\frac{3}{4}$ of total exports. In terms of socio-economic indicators such as health, education, and income disparities, Cameroon ranks below countries like Senegal and Ghana that have lower GDP per capita.³⁸ Indeed, despite being the most economically diverse country in CEMAC and despite sustained growth between 2007 and 2014 the country's poverty increased by 12% and the poor stood at 56% of the population. Most of the country's poor population reside in Northern Cameroon which borders Boko-Haram affected Northern Nigeria and Chad as well as conflict affected Central African Republic.³⁹

Agricultural Trade Performance

Cameroon's main categories of agricultural product import and exports are analyzed below in a dynamic perspective. The analysis moves from the general to the specific, by becoming increasingly focused on individual disaggregated products and countries of origin and destination.

Composition and Patterns of Agricultural Exports

Since the 2008 food crisis, agri-food products dominate agricultural exports from Cameroon with a record high of 64.12% in 2009 (Figure 38). Over the period 2005-2016, fish exports are

³¹ World Bank. 2018. *The World Bank in Cameroon*. Last accessed: 19 April of 2018. <http://www.worldbank.org/en/country/cameroon/overview>.

³² World Trade Organization. (2018). Member Profiles-Cameroon. Available at: http://stat.wto.org/CountryProfiles/CM_e.htm

³³ Ibid.

³⁴ WTO. (1995). Secretariat Report. Available at: https://www.wto.org/english/tratop_e/tpr_e/tp002_e.htm

³⁵ Ibid

³⁶ World Trade Organization. (2018) Member Profiles-Cameroon. Available at: http://stat.wto.org/CountryProfiles/CM_e.htm

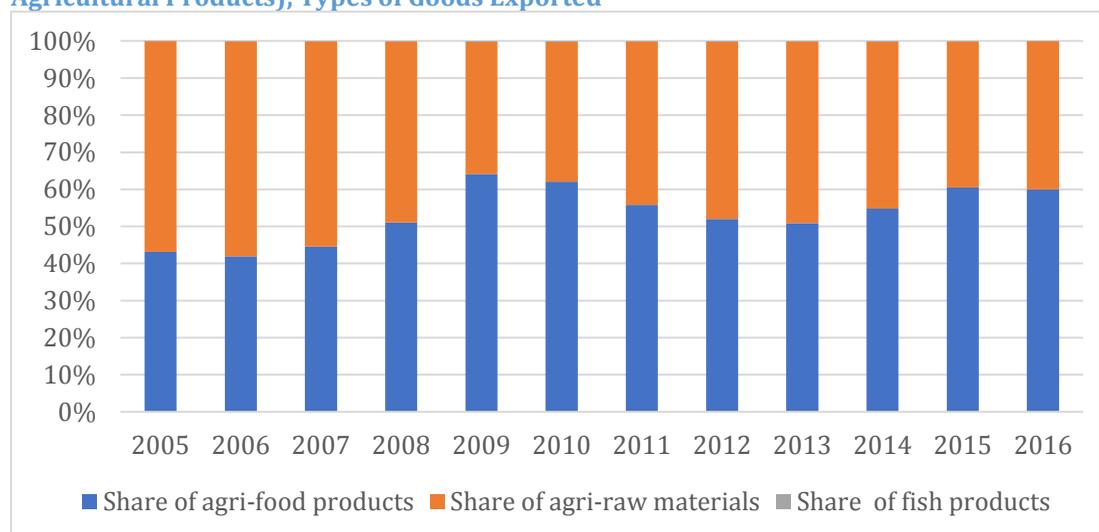
³⁷ Ibid.

³⁸ USDA Foreign Agriculture Service. (2013). Global Agricultural Information Network Report.

³⁹ World Bank. (2018). *The World Bank in Cameroon*. <http://www.worldbank.org/en/country/cameroon/overview>.

very poorly represented. This can be explained by the low representation of fish in the production and marketing of agricultural products in Cameroon. Coffee, tea, cocoa and spices are the dominant food exports. Estimated at 19.2 million USD in 2005, these agri-food products saw a significant increase reaching an estimated 122.4 million USD in 2016 (Figure 39) and accounting for nearly 80% of food exports in 2016.

Figure 38: Share of Agricultural Products Group in Cameroon's Exports (Percentage of Total Agricultural Products), Types of Goods Exported

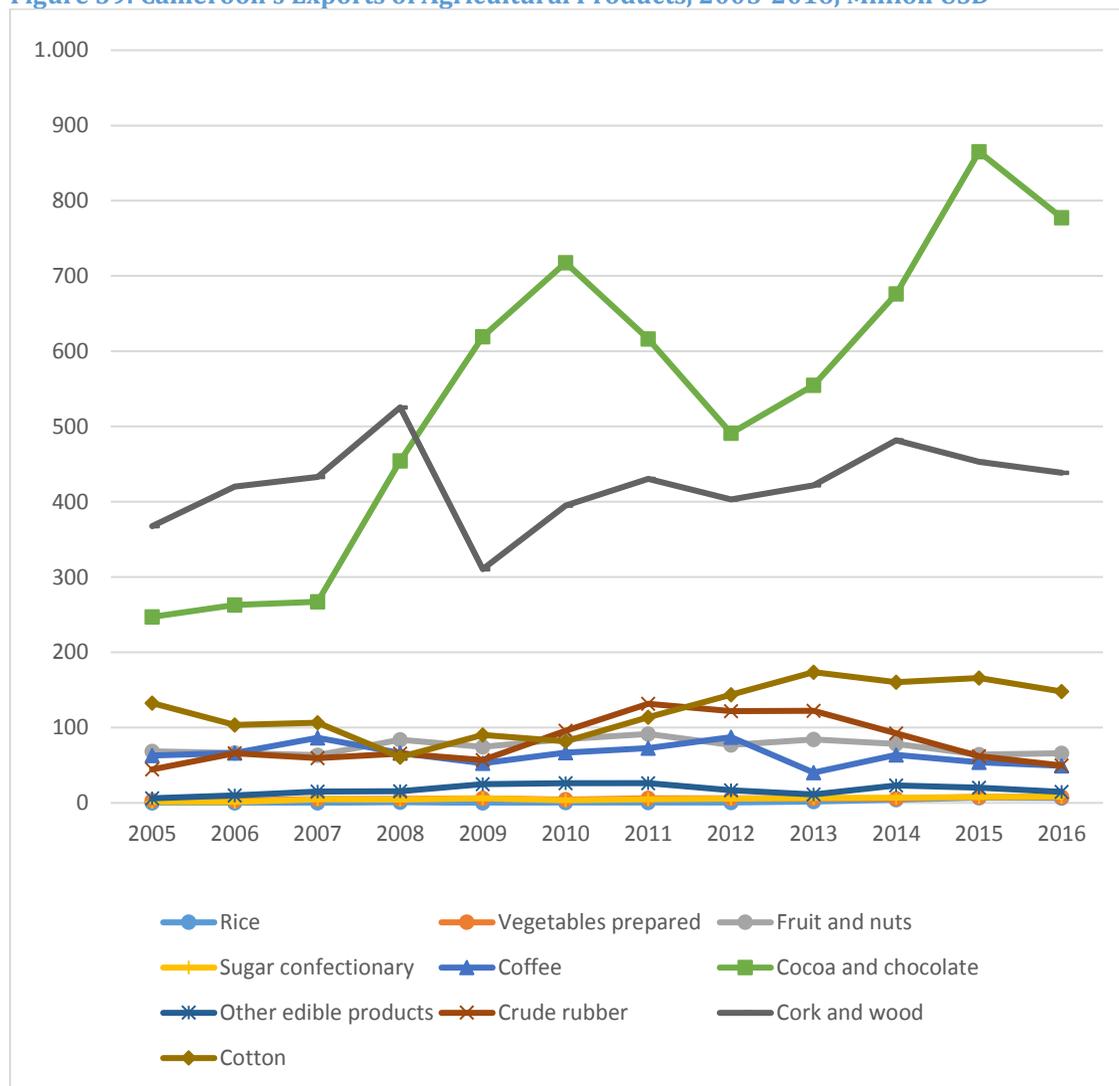


Source: UN Comtrade.

At a disaggregated product level, Cameroon's exports are highly concentrated. The top ten products account for nearly 98% of total exports of agricultural products, with just two products, cocoa and chocolate and cork and wood, accounting for 76%. This level of concentration is not uncommon in a resource dependent economy, but can create macroeconomic problems, as it means the agricultural economy is highly subject to international price swings in just a few key commodities.

Figure 39 shows recent trends in Cameroon's exports at the product level. The high degree of product-level concentration emerges clearly from the figure. A second key finding is that export trends are not clear in for the two key commodities: cork and wood is relatively flat over time, and cocoa and chocolate has gone through periods of growth followed by contraction, which suggests that it may have cyclical features.

Figure 39: Cameroon's Exports of Agricultural Products, 2005-2016, Million USD

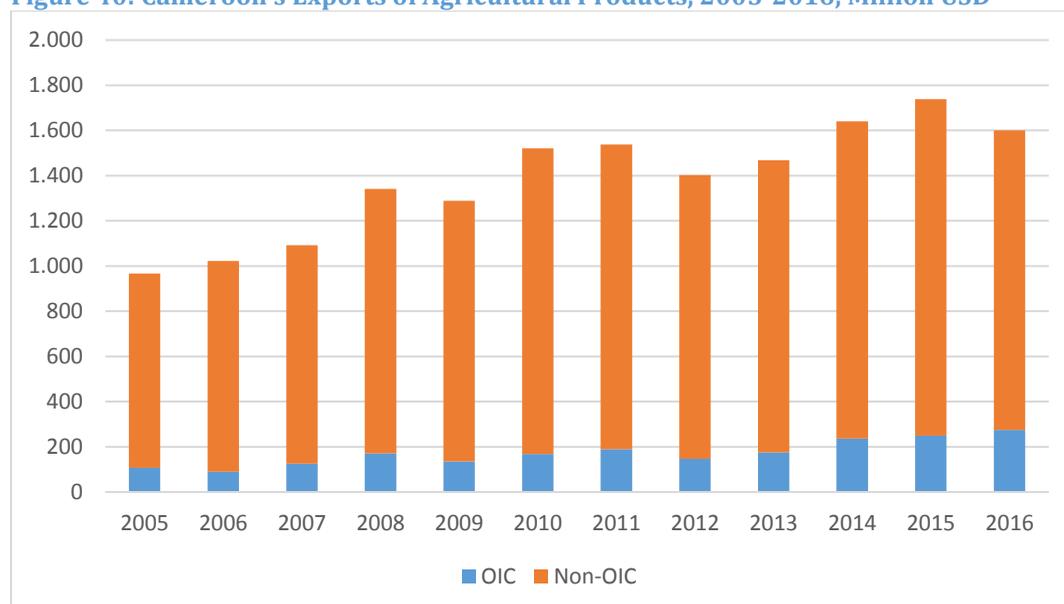


Source: UN Comtrade

Market structure and networks of agricultural exports

Figure 40 shows the evolution of Cameroon's total exports of agricultural products over the last decade. Non-OIC countries play a predominant role as sources of demand, as indeed is common for OIC members. The overall trend in export performance is unclear: recent growth was undermined by a weak 2016 performance, and in any case, the role of cocoa and wood products in the total means that it is highly influenced by just these two products.

Figure 40: Cameroon's Exports of Agricultural Products, 2005-2016, Million USD



Source: UN Comtrade.

Table 21 breaks down the above trends to the disaggregated product level, looking at leading export product and destination combinations. For most products, trade is predominantly with African countries, or with the EU. However, the products for which that is the case only account for a small proportion of Cameroon's export basket. For cocoa and chocolate, the EU is a leading importer, but Asian countries like Malaysia and Indonesia are also important. This trend is even more apparent for cork and wood and cotton: these agricultural raw materials are in heavy demand from rapidly industrializing countries in Asia, like China, Vietnam, India, Indonesia, and Bangladesh. Table 21 suggests that Cameroon's export pattern at a disaggregated level is largely determined by geography and preferential market access for most products, but for key products strong destination demand plays the predominant role.

Table 21: Leading Export Product - Destination Combinations for Cameroon, 2016.

Product	Leading Export Destinations
Rice	Chad, Congo, Central African Republic, Nigeria, USA
Vegetables prepared	France, Chad, Belgium, Gabon, USA, Netherlands, UK, Central African Republic, Canada, Germany.
Fruit and nuts	France, Belgium, Italy, UK, Netherlands, Poland, Spain, Portugal, Chad, Germany.
Sugar confectionary	Congo, Chad, Nigeria, Gabon, Equitorial Guinea, Central African Republic.
Coffee	Germany, Portugal, France, Italy, Belgium, Algeria, USA, Russia, Gabon, Spain.
Cocoa and chocolate	Netherlands, Belgium, Malaysia, Spain, France, USA, Indonesia, Germany, Turkey, Italy.
Other edible products	Gabon, Equitorial Guinea, Central African Republic, Chad, Congo, Cote d'Ivoire, UK, France, Ghana, Senegal.
Crude rubber	Belgium, USA, Germany, Italy, Netherlands, Spain, France, Poland, Singapore, Slovenia.
Cork and wood	China, Vietnam, Belgium, Italy, France, Spain, Senegal, USA, UK, Turkey.
Cotton	Bangladesh, China, Malaysia, India, Indonesia, Vietnam, Turkey, Nigeria, Portugal, Germany.

Source: UN Comtrade.

To formalize this analysis, Table 22 presents out degree centrality scores for Cameroon over the last decade, disaggregated by leading product. The analysis shows a limited degree of export diversification over time in most, but not all, products. Cocoa and chocolate stands out as having a relatively high number of destination markets, whereas rice exports are strongly concentrated on relatively nearby African partners. Combining the two tables suggests that network dynamics vary substantially at a product level: in some cases geography is dominant, in others it is a combination of geography and trade policy, and particularly for raw materials, foreign derived demand for inputs plays an important role in shaping trade relations.

Table 22: Out Degree Centrality, Cameroon Main Export Products, 2005-2016.

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Rice		2	1	2		2	3	4	6	2	2	5
Vegetables prepared	12	11	12	12	16	14	18	16	13	15	13	16
Fruit and nuts	15	11	13	18	18	16	17	19	18	21	24	20
Sugar confectionary	7	3	6	6	9	6	7	8	7	8	8	6
Coffee	21	22	27	32	25	34	28	30	27	26	38	31
Cocoa and chocolate	21	18	23	24	24	25	23	28	29	27	30	25
Other edible products	18	16	17	17	23	21	23	20	16	18	17	21
Crude rubber	17	16	22	18	26	27	29	31	28	26	27	23
Cork and wood	60	64	71	68	66	72	73	70	78	64	68	71
Cotton	26	23	27	20	18	22	22	15	16	21	24	17

Source: UN Comtrade.

Composition and Patterns of Agricultural Imports

Cameroon's primary points of import are the European Union which accounts for an estimated 27.7 %, China at 19.4 % and Nigeria at 12.1 %. While Europe remains a primary partner in terms of imports, its share of Cameroonian trade has been on a steady decline since 2006. This steady decrease in imports is also evident in Cameroon's trade with its fellow African nations.⁴⁰ The most significant import growths are observed with Cameroon's Asian trade partners. Between 2006 to 2010 Chinese imports increased by 4 % (from 6.3 % of all imports to 10.6 %) and Thai imports by 1.3 % (from 1.3 % of all imports to 3%).⁴¹

In 2005, agriculture was 19.8% of Cameroon's total imports. Agri-food products were 10.7% of agriculture imports followed by milled or semi-milled rice at 5 %, frozen fish at 2.3 % and agricultural raw materials at 1.8%. These patterns continued in 2010 as agri-food products remained the top import, representing 10.2% of all agriculture imports. Frozen fish increased slightly to 3.2%, as did imports of milled/semi-milled rice to 3.8%. Cameroon's main raw agriculture material imports as of 2015 were rice, wheat/meslin, milk and cream.⁴²

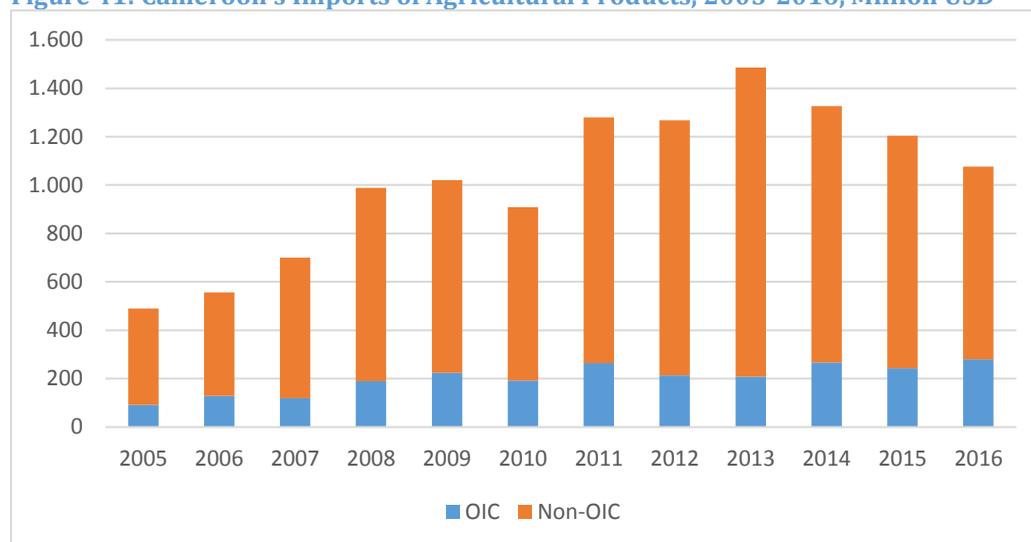
⁴⁰ World Trade Organization. (2018). Member Profiles-Cameroon. Available at: http://stat.wto.org/CountryProfiles/CM_e.htm

⁴¹ Ibid.

⁴² World Trade Organization. (2018). Member Information: Trade Profiles. Available at: http://stat.wto.org/CountryProfiles/CM_e.htm

Figure 41 shows the evolution of Cameroon’s imports of agricultural products over the last decade. As was the case for exports, most imports are sourced from outside the OIC. However, OIC imports have generally been growing over time, despite a decline in total imports since their 2013 peak.

Figure 41: Cameroon’s Imports of Agricultural Products, 2005-2016, Million USD

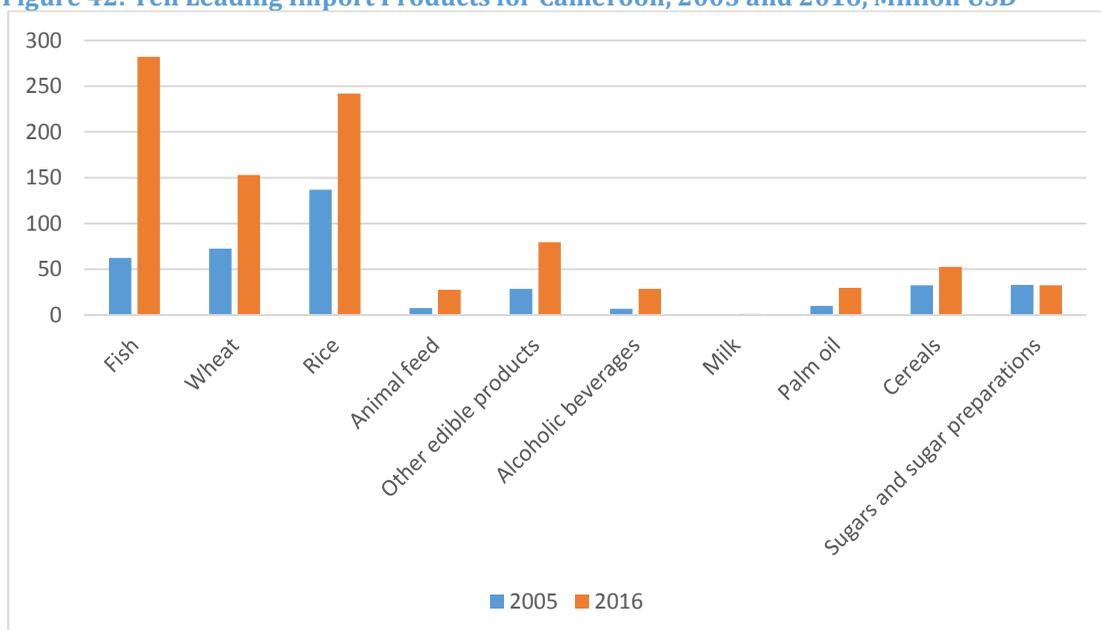


Source: UN Comtrade.

For OIC countries specifically, agri-food products dominate imports of agricultural products. However, this dominance has a decreasing trend. In 2005, agri-food products represented 85.77% against 67.74% in 2016. These agri-food imports in comparison to exports are nevertheless diversified. We observe a strong presence of cereals/cereal preparation products, animal/vegetable oil/ fat/wax and miscellaneous food products. Besides, the share of beverages and tobacco products in imports has been growing since 2012.

As for exports, it is possible to examine imports at the level of disaggregated products. Figure 42 presents results. The import bundle is again very concentrated, with the top ten products accounting for 86% of the total, which is less than was the case for exports, but is still very substantial. The three leading products—fish, wheat, and rice—made up 63% of the total in 2016. The figure shows that there is generally an upwards trend for imports, which is consistent with increasing food consumption associated with economic growth. However, the overall trend is dominated by the three leading products, as was the case for exports.

Figure 42: Ten Leading Import Products for Cameroon, 2005 and 2016, Million USD



Source: UN Comtrade.

Table 23 shows a breakdown of leading import sources by leading products for 2016. On a bilateral level, Cameroon’s geographical import diversification is greater than would be suggested just by looking at the product bundle. African countries play an important role for sectors like fish, animal feed, alcoholic beverages, and palm oil. EU members are present in a number of product categories. But for staple crops like rice and wheat, the main sources are globally competitive producers located in a range of regions, from Europe to the Americas to Asia. Cameroon’s network of product level imports is relatively diversified, and to a strong degree reflects a large influence of comparative advantage, although geography is still of course present.

Table 23: Leading Import Product - Source Combinations for Cameroon, 2016

Product	Leading Import Sources
Fish	Mauritania, Senegal, China, Argentina, Morocco, Spain, Netherlands, New Zealand, Belize, Russia.
Wheat	France, Canada, Germany, Russia, USA, UAE.
Rice	Thailand, India, USA, Myanmar, Pakistan, UAE, Vietnam, France, Turkey, Cambodia.
Animal feed	Argentina, Belgium, Bolivia, France, Nigeria, Senegal, Netherlands, USA, Germany, China.
Other edible products	France, China, Malaysia, Netherlands, Poland, Turkey, USA, Philippines, Indonesia, Belgium.
Alcoholic beverages	UK, France, Nigeria, Spain, Netherlands, Ireland, Italy, Portugal, USA, Indonesia.
Milk	Netherlands, New Zealand, France, Singapore, Belgium, Ireland, UK, Spain, Argentina, Malaysia.
Palm oil	Malaysia, Indonesia, USA, Gabon, UAE, China, Nigeria, Equatorial Guinea.
Cereals	France, China, Belgium, Portugal, Burkina Faso, Germany, Turkey, South Africa, UK, Gabon.
Sugars and sugar preparations	Brazil, France, Guatemala, Czech Republic, Turkey, Poland, UAE, China, Belgium, Morocco.

Source: UN Comtrade.

To formalize these insights, Table 24 presents in degree centrality calculations for Cameroon over the last decade. For almost all products, there has been a noticeable increase in the diversity of import sources over time. The table reinforces the view that import sources are more diverse than would be suggested by the level of product concentration in imports. The evidence suggests that Cameroon’s import geography is more diversified than its export geography in a general sense, although the two leading export products are heavily diversified. The table also supports the conclusion that Cameroon’s trade network on the import side stretches over multiple regions, according to the interplay of geography, policy, and comparative advantage.

Table 24: In Degree Centrality for Cameroon's Main Agricultural Imports, 2005-2016

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Fish	29	24	25	33	29	30	30	31	36	33	38	35
Wheat	28	26	39	38	35	41	39	46	43	41	45	38
Rice	9	5	5	6	10	10	6	7	10	4	9	6
Animal feed	16	22	16	24	22	23	23	30	25	23	24	21
Other edible products	14	18	17	25	29	22	24	22	28	29	29	26
Alcoholic beverages	46	47	53	54	51	45	53	61	62	63	66	61
Milk	28	26	32	42	37	34	31	33	42	34	40	34
Palm oil	8	11	8	13	16	12	11	11	9	8	6	9
Cereals	19	14	20	26	20	22	23	23	29	28	27	32
Sugars and sugar preparations	23	22	26	26	25	23	25	31	34	28	29	28

Source: UN Comtrade.

Agriculture Quality Framework

The agriculture quality framework is not cohesive or harmonized across various points in the sector, As of 2015, Cameroon had not entered into any Mutual Recognition Agreements with regard to agri-food accreditation and does not accept foreign tests or certificates.⁴³ Instead, local and imported foods have been required to follow mandatory labelling prescriptions. Information provided on perishables should include expiration date, conformity mark, producer and production date in both French and English⁴⁴

Local and Regional Quality Labelling Scheme

As of 2015, Cameroon had not entered into any Mutual Recognition Agreements with regard to agri-food accreditation and does not accept foreign tests or certificates.⁴⁵ Instead, local and imported foods have been required to follow mandatory labelling prescriptions. Information provided on perishables should include expiration date, conformity mark, producer and production date in both French and English⁴⁶ There are no government approved labelling schemes for genetically modified foods, or halal agri-food products but steps have been taken in the private and non-governmental organization sectors to encourage geographic labelling. For example: With the initial involvement of about 100 producers including a large international company, the Penja Pepper received a Protected Geographic Indication (GI) label from the

⁴³ IBP Inc. (2015). *Cameroon Investment, Trade Laws and Regulations Handbook: Volume 1 Strategic Information and Regulations*. USA: International Business Publications.

⁴⁴ Ibid

⁴⁵ Ibid.

⁴⁶ Ibid.

African Intellectual Property Organization, which prohibits the product name from being used outside the original region.⁴⁷ If these efforts are successful long term, labelling could allow for structuring of stakeholders and specialization of operators that make up the value chain.

Likewise, Certification Standards are aimed at reassuring consumer markets of product quality so adhering to them is helpful for market integration. However, Cameroon has not implemented a national framework for food safety legislation that is coherently linked to global agribusiness and its international obligations with regards to trade. Steps towards implementing a local regulatory framework for biosafety and the use of genetically modified organisms via a 2003 law,⁴⁸ but enforcement mechanisms and tracing instruments remain inadequate.

The minister in charge of livestock proposed collaboration could build from previous study by the World Bank and would focus on the integration of regional trade in meat and livestock-related products in the Lake Chad Basin. The development objective of such a project would be to support the improvement of the regulatory environment for livestock and meat trade along livestock trade corridors in Central and West Africa. The project would (a) provide a thorough assessment of trade flows and impediments along these corridors, (b) design policy and recommendations to address key constraints to trade in livestock and meat; (c) develop action plans to implement these policy recommendations. The project could collaborate with West Africa Agricultural Productivity Programme (WAAPP) network and work closely with, the *Commission du Bétail de la Viande et des Ressources Halieutiques* (CEBEVIRAH); the Economic Community of Central Africa States (ECCAS); and the West and Central African Council for Agricultural Research (CORAF/WECARD), the African Union and international institutions such as the FAO or World Organization for Animal Health (OIE). The adoption and/or harmonization of livestock trade policies among these countries needs strong political will on the part of governments for streamlined procedures. An OIC-member collaboration could provide the framework required to accelerate the adoption/harmonization of these policies. The project would need to, among others, undertake a socio-economic study on livestock trade (including livestock products) and identify legal and policy areas that need attention both from export and import perspective.

Cameroon's agri-food sector also lacks harmonized regulatory and administrative procedures. The infrastructure challenges in Cameroon's region are not just material but also encompass inefficiencies in non-material infrastructure. While material infrastructure comprises roads, energy, facilities and ICT (Information, Communication, and Technology) connectivity, non-material infrastructure covers the gamut of all competencies, procedures, and knowledge associated with the physical infrastructure. In Cameroon and between its regional members these challenges include administrative inefficiencies, lags in governance along with a lack of clarity and harmonization of processes in legal and political frameworks. This fragmentation is also evident in the fact that the Ministry of Agriculture and Rural Development and the Ministry of Trade have low levels of coordination between them. These ministries implement a variety of projects but have limited coordination between them.⁴⁹ These numerous factors coalesce and contribute to limiting the potential growth and perspectives of the agriculture and agri-food system. It is imperative that strategies that aim to foster greater and more sustainable agri-food and agricultural trade, prioritize efforts that remedy these complex challenges.

⁴⁷Chabrol, D. et al. (2015) "Establishing Geographical Indications without State Involvement? Learning from Case Studies in Central and West Africa", *World Development*, <http://dx.doi.org/10.1016/j.worlddev.2015.11.023>

⁴⁸ FAO. Law N° 2003/006 of 21 April 2003. Law to lay down safety regulations governing modern biotechnology in Cameroon

⁴⁹ Ibid.

The OIC can support inter-institutional coordination to forge inclusive, sustainable trade through a focus on the external factors that improve coordination such as:

- Research and information initiatives that collect competent evidence on the concerns and preferences of actors in the various agri-food sectors;
- Monitoring and evaluation of project implementation that is regular, standardized and linked to existing targets; and
- Project financing that is attached to requirements for harmonizing policy planning process/documents to financial operations within ministries.

Halal

During the interview, participants were queried about halal certification, but this was not yet an issue for mass production facilities in the livestock sector.

Recent Evolution of the Trade Policy Environment

A distinct feature of Cameroon's trade policy environment is its membership of regional groups that deal not only with trade policy but also agricultural policy.

Currently, the REC most relevant for Cameroon's agri-food trade is the Central African Economic and Monetary Community (CEMAC). However, the country also belongs to the Economic Community of Central African States (ECCAS) which has the lowest intra-regional trade of all of Africa's five sub regions, and thus limited relevance for agri-food trade⁵⁰ In 2014's Cameroon, despite opposition from its neighbors entered into the European Union Economic Partnership Agreement (EPA) which excludes most agri-food products.⁵¹ Furthermore Cameroon borders Nigeria which belongs to the Economic Community of West African States (ECOWAS) region. Cross-border trade among Cameroon OIC members can be entertained in a joint ECOWAS-ECCAS program.

CEMAC

CEMAC represents a market of 42.5 million people spread over 3 million square kilometers. Cameroon contains over half the region's population and contributes 28.6% to the regional GDP.⁵² Cameroon is the only net agricultural products exporter in this Regional Economic Community (REC) and is the most significant trading partner of each CEMAC member country.⁵³ It also supplies a wide range of agri-food products and maintains a positive trade balance in intra-CEMAC flows.⁵⁴

However, the challenge for trade networks in CEMAC is that countries share structural similarities such as undiversified production structures (few exports mostly in the form of natural resources).⁵⁵ In 2016, Cameroon's top exports to all CEMAC members were edible products of animal origin and the top destination for all agricultural exports was Gabon.

⁵⁰ <https://www.uneca.org/oria/pages/eccas-economic-community-central-african-states>

⁵¹ European Commission (2014). The EU and Cameroon Implement Economic Partnership Agreement. June 28. Brussels.

⁵² World Trade Organization (2013). Trade policy Report: Cameroon, Congo, Gabon, Central African Republic and Chad.

⁵³ Nkendah, R. (2014). The informal cross-border trade of agricultural commodities between Cameroon and its CEMAC Neighbours. Paper for the NSF/ARG/IGC Conference. Mombasa Kenya.

⁵⁴ Ibid pp. 7

⁵⁵ International Monetary Fund. (2015) Central African Economic and Monetary Community: Selected Issues. IMF Country Report 15/308

Another important trade flow is in palm oil which has changed over time. In 2005, palm oil was Cameroon's most exported product to the entire region with values of 6.260 in millions of USD traded, but by 2016, palm oil had become third most imported product from Gabon. Intra CEMAC trade flows of palm oil in Cameroon have been impacted by stagnant productivity in the sector, and absence of appropriate government responses. As of 2014, “no fertilizer manufacturing plant existed in the country, thus there is heavy reliance on imports with no subsidy in the cost of inputs and most producers record meagre yields in their plantations”.⁵⁶

On the other hand, the consistent success of exports in edible products of animal origin reflects in part how Cameroon's livestock sector is quickly transforming into a “more cattle-oriented, market-orientated system which is an important source of revenue for about 30% of the rural population.”⁵⁷ While organized around traditional smallholders, the Cameroonian livestock industry depends on a well-structured and longstanding market system to facilitate trade.

Overall, the trade between Cameroon and its CEMAC counterparts is in most cases underestimated. While Cameroon belongs to the CEMAC and is thus subject to a formal RTA that seeks to foster greater formal trade, the informal trade is a non-negligible element of trade networks accounting for 96% of official trade in agricultural and horticultural products in 2008.⁵⁸ These trade trends are attributable to a range of factors of which non-compliance with tariff and non-tariff barrier policies, is the most salient.

In addition to being the primary trading partner for each member state Cameroon is also one of the lead exporters within the informal trade networks.⁵⁹ Trade flows between member countries are often unaccounted within national accounts, distorting reported values of inter-regional trade.⁶⁰ In their research on informal cross-border trade within the CEMAC region, Nkendah, Nzouessin and Njoupouognigni find that in 2008, 37 billion CFAF (69 million USD) worth of agriculture and horticultural products were exported to the CEMAC region. Broken down by a select number of countries in the CEMAC, informal trade within Central Africa amounted to 4.5 billion CFAF (8.5 million USD) to Gabon informally, 17.9 billion CFAF (33 million USD) to Guinea, 2.9 billion CFAF (5.4 million US) to Congo and 1.6 billion CFAF (3 million USD) to the Central African Republic.⁶¹

Notwithstanding the barriers to cross-border trade that curtail the impact of RECs, the government has taken steps towards developing a more robust agricultural policy that can fulfil its priorities and mobilize its potential to become a regional hub. These efforts include the Agricultural Value Chain Development Project (AVC-DP). The project has a vision, outlined in the 2010-2020 Growth and Employment Strategy Paper (GESP) that focuses on three pillars: (i) growth, (ii) employment, (iii) governance and strategic management of the state.⁶² To implement this project the government has focused on developing value chains for plantain, pineapple and palm oil through 100 km of rural roads, 30 shops, 15 rural markets and laboratory

⁵⁶ Raymond N. Nkongho et al. (2014). “Strengths and weaknesses of the smallholder oil palm sector in Cameroon”, OCL, 21:2, D208

⁵⁷ Pamo E. T. (2008). Country Pasture/Forage Resource Profiles CAMEROON. Tech. Rep., Food and Agriculture Organization of the United Nations.

⁵⁸ Nkendah, R., C. B. Nzouessin, and M. Njoupouognigni. (2014). *Estimating the Informal Cross-Border Trade in Central Africa*. Nairobi: African Economic Research Consortium.

⁵⁹ Ibid.

⁶⁰ Ibid.

⁶¹ Ibid.

⁶² African Development Bank. (2015) *Agricultural Value Chain Development Program- Appraisal Report*. Tunis: ADB.

facilities concentrating on quality control.⁶³ Pineapple is recognized as one of the seven most promising regional value chains in Africa.⁶⁴ From the views of the stakeholders through this project the government has laid the foundation for agri-food industrialization that will be expanded to Cameroon's neighbors in Central Africa. For example: the production centers and border market infrastructure have been developed in cities not too far from international borders, the ECCAS infrastructural development programs has enabled paved road connection between Cameroon and Gabon, Congo, Central African Republic and Equatorial Guinea. Furthermore, the Kribi deep-sea port infrastructure was planned to take the regional dimension into consideration.

ECOWAS

Data shows Cameroon's trade with ECOWAS is notably lower than CEMAC. In 2016 the top exporting product to the region, tobacco, was 7.263 million USD compared to the 13.164 million USD of exports that went to CEMAC. Trade dynamics are affected by the absence of a preferential trade agreement between ECOWAS and CEMAC. This essentially means that countries in either economic bloc, can in principle apply full statutory duties on bilateral trade flows, generating significant distortions within the broader region.⁶⁵

Because of these tariff barriers, retailers and consumers are encouraged to import products from within their own economic bloc, rather than sourcing them from across the border. Bilateral trade flows between Cameroon and Nigeria are particularly affected by these forces, and they lead to the isolation of border regions in both countries as they orient their economic activity towards the industrial centers within each economic bloc.⁶⁶ In Cameroon, this inability to reap the benefits of cross-border trade with Nigeria is compounded by the fact that the Northern region has the highest rates of poverty in the country.

The key import from Senegal is fish which has experienced a marked increase since 2010 from 13.112 million USD to 54.584 million USD in 2016. This trend reveals an essential trade flow between the two countries despite membership in different RECs. From the views of the stakeholders there is room for collaboration between Cameroon and fellow OIC members. For example, the production centers and border market infrastructure have been developed in cities not too far from international borders. Road networks such as the Enugu-Bamenda road between Nigeria and Cameroon are one example; in fact, this road is a joint endeavor of the two countries in coordination with ECCAS and ECOWAS.

Other Policies

Cameroon has been active in negotiating Free Trade Agreements (FTAs) with other significant trade partners. Although many of these agreements are only partial scope, they likely play some role in shaping trade relations with more distant partners. For instance, key export markets for particular commodities, such as Malaysia (cocoa and cotton), Bangladesh (cotton), and Indonesia (agricultural raw materials) have FTAs in place, albeit with limited scope.

⁶³ Ibid pp. iv

⁶⁴ UNCTAD. (2017). "From Regional Economic Communities to a Continental Free Trade Area," UNCTAD/WEB/DITC/2017/1.

⁶⁵ World Bank. (2013). Cameroon: Estimating Trade Flows, Describing Trade Relationships, and Identifying Barriers to Cross-Border Trade between Cameroon and Nigeria. Report No: 78283 and ACS2876.

⁶⁶ Ibid, pp. 10.

Malaysia was also the top destination for cotton exports in 2013 before being replaced by Bangladesh from 2014 to 2016. Cotton trade flows from Cameroon to Southeast Asia are relatively small because Africa is a minor player in the Asian market.⁶⁷ Furthermore, African products are negatively impacted by issues of reputation and the perceived belief that African cotton is low quality. Moreover, a lack of adequate feedback mechanisms means African exporters cannot negotiate any premium on the declining international prices.⁶⁸ Their small size forces them to trade via foreign merchants preventing them from forming a direct link with the client. African exporters are thus subject to a lack of information and an inability to receive direct feedback from clients on their needs.⁶⁹ Consequently, there are opportunities to enhance trade flows for cotton in Asian OIC members by encouraging South-South cooperation. There is consequently a need for Cameroon, perhaps in collaboration with OIC neighbors, to develop an export market penetration strategy; this could also be combined with a regional business practice center to support Cameroonian (and other regional) agri-food producers to evolve into mass producers of agri-food products capable of reliably supplying lucrative non-African OIC markets.

In terms of Cameroon's MFN trade policies, there has, however, been little movement. MFN tariff rates have barely changed over the last decade for agri-food products, fish products, and agricultural raw materials. In 2016, they were 24%, 25%, and 18% respectively. These rates are relatively high by world standards. The relative restrictiveness of trade policy for agricultural raw materials is unusual, as these products are inputs into the manufacture of processed goods, and most countries therefore keep barriers low to encourage light manufacturing. Although the impact of Cameroon's policies is significantly lessened by its FTAs, the fact that they are only partial scope means that more could be done to liberalize agricultural trade not only with neighbors and longstanding partners, but also with newer export destinations.

Main Barriers and Potential Drivers: Stakeholders' View

This section summarizes the findings from stakeholder consultations conducted through semi-structured interviews. While the Cameroonian government has in the last decade sought to engender economic transformation through the agriculture and agri-food trade sector, growth is still possible. The following section outlines areas that emerged from a consultation with key policy actors on the ground. These interviews yielded offered lessons that persons consulted proposed as areas of possible collaborations among OIC members. Fundamentally, these policy prescriptions seek to address the inefficiencies that emerge from tariff and non-tariff barriers as well as mobilize efforts towards greater industrialization, capacity development and financing.

Government Policies Affecting Agricultural Trade

Trade with the OIC is part of a broader trade development strategy which is centered around Cameroon achieving Emerging Market Status by 2035. This roadmap recognizes Cameroon's need to increase agricultural productivity through sustainable intensification and improvements in infrastructure. Strategic directions include: support for the acquisition of farming inputs, essential planning of irrigable areas, and supporting producers with structuring and professionalization.

⁶⁷ ITC. (2013). *Improving Africa's Cotton Value Chain for Asian Markets*. Geneva: ITC.

⁶⁸ Ibid.

⁶⁹ Ibid., pp ix

The drive towards sustainable intensification of agriculture is rooted in an older strategic plan. In 2003, the African Union designed the Comprehensive Africa Agriculture Development Program (CAADP) which is the current blueprint for agricultural development in Africa. The CAADP rests on four pillars: increasing land under cultivation, as about 60% of cultivable land in Africa is not being farmed; linking farmers to markets through innovation in the value chain; increasing the yields of staple foods; and investing more in research and technology to the order of 10% of national public expenditures.⁷⁰ The CAADP programmed implementation in the ECCAS region experienced difficulties that have been impediments to Cameroon benefiting from this program. Stakeholders point to weak human and institutional capacity in the region and as such collaboration among OIC members will have spillover effects on programs such as the CAADP.

Overall, Cameroon's agri-food market has been characterized by a turn towards market-oriented policies. These changes have reshaped direct intervention and state involvement in the sector through trade liberalization schemes. However, despite biophysical advantages, local producers still face many challenges. The Program of Accompanying Research on Agricultural Innovation, (PARI) part of an initiative by the German government, notes that a myriad of issues impacts agri-food imports and exports. They include:

- Lack of or insufficient improved seeds;
- Inadequate methods of conserving and marketing fresh vegetables;
- Low productivity in small-holder systems;
- Weak organization and high post-harvest losses;
- High rates of import dependence for rice in particular;
- Limited access to credit or rural finance;
- Poor value chains for most commodities; and
- Small farm to market roads especially in high crop areas.

Other OIC members in Africa face similar challenges because agricultural development on the continent still depends on encouraging favorable investment climates and providing rural public goods. This is crucial because most smallholders have difficulties accessing inputs, financial services and insurance.⁷¹ For intra OIC trade networks to have capacities in terms of economic growth, they must account for evidence that suggests food and agricultural markets are still fragmented and this decreases profits of private investments in various aspects of the commodity chain.⁷²

Cameroon has recognized the impact of these challenges and the limits of its previous agri-food strategies especially concerning agricultural innovation. Aside from basic industrial exploitations, agriculture in Cameroon is essentially traditional and relies upon traditional tools and conventional production techniques). In these conditions, work is more difficult, and yields

⁷⁰ Cheru, F., and R. Modi .(2013) *Agricultural Development and Food Security in Africa: The Impact of Chinese, Indian & Brazilian Investments*. London: Zed., 18-20..

⁷¹ Wiggins, S. (2014). "African Agricultural Development: Lessons and Challenges". *J Agric Econ*, 65: 529-556. doi:10.1111/1477-9552.12075.

⁷² Nega, F.. (2015) "Effects of regional trade agreements on strategic agricultural trade in Africa and the implications to food security". The Horn Economic and Social Policy Institute.

are reduced.⁷³ A study supported by Germany's Federal Ministry of Economic Cooperation and Development found that existing innovations in the sector were mainly in the following areas:

- New varieties of crops and livestock (NCV);
- Soil fertility improvement/management/enhancement (SFM);
- Processing and packaging especially for food and cash crops (PP);
- Agroforestry techniques (AT);
- Pests and diseases management (PDM);
- Capacity building of farmers/producers (CBF);
- Non-conventional livestock rearing (NCLR);
- Market improvement (MI); and
- Agricultural shows, open and field days (AS).⁷⁴

These findings align with specific developments in cocoa, cork/wood and cotton, three of Cameroon's dominant agri-food commodities.

Cocoa

Cocoa has been a leading export crop of Cameroon representing 11.56% of total exports in 2016. Main weaknesses of this sector include "high volatility of farm gate price, stakeholder uncertainty due to potentially changing policy and several ministries and public agencies involved in sector policy/implementation without functional coordinating mechanisms."⁷⁵ Moreover, poor post-harvest practices result in low-quality cocoa that is subsequently discounted.⁷⁶ Insufficient agricultural extension services, insufficient inputs from public agencies and ministries, a market dominated by a small number of buyers, few donor projects and sustainability involvement in comparison with other countries, a low organization of farmers and no financial services all create ample opportunities for policy and program development.⁷⁷

The institutional framework for cocoa production in Cameroon includes the National Coffee and Cocoa Board (NCCB) which "coordinates and facilitates the sector; including control of cocoa bean quality for export, promoting Cameroon origin cocoa, collecting statistics for commercialization and representing the industry internationally".⁷⁸ Farmers, buyers, transporters, and exporters are represented by the Inter-professional Council of Cocoa and Coffee which implements programs to "develop a new generation of farmers, adapt to climate change, improve access to finance, develop good agricultural practices etc."⁷⁹ Other bodies include the Ministry of Agriculture and Rural Development (MINADER), the Ministry of Trade which is responsible for commercialization, and the Ministry of Finance which provides funding for projects in other ministries.⁸⁰ These ministries implement a variety of projects but have

⁷³ Okolle J.N., P.M. Oumarou, A.D. Almeck, F. Ntam et al. (2015) *Status of Agricultural Innovations, Innovation Platforms, and Innovations Investment*. PARI project country report: Republic of Cameroon. Forum for Agricultural Research in Africa (FARA), Accra Ghana.

⁷⁴ Ibid, pp. 6

⁷⁵ Suedwind Institute. (2016). "Strengthening the competitiveness of cocoa production and improving the income of cocoa producers in West and Central Africa."

⁷⁶ Ibid pp. 31

⁷⁷ Ibid.

⁷⁸ Ibid. p.30

⁷⁹ Ibid.

⁸⁰ Ibid.

limited coordination between them, and even “coordination between individual projects is low.”⁸¹

Cork and Wood

Timber exports in Cameroon dominate in their raw form. There is a need within the sector for value addition through industries that can transform wood. Literature reveals that the wood industry is still in a primitive state because log exports remain the most attractive activity for producers.⁸² Consequently, the quality of downstream production remains low. A move towards manufacturing in the sector will improve the quality of wood and furniture exports and create opportunities for local technicians in wood processing value chains to receive training.⁸³ These areas of concern align with the 2017 OIC economic outlook which noted that “despite steady increase and existing potentials in terms of human capital, energy resources, and market potential, the current level of contribution to global Manufacturing Value Added (MVA) from the OIC is far from being satisfactory.”⁸⁴ Consequently, the timber manufacturing sector can alleviate the trade deficit in manufacturing products and take concrete steps towards improving the currently “inadequate manufacturing production capacity in OIC countries.”⁸⁵

Cotton

SODECOTON is Cameroon’s national cotton company and is a vertically integrated conglomerate.⁸⁶ It operates in partnership with the National Cotton Growers Federation.⁸⁷ While the cotton sector represents nearly a quarter of the country’s agricultural exports, the industry accounts for only 6% of total export earnings because of the declining share of agriculture in total export.⁸⁸ However, cotton is still crucial to rural livelihoods and is the most important cash crop for the North and Extreme North provinces which have the highest concentration of poverty.⁸⁹ Moreover, the cotton belt in these areas are not linked to significant transport routes. Consequently, produce must travel by truck from the gins via roads and then railroads that are not well maintained leading to extra delays and costs.⁹⁰

Regarding agri-food trade, Cameroon’s cotton sector could increase competitiveness through investments in transportation infrastructure and decrease post-harvest costs through proper quality grading. Quality Grading is particularly important because eliminating contamination can increase lint prices up to 15%.⁹¹ The results of quality grading are improved fiber characteristics which impact “textile processing performance and value.”⁹² Cotton is a good candidate for collaboration among OIC members; this could include Lake Chad Basin OIC members (Chad, Niger, Nigeria, Central African Republic) and extending to Benin, Burkina Faso,

⁸¹ Ibid.

⁸² Cerutti P.O., Poufon Ngouhouo J. (2016). “The Technical and Political Challenges of the Industrial Forest Sector in Cameroon”. *International Forestry Review*, 18(s1): 26-39..

⁸³ Sama, M. & N. Ajong Aquilas. (2016). “Determinants of Timber Exports in Cameroon”. *International Journal of Development and Economic Sustainability*, 4: 21-33.

⁸⁴ OIC Economic Outlook (2017) *Industrial Development for Economic for Structural Transformation*. SESRIC

⁸⁵ *ibid* pp.8

⁸⁶ World Bank. (2009). “The Cotton Sector of Cameroon.” Africa Region Working Paper Series No 126.

⁸⁷ The Republic of Cameroon. Ministry of Agriculture and Rural Development. (2012-2013). *Overview of the Status of Cameroonian Cotton*..

⁸⁸ World Bank. (2009). “The Cotton Sector of Cameroon”. Africa Region Working Paper Series No 126.

⁸⁹ *Ibid*. pp. v

⁹⁰ World Bank. (2009). “The Cotton Sector of Cameroon”. Africa Region Working Paper Series 126.

⁹¹ World Bank. (2008). “Quality and Marketing of Cotton Lint in Africa.” Africa Region Working Paper Series 121

⁹² ITC (2013). *Enhancing Africa’s Cotton Value Chain for Asian Markets*. Geneva: ITC.

Cote d'Ivoire, and Mali which share similar ecological and market structure characteristics. Most solutions to the challenges they face encompass multi-country simultaneous actions.

In 2012, with the market innovation, the government introduced The Economic Program of Spatial Planning for the Promotion of Medium and Large Enterprises in the Rural Sector in Cameroon (Agropole).⁹³ The Agropole Program aims to support and align the interventions of sectoral ministries and public and private institutions concerned with the promotion of agro-forestry and pastoral enterprises of medium and small size. Key objectives of the Agropole program include the identification and management of production basins through the development of accompanying socio-economic infrastructure in these sites; and technical/financial monitoring of services and projects. Thus, the implementation framework prioritizes human and institutional capacity building⁹⁴

In this vein, the Cameroonian government also introduced the Livestock Development Project (PRODEL). Funded by the World Bank, the project targets three strategic priority livestock segments of production that are important for security/national supply and for their comparative advantage on the regional markets. They are: pastoral systems, mixed crop-livestock systems and commercial systems. Targeted species are cattle, small ruminants (sheep and goats), pigs, and poultry.⁹⁵ Key project areas include: (i) Improvement of livestock services access and delivery; (ii) Improvement of pastoral productivity, access to markets, and resilience of pastoral communities; (iii) Support to livestock value chains development and (iv) Project coordination, management, communication.⁹⁶ A focus on enhanced livestock value chains matches data from this case study which reveals that edible agri-food products of animal origin are the top exports for OIC countries who also belong to CEMAC. Moreover, the success of this projects has essential benefits for rural households in Cameroon's most impoverished areas and is therefore crucial for poverty reduction priorities.

The Cameroon government has not only focused on enhancing comparative advantage but has also targeted value chain development in some of its vital sites of import dependence through the Agricultural Competitiveness Improvement Project (PACA). PACA is a World Bank-financed project with a seven-year time frame. Launched in 2010, it sought to develop rural infrastructure facilities, and invest in value chains such as maize and rice cultivation. Rice, in particular, was a target of these measures because it remains a crucial site of import dependence. Cameroon received 429,864 tons from its trading partners in 2008.⁹⁷ There is evidence of PACA's success by some metrics. At its close in December 2016, the Implementation Completion Report (ICR) found that average marketed quantities of rice, maize, banana, plantain, poultry/pork all saw increments between 2009 and 2014.⁹⁸ The project was able to ensure even farmers had access to improved irrigation/technologies, training and capacity building in the technical aspects of farming practices.⁹⁹ However, it was noted that the initiative's design focused more on the production side of targeted value chains, and should have put more effort on strengthening

⁹³ Canada- Cameroon Chamber of Commerce. (2012). "Programmes De Agripoles". <http://www.cdc-cc.org/programme-agripoles>

⁹⁴ Ibid.

⁹⁵ The World Bank. (2016). International Development Association Project Appraisal Document on Proposed Credit to Republic of Cameroon for Livestock Development Project.. Report No.PAD 1664

⁹⁶ Ibid., pp. 10.

⁹⁷ G. Nkwain. (2013) "Rice: Solving Demand/Supply Inequality." *Business in Cameroon* 10: 6.

⁹⁸ Ibid.

⁹⁹ The World Bank. 2016. *Independent Evaluation Group- CM Agricultural Competitiveness Project*. Washington, D.C.: World Bank. Pp. 7

processors.¹⁰⁰ The government officials consulted think these, among others, will yield better outcomes if expanded in a wider set of countries and could qualify for intra-OIC collaboration efforts.

The Continental Free Trade Area (CFTA) and the OIC-TPS are the only regional agreements that includes the whole African region and all OIC countries. The CFTA negotiations concluded in March 2018 and is not yet operational; some protocols and schedules of liberalization are still to be negotiated.¹⁰¹ Building from lessons arising from the lack of a continental framework for trade among African countries this was proposed as a possible framework for structuring collaboration of Cameroon and its OIC neighbors. Such collaboration could take place in the framework of the OIC Business Preference System, namely the Framework Agreement on the TPS among the Member States (TPS-OIC). This system has been difficult to put into practice in Cameroon and other African countries. Various commitments made by member countries under different regional or international trade agreements complicate efforts to cooperate in COMCEC under the TPS-OIC.¹⁰²

Implementing these OIC trade regimes requires a sustained focus on consolidating various bilateral trade accords between member countries. Investments in institutional and human capacity are needed to help less developed member countries hire and retain the right experts, develop appropriate trade strategies, negotiate trade agreements, and implement their outcomes. Also, training of policymakers and other key actors could be enhanced by intra OIC knowledge sharing initiatives that promote South-South learning. Such efforts could consist of mentoring programs that connect experienced practitioners and junior experts. This could entail establishing a collaborative partnership with local research institutions that have established effective relationships with national governments and/or regional economic communities. Stakeholders suggested collaboration could also be entertained in the framework of a collaborative training program being developed between the ECCAS Secretariat and the Economic Policy Management Program at the University of Yaoundé. This program destined for all ECCAS members and beyond would offer tailor-made courses on trade and regional integration and development issues for experts of the public and private sectors.

Another lesson is failure to design and implement trade policy because of weak human and institutional capacity. It was proposed that one lesson to draw would be to give coordinated attention to this among OIC members. Collaboration could therefore aim at capacity building in addressing market entry restrictions that Cameroonian and other African OIC producers face in non-African OIC markets. This could entail helping overcome the real and perceived problems associated with agri-food products from Cameroon. The problems relate to the modes of production and marketing channels. Collaboration could be on two fronts. First, to ensure compliance to product and market-specific quality and standards from Cameroon. Second would be a focus on actions on destination markets with attention to collecting and disseminating market intelligence in order to enhance the image of Cameroonian products, assistance in understanding and complying with production and business practices in destination markets.

¹⁰⁰ Ibid., pp.5

¹⁰¹ African Union . (2018). Continental Free Trade Area. Available at <https://au.int/en/ti/cfta/about>

¹⁰² COMCEC. (2012). *Making Cooperation Work COMCEC Strategy For Building An Interdependent Islamic World*. Ankara: COMCEC.

Poor infrastructure and inadequate facility assessment

Efforts to facilitate cross-border trade are essential because of inadequate interconnected national transport networks. Despite the necessity of road transit, only an estimated 20% of the regional road network amongst Central African members of ECCAS countries are asphalted.¹⁰³ The region faces equally complex challenges in its ports. The ports are short on capacity and unable to handle the traffic volume adequately contributing to inefficiencies, elevated waiting periods for goods and high transport costs.¹⁰⁴ The infrastructure challenges also occur in railway transport systems. Much of the rail systems are either underused or unconnected from other member countries.¹⁰⁵

Poor infrastructure characterized by poor quality and gaps in roads, energy and ICT (Information, Communication and Technology) connectivity create irregularities that impede predictability in transport systems and translates to traders as hidden costs. These shortcomings in infrastructure networks increase the cost of doing business and negatively impact the competitiveness of goods. Consequently, in Africa, deficient infrastructure reduces output by 2% every year.¹⁰⁶

The OIC can invest in capacity building measures that help member countries articulate multi-country comprehensive, integrated multimodal regional transport as well as logistics investment and reform programs that work together to address challenges. The policy can be structured around consensus building, for boosting South-South trade, reducing logistics and transport costs as well as improving overall governance. This collaboration could in the short-term be implemented through joint efforts on trade facilitation e.g. the framework of regional programs funded by the African Development Bank and implemented by ECCAS towards the implementation of the WTO trade facilitation agreement. The program currently focuses on customs-centric efforts towards compliance with the various articles of the agreement. There is a need for completing this with actions aimed at enhancing the business environment through policy reforms for addressing the systemic drivers of high transactions cost, including capacity building and coalition for minimizing rent-seeking behaviors /fighting corruption.

Capacity Constraints and Support for Industrialization

Fostering industrialization within Cameroon's agricultural sector is a critical strategy for improving the economic opportunities available in the region; this applies to all of Cameroon's OIC neighbors. The African Union had developed the Agenda 2063 that outlines a vision of economic growth through industrialization of African countries. The agenda identifies modernized agriculture and "increased production, productivity and value addition that contributes to farmer and national prosperity and Africa's collective food security", as key pillars for fostering structural transformation.¹⁰⁷ Overall policy efforts such as Agenda 2063 offer Cameroon and African countries more broadly the opportunity to transform their economies by

¹⁰³ Ibid.

¹⁰⁴ Nathan Associates Inc.. (2013). *Logistics Cost Study of Transport Corridors in Central and West Africa*. Arlington: Nathan Associates INC.

¹⁰⁵ Ibid.

¹⁰⁶ Ibid.

¹⁰⁷ (2015). *Agenda 2063- The Africa We Want. Final Edition*. Available at <http://www.un.org/en/africa/osaa/pdf/au/agenda2063.pdf>

tapping into an under-exploited agricultural sector. Addressing these constraints is of particular importance especially given that the African region accounts for 60% of the world's arable land.

Cameroon's initial steps towards accomplishing these ambitions are operationalized through its Three-Year Emergency Plan Project (PLANUT), implemented between 2015 and 2017. The government has allocated the project a total of 925 billion CFAF to be spent in seven areas, with livestock and agriculture being one of the primary sectors. The agri-food sector is expected to benefit from monies spent on:

- (i) Creating agropoles and installing hydroponic farming facilities covering approximately 120,000 hectares in the North;
- (ii) Building wholesale market centers to facilitate the flow of agricultural products to urban centers; and
- (iii) Constructing slaughterhouses and refrigerated warehouses for meat distribution.

These investments by the Cameroonian government aim to support regional value chains in edible products of animal origin which are already some key trade flows between Cameroon and some OIC members in CEMAC.

Cameroon's collaboration with neighboring OIC members could also entail nurturing trade practice networks to support agri-food policy reform. Such support could focus on fostering policy implementation and actions to unlock new investment opportunities. This would entail facilitating dialogue and networking among multiple stakeholders and across disciplinary fields on the conceptualization and implementation of agri-food policies.

The support could be provided through coordinated policy reform platforms. Such platforms would serve as coordinating mechanisms for programs and policies at the national, corridor, and regional levels. The platforms would aim to promote evidence-informed decisions by collecting, aggregating and disseminating agri-food information. Such a platform would also support stakeholder empowerment and consensus building. The platform would therefore provide a framework for stakeholders to debate, cross-fertilize ideas and to better understand the consequences of their mode of operation and that of other stakeholders involved in trade. Ultimately, the platform would enable increased capacity through peer-to-peer learning among government officials, businesses and civil society.

Conclusions and Lessons Learned

This study reveals Cameroon's connectivity with other OIC countries occurs in tandem with its role in Regional Economic Communities (RECs). Chief among these is CEMAC which receives consistent exports of edible products of animal origin. Barriers impacting trade within CEMAC include structural similarities such as undiversified production structures; few exports mostly in the form of natural resources. However, trade between Cameroon and its CEMAC counterparts is in most cases because of the impacts of informal trade. As expected, Cameroon's trade with ECOWAS is much lower than CEMAC. Trade dynamics are affected by the absence of a preferential trade agreement between the two RECs. Because of these tariff barriers, retailers and consumers are encouraged to import products from within each economic block, rather than sourcing them from across the border. Bilateral trade flows between Cameroon and Nigeria are hindered and this leads to the isolation of border regions in both countries as they orient their economic activity towards the industrial centres within each economic block. In

Cameroon, this inability to reap the benefits of cross-border trade with Nigeria is compounded by the fact that the Northern region has the highest rates of poverty in the country.

In terms of Non-African OIC trade, Malaysia was the top destination for Cameroon's cocoa in 2016 and had occupied that position for the previous decade. Cocoa trade flows between the two countries have persisted despite price fluctuations and the challenges faced by Cameroon's cocoa exports to the EU because of more restrictive phytosanitary standards that went into effect in 2013.

Trade with the OIC is part of a broader trade development strategy which is centred around the country's main medium-term development objective consisting of Cameroon achieving Emerging Market Status by 2035. This roadmap recognises Cameroon's need to increase agricultural productivity through sustainable intensification and improvements in infrastructure. Cameroon has recognised the impact of these challenges and the limits of its previous agri-food strategies especially concerning agricultural innovation. Aside from basic industrial exploitations, agriculture in Cameroon is essentially traditional and relies upon traditional tools. Attempts at improvement are noted in value chains for cocoa, cork/wood and cotton.

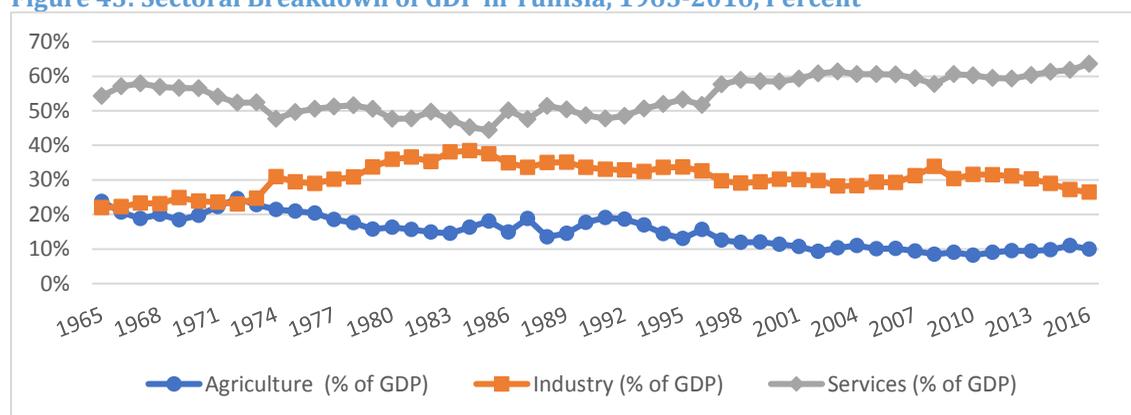
From consultations with authorities and taking into account the analysis of issues informed by trade data analysis the following collaboration areas and action points emerged:

- Joint program with OIC members in Central and West Africa in fostering the implementing of trade reforms particularly through institutional and human capacity building actions to consolidate various bilateral trade accords between member countries and support structural transformation for sustainable development.
- Joint Central and West African OIC-members actions in identifying and dismantling Non-Tariff related restrictions affecting sustainable agri-food in three areas: facilitating cross-border trade and support for industrialisation.
- Actions towards dismantling non-tariff barriers, reducing transactions cost and capacity building in implementing pro-poor trade reforms.
- Cross-border trade facilitation among Lake Chad Basin OIC members could be one possible framework for promoting trade networks.
- Trade policy restrictions, inefficient border crossing regimes, lack of transparency, lack of predictability when crossing and cumbersome documentation process are key factors that drive informal trade, which is an important factor in Cameroon's agricultural trade, notwithstanding obvious difficulties in quantifying it accurately.

4.3. Tunisia

Agriculture is historically very important in Tunisia. Despite its decline in terms of relative GDP, the agricultural sector plays crucial economic and social roles. Indeed, agriculture represents 10% of overall GDP (Figure 43) and about one employee in six works in this sector. However, its driving effects are really important. For example, the agri-food sector arrives first in terms of investments in all industrial sub-sectors, with a share of more than 25% in 2015. Agriculture is also a major supplier of the tourism sector, which is very important for the overall economy. In addition, the development of agri-food production is necessary to ensure food security and promote households' income in rural areas (that represent 35% of the overall population), in which poverty is concentrated.

Figure 43: Sectoral Breakdown of GDP in Tunisia, 1965-2016, Percent



Source: World Development Indicators, the World Bank, April 2018.

In the development strategy 2016-2020, Tunisian authorities have planned to modernize the agricultural sector, support research and development and develop human resources in order to promote the economic importance of the sector and ensure food security.

In addition to the sustainable management of natural resources, the development of water infrastructure, the incentives to private operators included in the new investment law, new trade liberalization agreements are expected to be signed. The negotiations for the Deep and Comprehensive Free Trade Area with the European Union started in 2016. This agreement will liberalize trade in agri-food products with the European Union, which is the main partner of Tunisia (more than two thirds of trade flows). The conclusion of this agreement will be associated with major reforms linked to this sector (technical, sanitary, phytosanitary and health standards; subsidies and government support, competition framework, public procurement, etc.)

Agricultural Trade Performance

Table 25 reports the statistics about trade performance of Tunisia, with a focus on agricultural products. It appears that the share of exports of agricultural products does not exceed on average 10% (except for 2015, with an exceptional performance of 14.5%). In addition, the share of imports of agricultural products varies between 10% and 12%. Throughout the period 2005-2016, the trade balance of the Tunisian economy and that of the agricultural sector are in deficit. It was slightly positive only in 2006.

The growth rates of exports and imports of the agricultural products are also interesting to comment: they are quite variable (due to natural conditions) and oscillate between positive values (with a maximum of 51% for exports in 2015) and negative values (with a peak of -33% for imports in 2009).

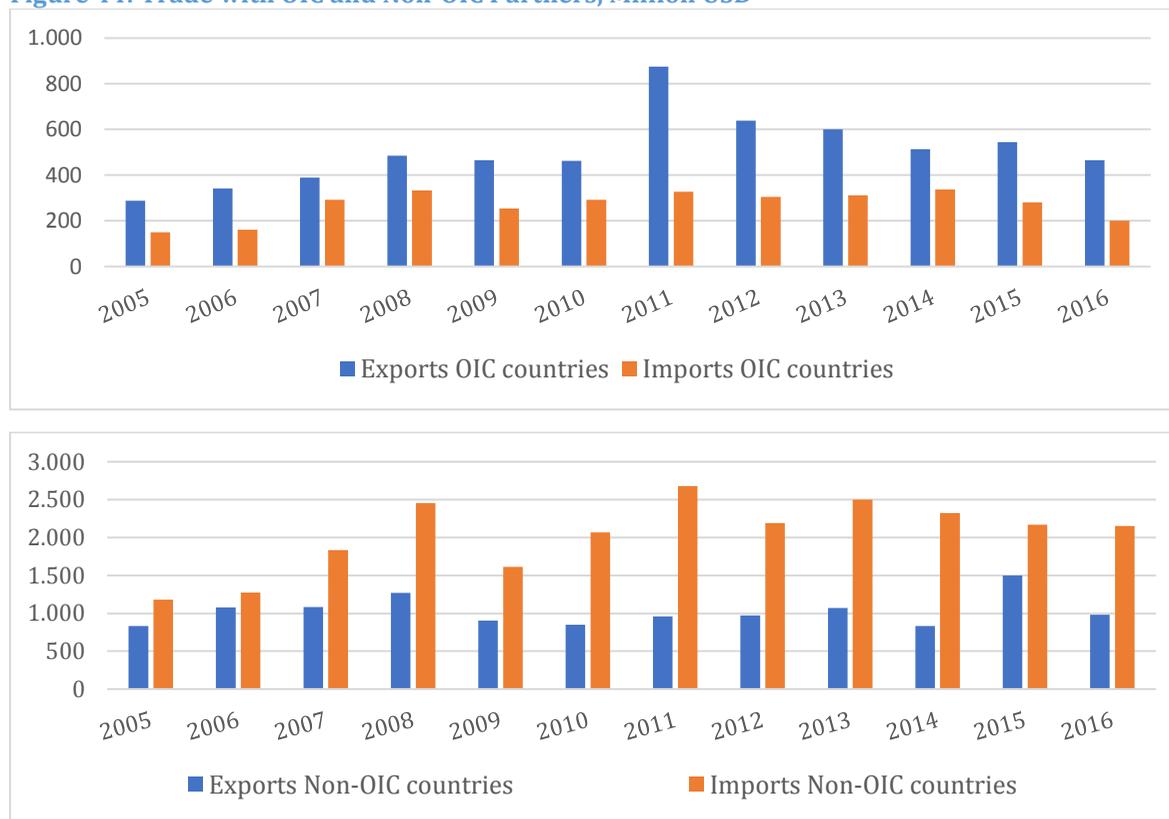
Table 25: Trend and Performance of Agricultural Trade vis-a-vis Total Trade, 2005-2016, Billion USD

Year	<i>Export performance</i>				<i>Import Performance</i>			
	All products	Agricultural products			All products	Agricultural products		
	Total export value	Export value	Share in total export	Growth, %	Total import value	Import value	Share in total import	Growth, %
2005	10	1	11	---	13	1	10	---
2006	12	1	12	27	15	1	10	8
2007	15	1	10	4	19	2	11	48
2008	19	2	9	19	25	3	11	31
2009	14	1	10	-22	19	2	10	-33
2010	16	1	8	-5	22	2	11	27
2011	18	2	10	40	24	3	13	27
2012	17	2	10	-12	25	3	10	-17
2013	17	2	10	4	24	3	12	13
2014	17	1	8	-20	25	3	11	-5
2015	14	2	15	52	20	3	12	-8
2016	14	1	11	-29	20	2	12	-4

Source: UN Comtrade.

Figure 44 reports statistics on the share of OIC member countries in trade flows of Tunisia in agri-food products. It is clear that trade with non-OIC countries is significantly higher than trade with countries from the region. It seems that Tunisia has more facility to exchange agricultural products with non-OIC countries. It is interesting to note, also, that trade balance with OIC member countries is positive for all the period while a structural deficit can be noticed for flows with non-OIC countries

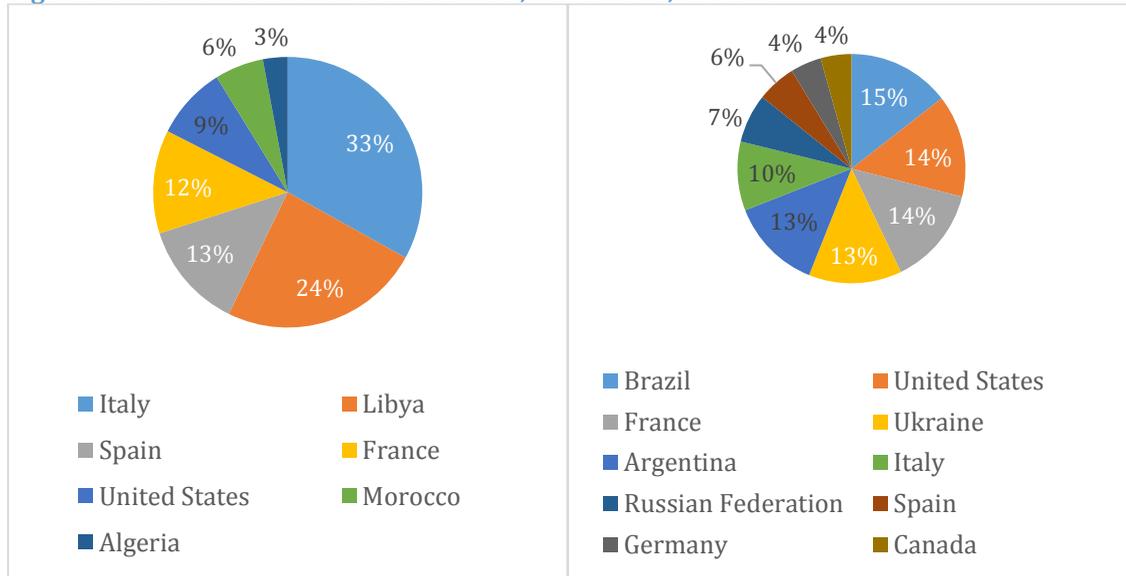
Figure 44: Trade with OIC and Non-OIC Partners, Million USD



Source: UN Comtrade.

Going into further details for the geographical relations, it is clear that geographical distance seems to be a significant determinant for exports. After Italy, the Libyan market is the second largest destination for Tunisian exports, with on average 17.6% of the value of exports. Morocco and Algeria are also important, for exports (ranked respectively 6th and 7th and accounting for 6.5% of total exports together). As for the origin of Tunisian imports, geographical and cultural proximity do not account. Remote countries (Brazil, United States and Argentina) are among the top providers while none of the OIC countries is ranked among the top ten.

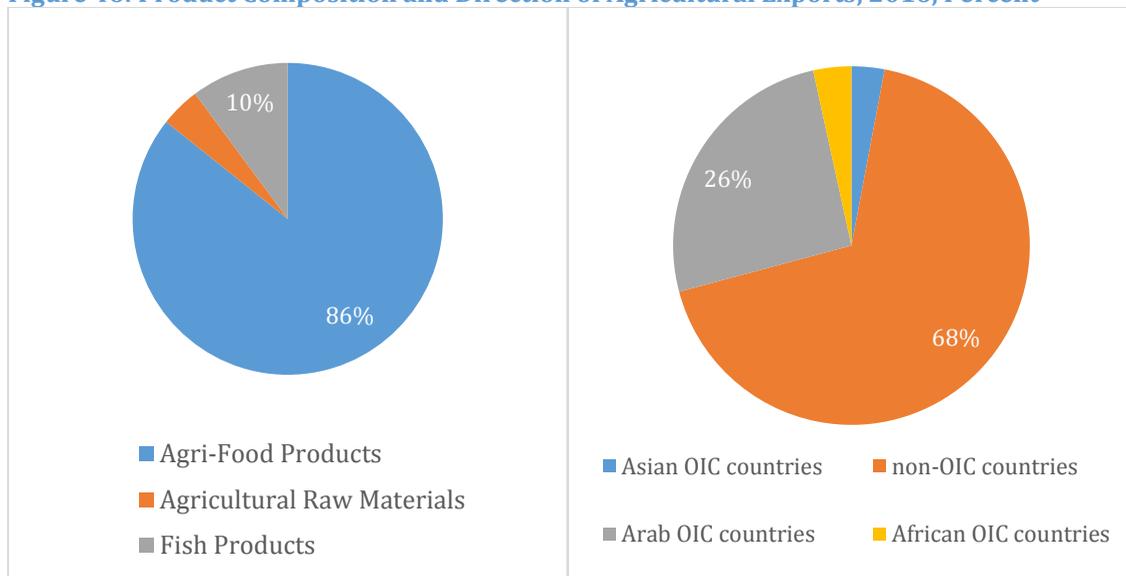
Figure 45: Main Trade Partners of Tunisia, 2005-2016, Percent



Source: UN Comtrade.

As for the product composition and the destination of trade flows, in 2016, Tunisia's exports were mainly destined (67.9%) to non-OIC countries. The share of the OIC countries in exports is only 32.1%, of which the Arab countries account for 25.7%. Also, agri-food products are dominating the sector since they accounted for 85.7% of Tunisian exports of agricultural products.

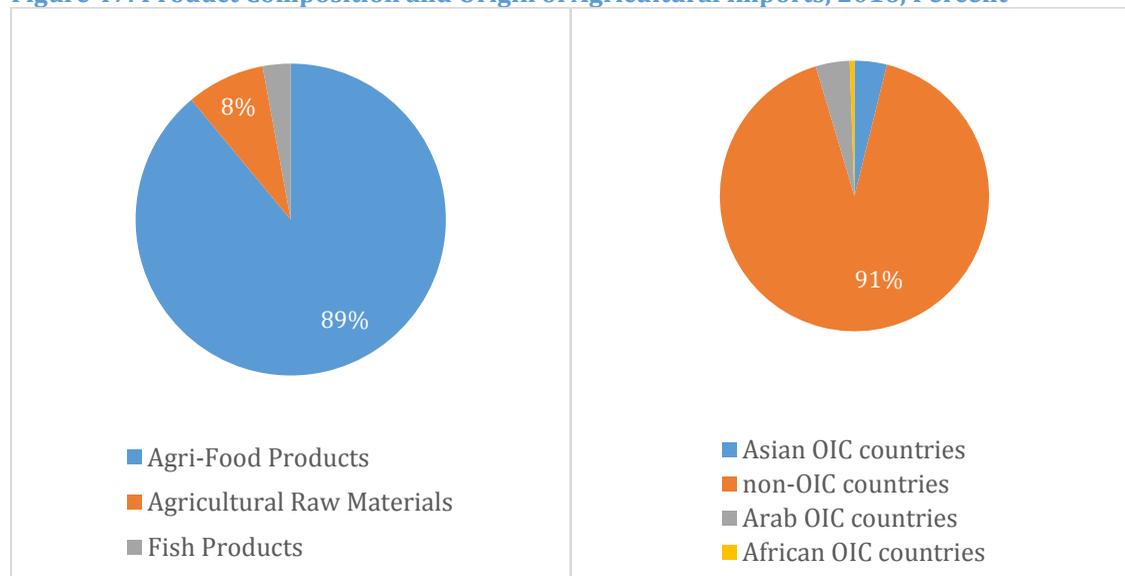
Figure 46: Product Composition and Direction of Agricultural Exports, 2016, Percent



Source: UN Comtrade.

For imports, non-OIC countries accounted for 91.5%. Agri-food products accounted for 88.9% of Tunisian imports of agricultural products.

Figure 47: Product Composition and Origin of Agricultural Imports, 2016, Percent



Source: UN Comtrade.

Composition and patterns of agricultural exports

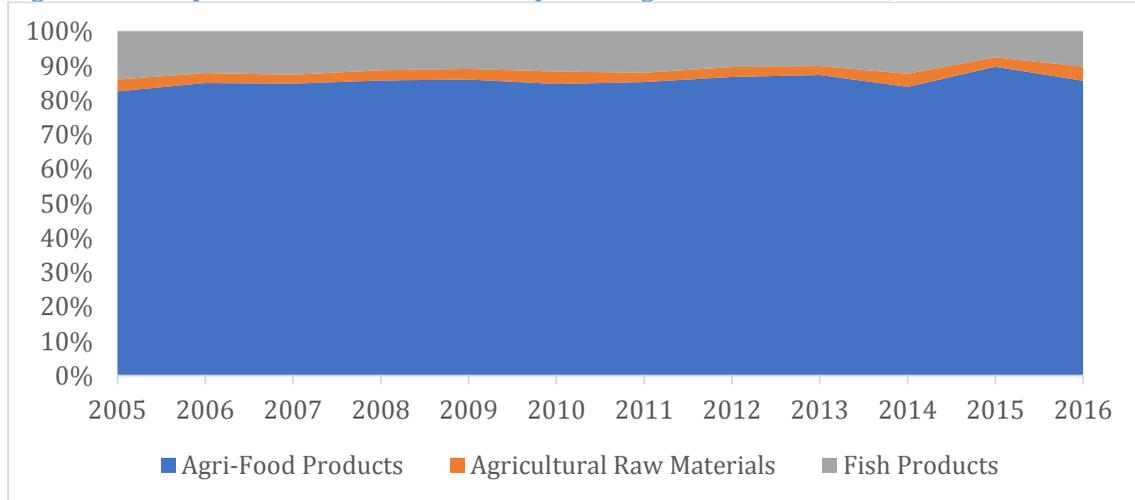
Before turning to imports, the analysis first looks at the composition and patterns of exports – for agricultural products only. Table 26 and Figure 48 show that, between 2005 and 2016, exports of agricultural products fluctuated with an upward trend. A record of 2043 million US dollars was recorded during 2015. This confirms the existence of strong potentialities that the agricultural sector in Tunisia could exploit. Moreover, the share of agri-food products exceeds 80%. This is the main sub-sector followed by fish products. On the other hand, the share of agricultural raw materials is practically negligible (does not exceed 5%)

Table 26: Export Performance of Agricultural Products, 2005-2015

Products	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Agricultural Products	1,120	1,419	14,744	17,577	1,371	1,309	1,836	1,609	1,671	1,345	2,043	1,447
Agri-Food Products	925	1,207	1,250	1,507	1,179	1,109	1,566	13,977	1,460	1,128	18,344	1,240
Agricultural Raw Materials	39	422	39	522	42	48	50	477	444	522	56	6,060
Fish Products	156	171	184	1,988	149	1,522	220	1,666	168	165	1,533	147

Source: UN Comtrade.

Figure 48: Composition and Evolution of Export of Agricultural Products, 2005-2016

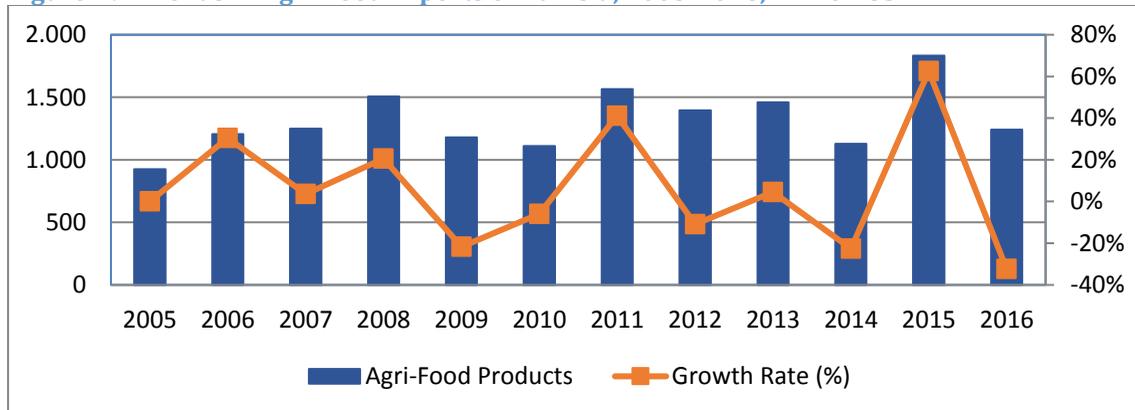


Source: UN Comtrade.

As for detailed sub-sector analysis, between 2005 and 2016, exports of agri-food products fluctuated sharply (lack of stability in the evolution). Indeed, each increase is followed by a fall in exports during the following year. A record was achieved in 2015 with 1833.8 million USD.

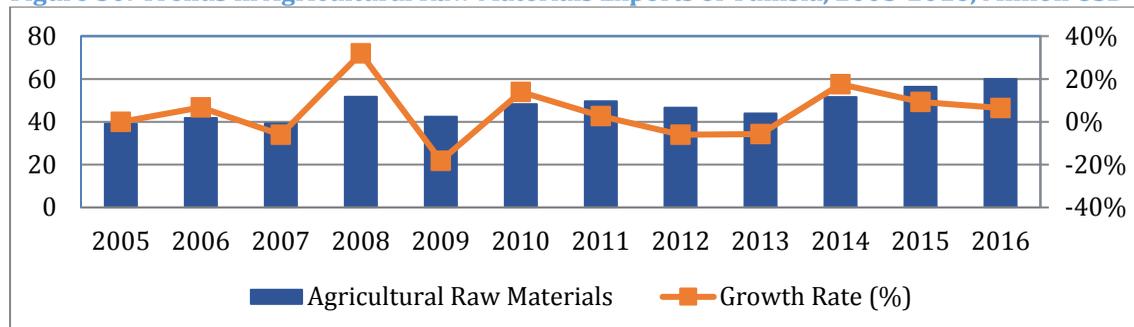
For agricultural raw materials, during the period 2005-2016, exports are quite low. On the other hand, an upward trend has been observed since 2013 although it is necessary to consider the impact of exchange rate and quantity effects. The tunisian dinar experienced a continuous depreciation during this period, which explains this increase.

Figure 49: Trends in Agri-Food Exports of Tunisia, 2005-2016, Million USD



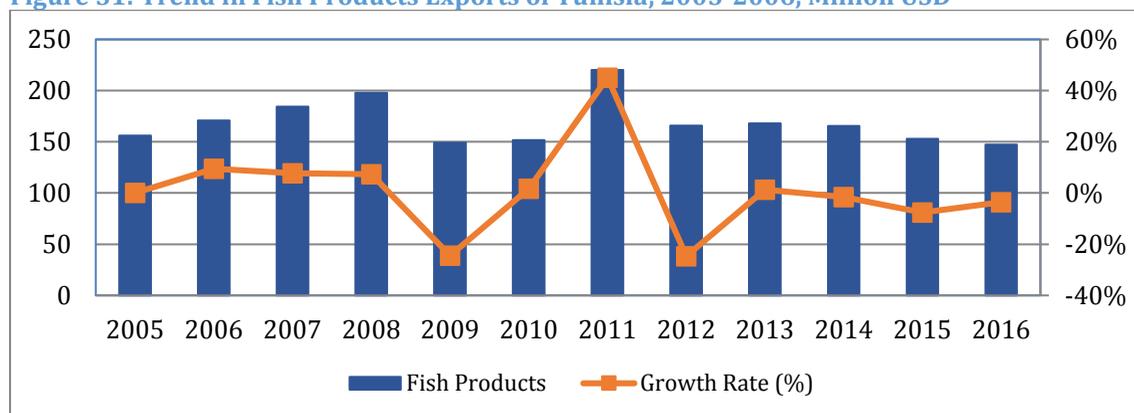
Source: UN Comtrade.

Figure 50: Trends in Agricultural Raw Materials Exports of Tunisia, 2005-2016, Million USD



Source: UN Comtrade.

Figure 51: Trend in Fish Products Exports of Tunisia, 2005-2016, Million USD

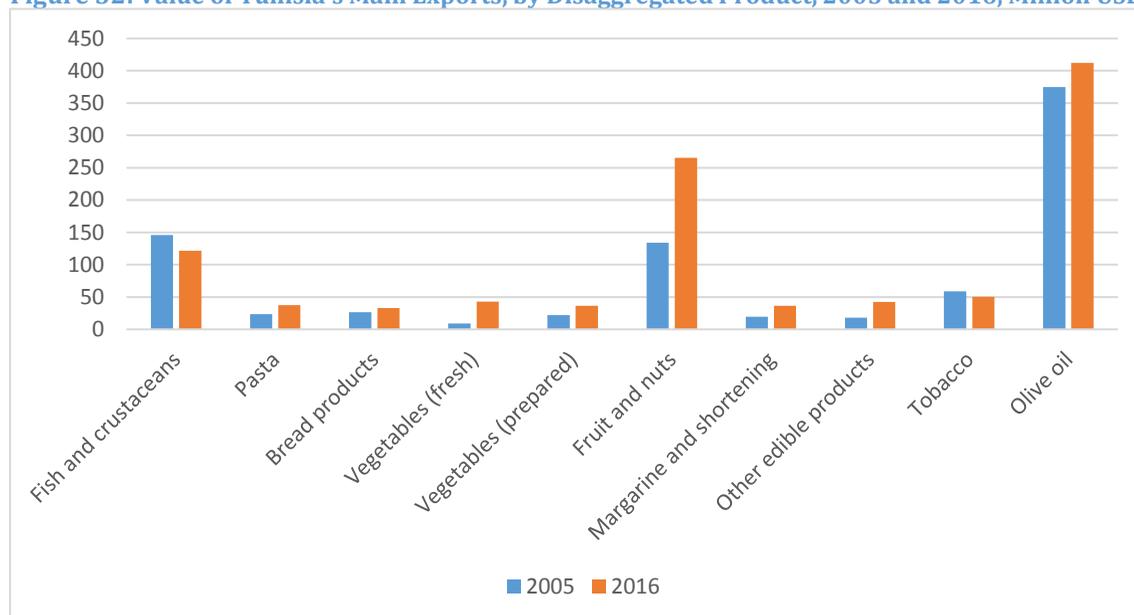


Source: UN Comtrade.

For fish products, during the period 2005-2016, exports did not vary significantly, with an average of around 150 to 160 million USD. A peak was observed during 2011 with more than 220 million USD of exports whereas, since 2012, there has been a continuing downward trend in exports of those products.

At a more disaggregated level according to the Annex 1 classification, Tunisia's trade patterns are relatively concentrated. Using average values for 2014 through 2016, the ten leading export products in the agricultural sector accounted for 78% of the total. Those products were (in order) olive oil, fruit and nuts, fish and crustaceans, tobacco, fresh vegetables, pasta, bread products, margarine and shortening, other edible products, and prepared vegetables. Figure 52 shows the evolution of exports of these products over the last decade. Values exhibit steady growth in most cases, except for olive oil, which fluctuates much more than the other products, and fish and crustaceans, which are on a downwards trend.

Figure 52: Value of Tunisia’s Main Exports, by Disaggregated Product, 2005 and 2016, Million USD



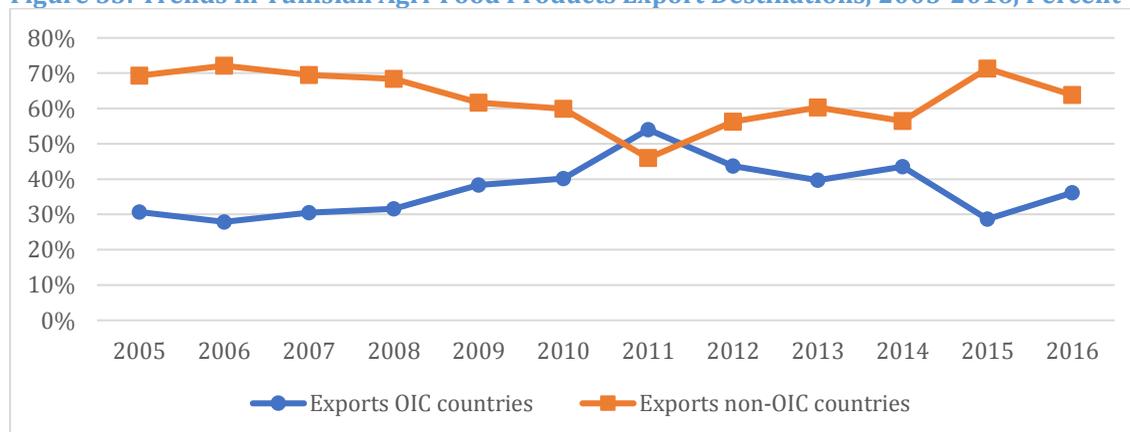
Source: UN Comtrade.

Market structure and networks of agricultural exports

Italy, Libya, Spain, France, the United States, Morocco and Algeria were Tunisia's 7 main agricultural export destinations during the period between 2005 and 2016. In 2016, about 32% of Tunisia's total agricultural exports went to OIC member countries. Among the OIC members, the Arab countries are the most important export destinations, with a share equal to 25.7% of total exports of agricultural products.

The share of OIC member countries in agri-food exports increased significantly from 30.7% in 2005 to 54% in 2011. This share decreased afterwards to 36.1% in 2016. Overall, the share of agri-food exports to OIC member countries is below that for non-OIC members.

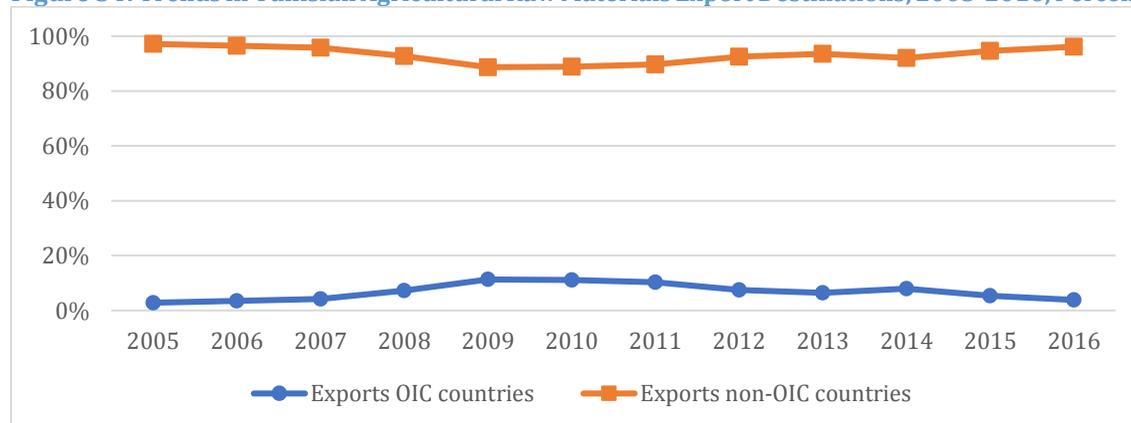
Figure 53: Trends in Tunisian Agri-Food Products Export Destinations, 2005-2016, Percent



Source: UN Comtrade

During the period 2005-2016, the share of agricultural raw materials exports to OIC member countries was quite low, not exceeding 10% of total exports, with almost all exports of agricultural raw materials destined to countries outside the region.

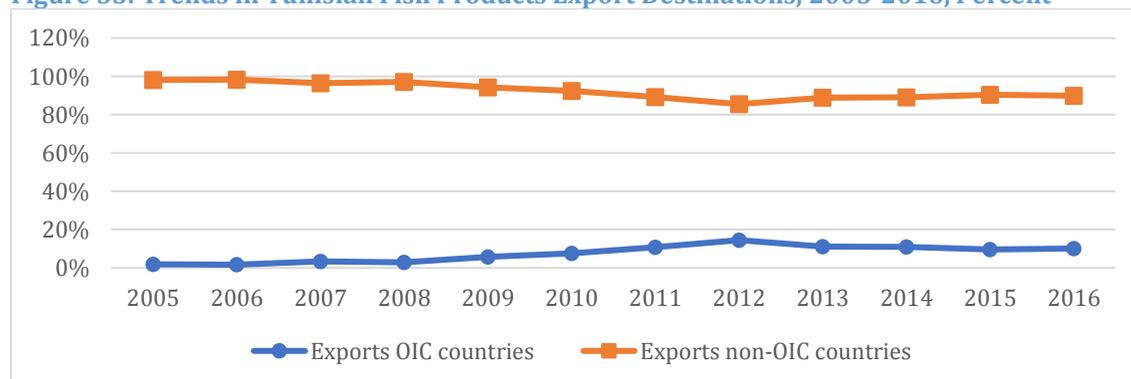
Figure 54: Trends in Tunisian Agricultural Raw Materials Export Destinations, 2005-2016, Percent



Source: UN Comtrade.

During the period 2005-2016, the share of exports of fishery products to OIC member countries remained relatively low compared to non-OIC countries. It went from 1.9% in 2005 to 14.5% in 2012. Then, it decreased slightly to reach 10.1% in 2016.

Figure 55: Trends in Tunisian Fish Products Export Destinations, 2005-2016, Percent



Source: UN Comtrade.

At the disaggregated product level, it is possible to examine Tunisia's place in global and regional trade networks by first looking at major bilateral linkages for the 10 leading products identified above (Table 27). For all products, there is a clear regional dimension, with strong trade linkages across the Mediterranean area. The EU stands out as a major partner in most sectors. But links with African countries are also important for pasta, bread products, an dmargerine and shortening, while links with the relatively distant US market stand out for fruit and nuts, other edible products, and olive oil. Finally, there are some emerging linkages with Asian countries, for instance with Japan for fish and crustaceans, and Malaysia for fruit and nuts and margarine and shortening.

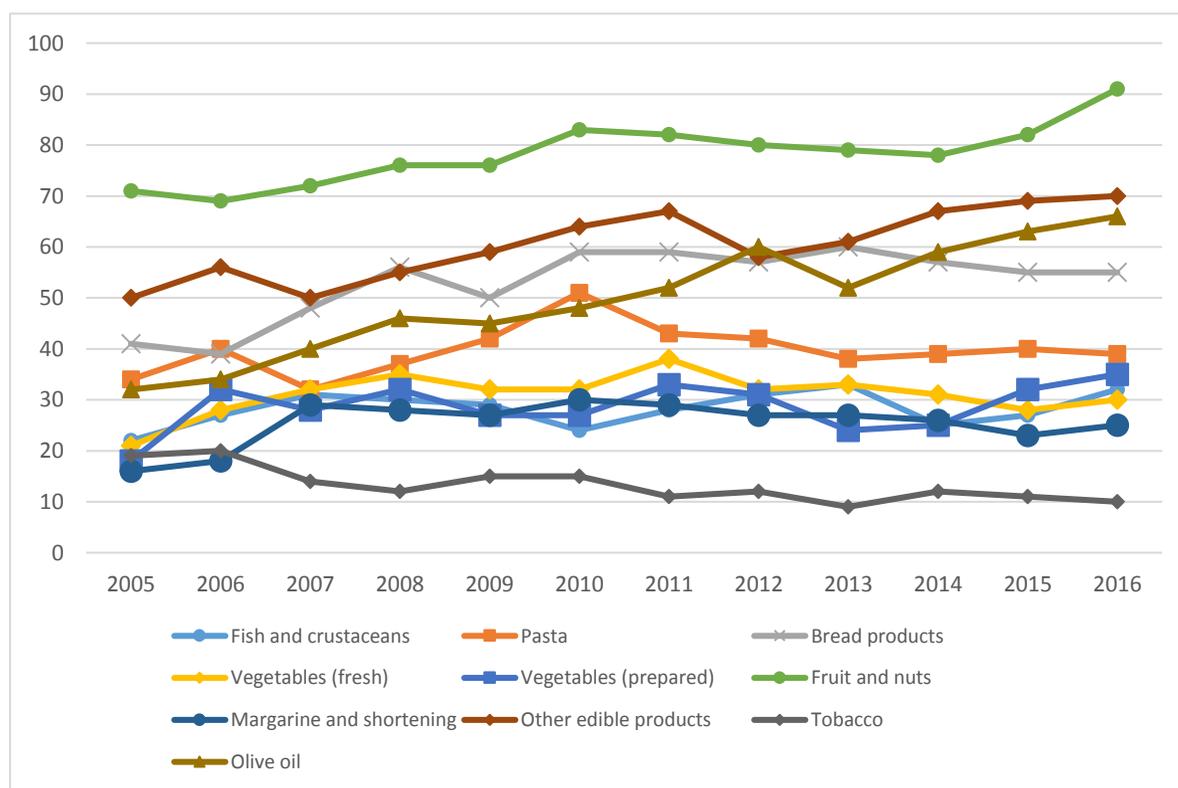
Table 27: Leading Export Product - Destination Combinations for Tunisia, 2016.

Product	Leading Export Destinations
Fish and crustaceans	Italy, Spain, France, Malta, Japan, Jordan, Algeria, France, Russia, Turkey.
Pasta	Libya, Ethiopia, Niger, Equatorial Guinea, France, Saudi Arabia, Morocco, Cameroon, Chad, New Zealand.
Bread products	Libya, France, Algeria, Italy, Morocco, Gabon, Jordan, Lebanon, Cote d'Ivoire, Congo. France, Libya, Italy, Netherlands, UAE, Russia, Saudi Arabia, Germany, Spain, Burkina Faso.
Vegetables (fresh)	Libya, Italy, France, Algeria, Netherlands, Germany, Canada, Belgium, Lebanon, USA.
Vegetables (prepared)	Morocco, France, Germany, Italy, USA, Spain, Libya, Malaysia, Indonesia, UAE.
Fruit and nuts	Libya, Cameroon, Gabon, Congo, Guinea, Gambia, Mauritania, Lebanon, Madagascar, Jordan.
Margarine and shortening	Senegal, Libya, Algeria, USA, Germany, Cuba, France, Ethiopia, Saudi Arabia, Guinea.
Other edible products	France, Libya, Turkey, Belgium, Morocco, Algeria, USA, Germany, Denmark.
Tobacco	Italy, Spain, USA, France, Canada, Saudi Arabia, Seychelles, Portugal, UAE, Morocco.
Olive oil	

Source: UN Comtrade.

The above insights can be formalized by analyzing degree centrality, i.e. the number of countries it has direct trade links with. Figure 56 shows results for the export side. There is a clear tendency towards increasing geographical diversification of exports over the last decade, the only exception being tobacco, where foreign markets in 2016 were fewer in number than in 2005. This result suggests that although Tunisia's exports are relatively concentrated in the product dimension, that concentration is to some degree offset over time by increasing diversity in markets served.

Figure 56: Out Degree Centrality, Ten Leading Tunisian Agricultural Exports, 2005-2016, Number



Source: UN Comtrade.

Import of Agricultural Products

Composition and patterns of agricultural imports

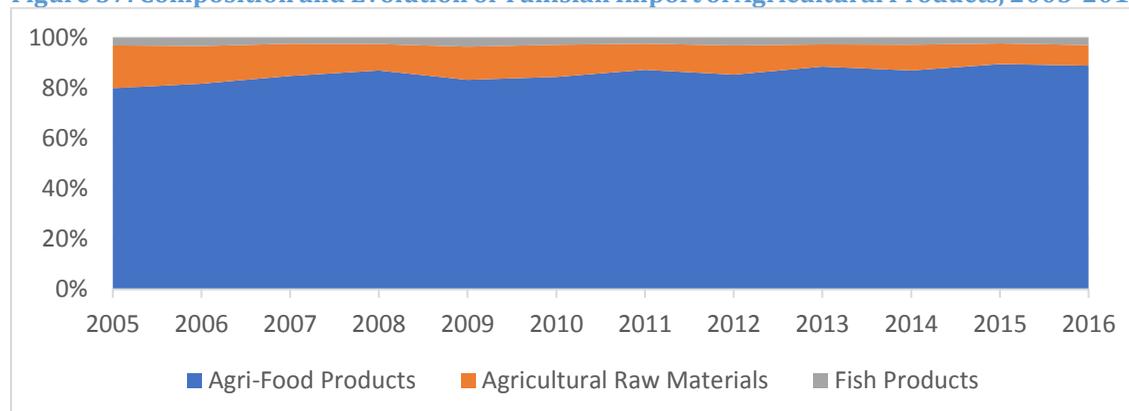
Analysing imports, agricultural products imports grew significantly from 1330 million USD in 2005 to 2351.1 million USD in 2016, representing an increase of 76.7%. Agri-food products is the main category in Tunisia's agricultural imports, followed by imports of agricultural raw materials. In fact, agri-food imports increased from 1063.4 million USD in 2005 to 2090.9 million USD in 2016. By contrast, imports of agricultural raw materials increased from in the first part of the sample, but declined in 2015 and 2016, while imports of fishery products increased from 40.3 to 68.5 million US dollars over the same period. However, agri-food products account for more than 80% of total agricultural imports (see Figure 57 and Table 28).

Table 28: Import Performance of Agricultural Products, 2005-2015, Million USD

Products	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Agricultural Products	1,331	1,437	2,127	2,787	1,866	2,360	3,004	2,494	281,010	26,588	2,451	2,351
Agri-Food Products	1,063	11,744	1,804	24,233	15,544	19,944	26,222	21,287	24,877	2,312	2,193	20,911
Agricultural Raw Materials	2,277	215	27,070	2,944	2,466	300	3,099	29,090	2,488	270	2,022	1,922
Fish Products	40	488	533	71	677	677	744	77	755	76	56	699

Source: UN Comtrade retrieved through WITS.

Figure 57: Composition and Evolution of Tunisian Import of Agricultural Products, 2005-2016



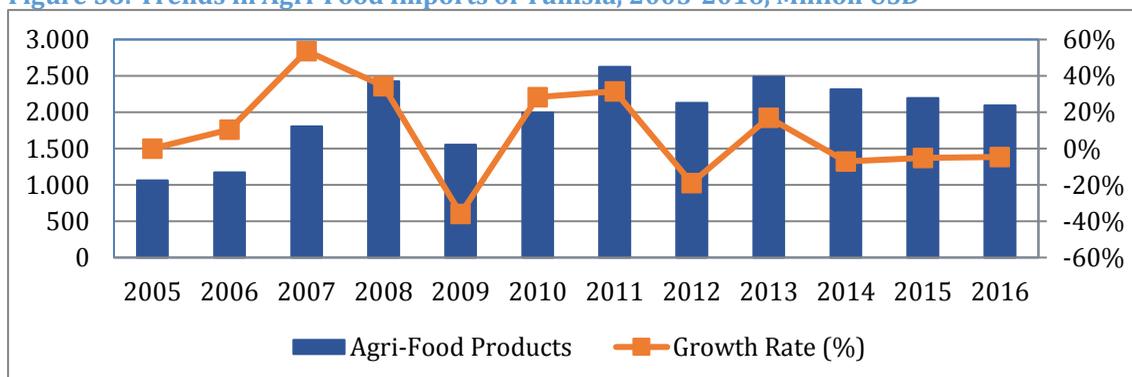
Source: UN Comtrade retrieved through WITS.

Imports of agri-food products during the period 2005-2016 fluctuated and have experienced three main phases:

1. They increased continuously during the period 2005-2008, from 1,063.4 in 2005 to 2,422.9 million USD in 2008;
2. Following a remarkable decline in 2009, imports of agri-food products increased again from 1553.7 million USD in 2009 to 2621.9 million USD in 2011;
3. Finally, imports of agri-food products declined steadily from 2486.8 million in 2013 to 2090.9 million USD in 2016. An exceptionally high level of imports was observed during 2011, the year of the revolution of 14 January. Since 2013, the Tunisian

authorities have tried to limit imports of agri-food products despite the effect of the deterioration of the Tunisian dinar exchange rate.

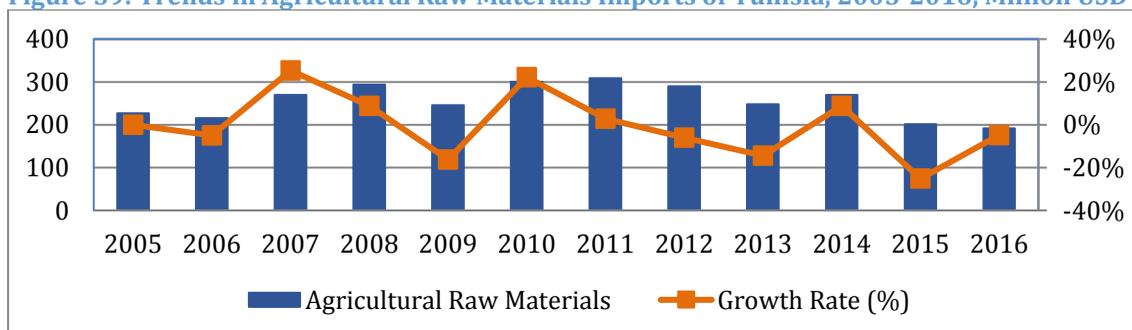
Figure 58: Trends in Agri-Food Imports of Tunisia, 2005-2016, Million USD



Source: UN Comtrade retrieved through WITS.

Imports of agricultural raw materials during the period 2005-2016 have some fluctuations. Following a slight increase during the period 2005-2011, it decreased significantly from 308.6 million USD in 2011 to 191.7 million USD in 2016 (Figure 59). The annual growth rate of these imports varies between -30% and 20%. Since 2014 this rate has remained fairly close to zero. This last observation confirms the efforts made by the Tunisian authorities to limit the deterioration of trade balance, which is in deficit.

Figure 59: Trends in Agricultural Raw Materials Imports of Tunisia, 2005-2016, Million USD

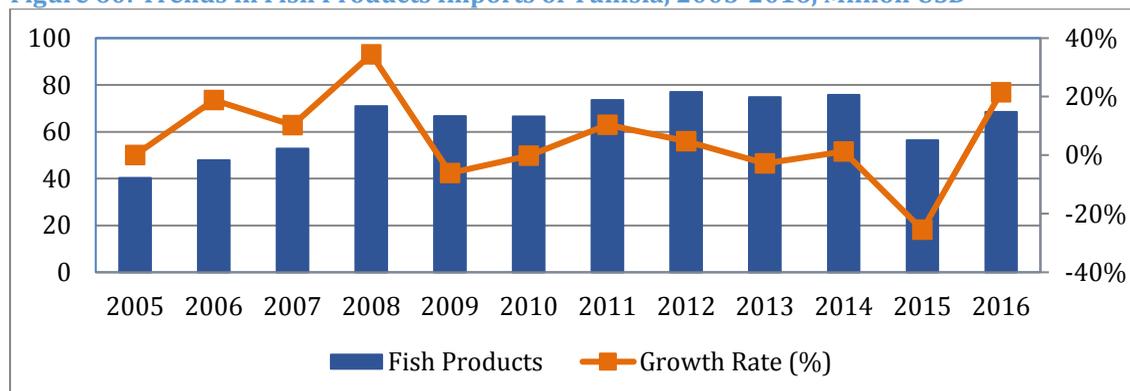


Source: UN Comtrade retrieved through WITS.

As mentioned above, imports of fishery products do not exceed 5% of total imports of agricultural products. The annual growth rate of imports is quite variable during the period between 2005 and 2016. In fact, the fisheries and aquaculture sector in Tunisia contributed to 6.4% of the value of agricultural production during the period 2006-2016, 12.9% to the value of agricultural exports and generated 51261 direct jobs. The average per capita annual consumption of seafood and aquaculture is around 12 kg per year. There are 41 fishing harbors with a capacity of 150 000 tons per year and 2 fishing ports under construction and 13 908 fishing units including 12 775 active units.¹⁰⁸

¹⁰⁸ www.onagri.nat.tn.

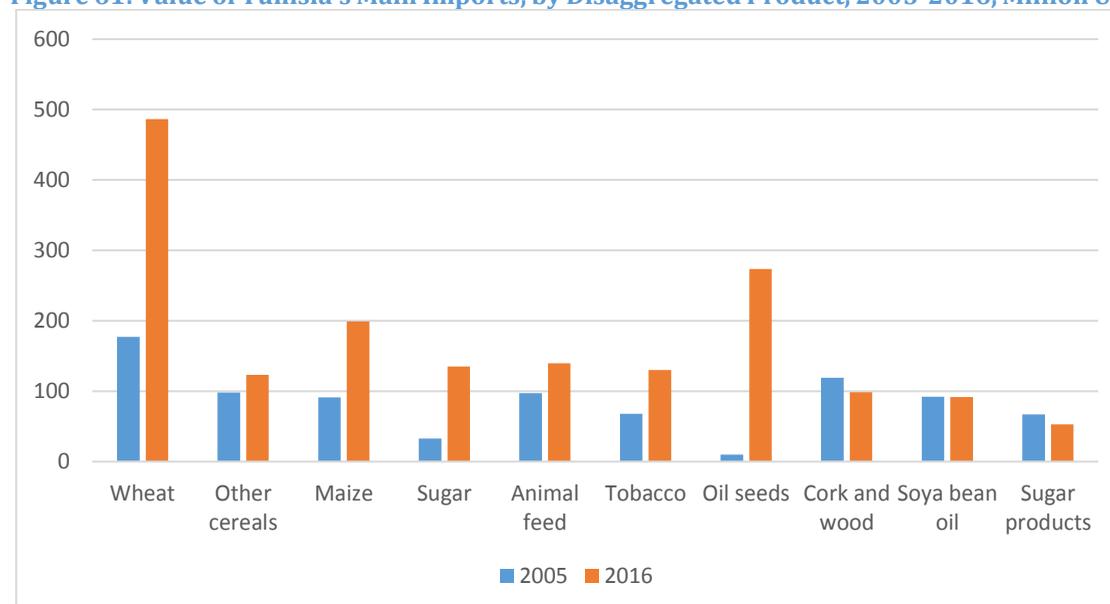
Figure 60: Trends in Fish Products Imports of Tunisia, 2005-2016, Million USD



Source: UN Comtrade retrieved through WITS.

On the import side, the ten leading products are (in order): wheat and meslin; oil seeds and oleaginous fruits; maize; animal feed; tobacco; cork and wood; other cereals; soya bean oil; sugar; and sugar preparations. Together, these products accounted for 69% of imports on average over the 2014-2016 period, which indicates that Tunisia’s import bundle was somewhat more diversified than its export bundle. Moreover, the collection of products suggests that, in general, the country’s agricultural trade is characterized by complementarity of export and import flows, rather than intra-industry trade in similar products. Figure 61 shows the evolution of imports of these products over the last decade. The leading product, wheat, shows significant swings in total import value year-on-year, but it is always the predominant import product. Other categories generally see growth over time, but fluctuation year-on-year is similarly significant.

Figure 61: Value of Tunisia’s Main Imports, by Disaggregated Product, 2005-2016, Million USD



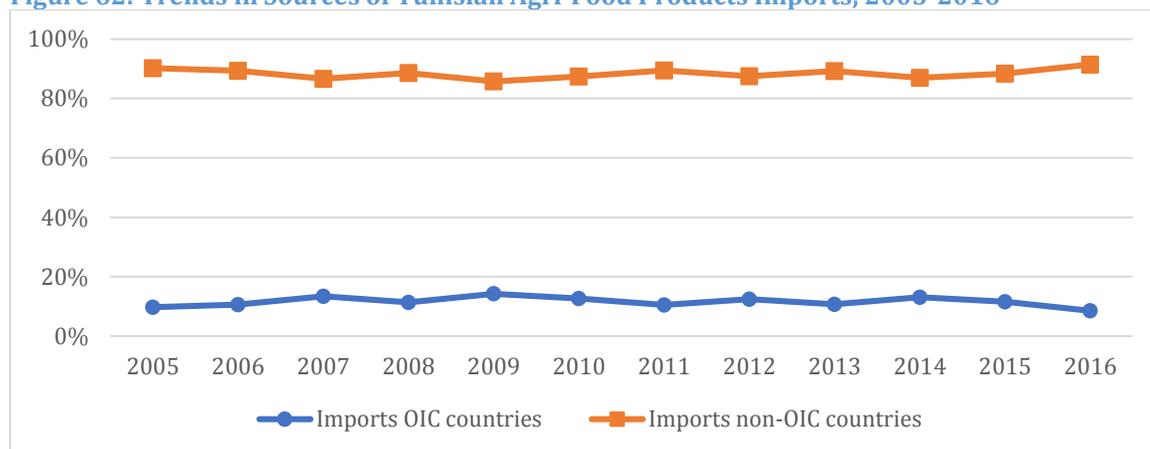
Source: UN Comtrade

Market structure and networks of agricultural imports

Brazil, the United States, France, Ukraine, Argentina, Italy, Russia, Spain, Germany and Canada were the top 10 sources of Tunisian imports of agri-food products during the period 2005-2016. In 2016, only 8.5% of Tunisia's total agricultural imports came from the OIC member countries, among which mainly Arab countries are the largest sources with a share of 4.1% of total imports of agricultural products.

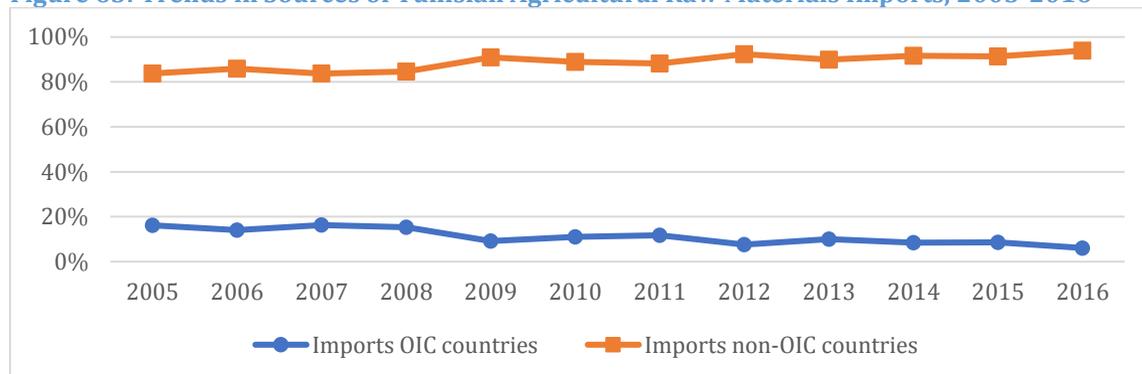
For agri-food products, agricultural raw materials and fishery products, the share of imports from OIC member countries has not changed significantly during the period 2005-2016 and did not exceed 20% for these 3 categories of products (Figures 62-64.)

Figure 62: Trends in Sources of Tunisian Agri-Food Products Imports, 2005-2016



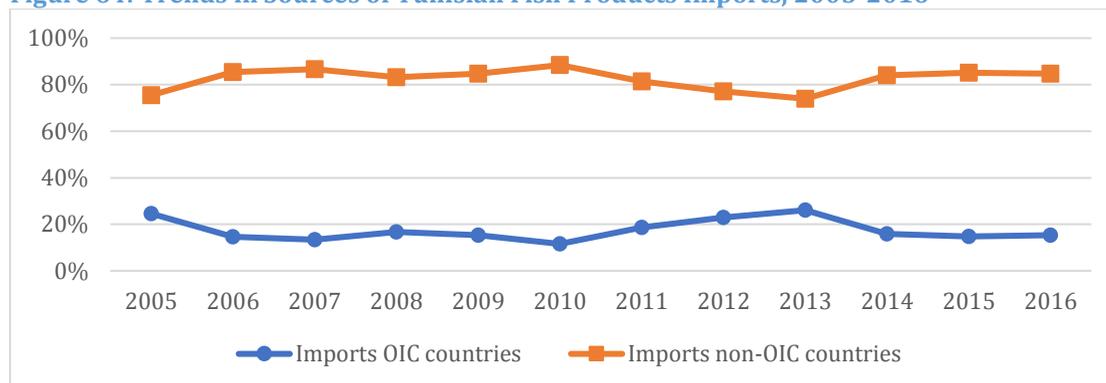
Source: UN Comtrade.

Figure 63: Trends in Sources of Tunisian Agricultural Raw Materials Imports, 2005-2016



Source: UN Comtrade.

Figure 64: Trends in Sources of Tunisian Fish Products Imports, 2005-2016



Source: UN Comtrade.

Table 29 repeats the disaggregated analysis above for major import products. Linkages with countries in the Mediterranean area are again very important. There is a particular role played by EU countries in products like wheat, cereals, and maize that is suggestive that preferential trade arrangements play a key role in shaping trade flows, as more distant but globally competitive suppliers play a secondary role, with the exception of Ukraine. Imports in sugar and soya bean oil are quite concentrated geographically. Links with more distant countries are important for products like oil seeds (Latin America, as well as India and Nigeria), and tobacco (African countries).

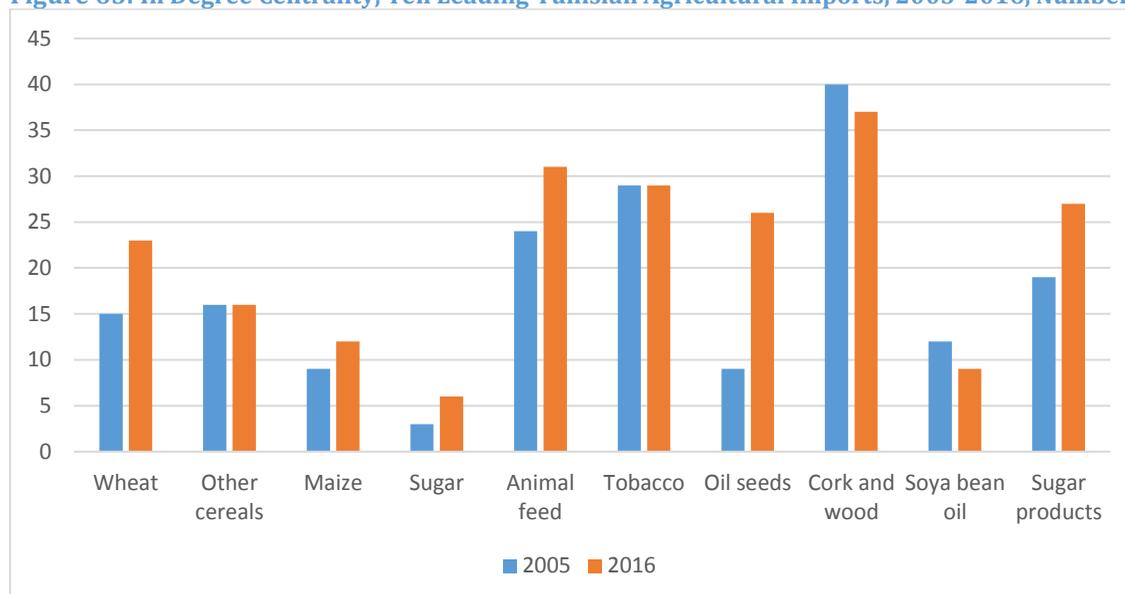
Table 29: Leading Import Product - Origin Combinations for Tunisia, 2016.

Product	Leading Import Origins
Wheat	Ukraine, Canada, Italy, France, Greece, UK, Russia, Spain, Bulgaria, Romania.
Other cereals	Ukraine, UK, Russia, France, Finland, Argentina, Estonia, Romania, India, Canada.
Maize	Ukraine, USA, Argentina, Serbia, Romania, Paraguay, Bulgaria, Brazil, France, Turkey.
Sugar	Brazil, Uruguay, France, Mauritius, Spain, Belgium.
Animal feed	Argentina, Italy, France, Spain, Brazil, USA, Germany, Ukraine, Mauritania, Portugal.
Tobacco	Serbia, Turkey, Brazil, Switzerland, France, Bulgaria, Greece, Malawi, Germany, Zimbabwe.
Oil seeds	USA, Paraguay, Brazil, Sudan, Ukraine, Turkey, Argentina, Egypt, India, Nigeria.
Cork and wood	Sweden, Finland, Austria, France, Romania, Russia, Italy, Germany, Latvia, Estonia.
Soya bean oil	Russia, Argentina, Italy, USA, Brazil, Canada, Netherlands, Spain, France.
Sugar products	Ukraine, Brazil, India, Morocco, Egypt, Germany, Netherlands, France, Algeria, Turkey.

Source: UN Comtrade

Figure 65 shows the import side of degree centrality. It is immediately apparent that Tunisia tends to deal with fewer source markets than destination markets when it comes to leading products. Moreover, the level of concentration in geographical terms on the import side is fairly constant over time, with no clear trend in evidence. Whereas Tunisia is clearly diversifying its export base, the data suggest that trade relations on the import side tend to exhibit greater hysteresis, in the sense that historical trade relations tend to be prolonged in time and do not fluctuate or grow in the same way as links on the export side do.

Figure 65: In Degree Centrality, Ten Leading Tunisian Agricultural Imports, 2005-2016, Number



Source: UN Comtrade.

Agricultural Quality Framework

Agricultural Quality Related Policies and Infrastructure

Tunisian agricultural policy is quite comprehensive. It is based on five pillars:

- Development of infrastructure;
- Human resources;
- Incentives and support to farmers;
- Support to agricultural products exports; and
- Research and Development.

Since independence in 1956, the Tunisian government has mobilized resources for water infrastructure, which is currently well established. Indeed, the hydric infrastructure is very important and a whole system of mobilization-transfer-allocation of surface water resources could maintain the production of agricultural production, in addition to potable water. The infrastructure is also well developed for soil conservation, fight against desertification and management of forests.

Various education institutions (11 high education institutions in addition to vocational training centers) and familiarization programs insure a relatively good level of the competencies of local farmers.

The new investment code offered farmers different incentives, including mechanization and the use of new technologies. These incentives can be classified into 3 categories:

- Financial bonuses (investments allowing an upgrade in value-added and competitiveness, regional development, employment)¹⁰⁹
- Fiscal advantages¹¹⁰
- Access to finance¹¹¹

In addition to these incentives, farmers benefit from support in the form of subsidies, and access to inputs.

In addition to the opportunities given by trade agreements, exporters benefit from trade facilitation (support to reduce the cost of and the time to export agricultural products) as well as export promotion incentives (export premiums and export promotion programs). These incentives aim to overcome the costs of logistics (mainly for exports to African markets).

Research and development is important pillar of the agricultural policy. 10 research institutions ensure a dynamism of this important activity.

Agricultural Certification and Labelling

Local and Regional Quality Labelling Schemes

According to Tunisian officials, the potential for exports is huge because of existing demand not only in OIC countries, but also in Europe and North Africa. About 100 firms asked to be certified, but only 50 could finish the process and get the label. This number is relatively small because of the lack of financial and human resources necessary to communicate efficiently with firms that need to be aware about the opportunities that the label generates.

As for the certification of the organic products, the regulations have been set in the late 1990. The sector is relatively developed: the areas of organic farming grew significantly and reached 240 100 hectares in 2016 (18 600 hectares in 2002 and 300 hectares in 1997). As for the number of certifying operators, it increased from 481 in 2002 to 3690 in 2016. Several private firms operate as certifiers, in addition to INNORPI. It is also considered as a potentially important niche, especially to increase the value added of the exports.

In the area of technical barriers to trade, the Tunisian government has concluded Mutual Recognition Agreements (MRAs) of product conformity certificates with the governments of Libya, Syria, Egypt and Morocco and Jordan. Such agreements are important to develop trade relations between Tunisia and partners from the region.

Halal

The main barrier to the development of exports of Tunisian products to the region is the lack of the Halal label. Tunisian regulations in this area are new, incomplete and not really suited to their purpose. Indeed, in 2013 the National Institute for Standardization and Industrial Property (INNORPI), which is a public government institution, adopted the label Halal of SMIIC. The label is voluntary, and includes health and safety aspects (in order to have the label Halal, firms need to comply with the ISO 22000) in addition to religious criteria. Subsequently, a Decree on

¹⁰⁹ <http://www.apia.com.tn/incitations-financieres-2.html>

¹¹⁰ <http://www.apia.com.tn/incitations-fiscales-2.html>

¹¹¹ <http://www.apia.com.tn/prets-fonciers-2.html>

certification procedures has been published in November 2017, which is an important step to formalize the process. However, according to other trade and packaging regulations, self-declaration as a Halal product is possible since 2008. This could be a constraint since it does not encourage firms to be certified as Halal by INNORPI when selling on the local market and encourage them to just add a sticker Halal on their product when importers do not require a formal recognized certification to sell on their local market. For the moment, it is mainly agri-food products that are concerned by the label.

Finally, the next step will be to develop the Halal label for other sectors (cosmetics for example).

Recent Evolution of the Trade Policy Landscape

Since the early 1990s, Tunisia has opted for integration into the global economy. This integration has resulted in the gradual liberalization of its foreign trade and the establishment of free trade areas with several countries. In addition to membership since 1993 of the GATT/ WTO, today, according to the ministry of commerce, Tunisia is linked with trade agreements to 50 countries in the region, representing more than 800 million consumers.¹¹² The main trade agreements signed in the last thirty years are the association agreement with the European Union (signed in 1995), the Agadir agreement (signed in 2004 with Morocco, Egypt and Jordan), the Pan-Arab Free Trade Area (signed in 1997) and the bilateral agreement signed in 2004 with Turkey. All these agreements have focused much more on industry than agri-food products which are subject to various barriers such as tariffs, quotas, licenses, standards, etc. In addition, according to WTO (2016), in Tunisia, agricultural products, are subject to controls and authorizations to prevent products that have already benefited from consumer subsidies from being exported or to ensure the availability of inputs for the domestic industry.

These FTAs are a key aspect of Tunisia's trade policy as it relates to agricultural products. The EU is a vital trading partner for Tunisia, in agriculture as in other sectors. Regional partners, including Turkey, play a secondary role, but not a negligible one.

Against this background, Tunisia has also been gradually liberalizing its tariff structure affecting agricultural products, from a relatively restrictive baseline. Its average applied MFN tariff rate on agri-food products fell from 72% to 33% between 2005 and 2016, with falls from 40% to 34% and from 11% to 2% respectively recorded for fish products and agricultural raw materials.

Main barriers and potential drivers: Stakeholder's views

This section reports the views of key stakeholders, as ascertained using semi-structured interviews. According to the stakeholders, the Tunisian agricultural sector is not exploiting its potential because of different factors, including the following:

- The majority of farmers are small that it is difficult to generate economies of scale and to be efficient on foreign markets. In addition to production costs, exports costs can't be overcome by small operators. Their international competitiveness is therefore negatively affected.
- The local market trade policy aims at maintaining low prices for consumers, which do not favor farmers' income. Indeed, in order to maintain the purchasing power of the poor and the middle class of the population, the government uses different mechanisms

¹¹² Source : <http://www.commerce.gov.tn/Fr/politique-du-commerce-exterieur> 11 44

to maintain prices low. They include market controls on several products, universal subsidies for strategic products and price controls for “strategic “products. These policies affect the farmer’s income. They also explain the prohibition of exports for some subsidized products that could potentially be exported.

- Despite the efforts described above, Tunisia is confronted to water scarcity constrain. Moreover, variability rainfall, which is more and more important with climate change, affects the productivity and the predictability of investment returns. Therefore, farmers are less and less attracted by agricultural activity. Knowing that more than 90% of the land is used by rained activities, it is clear that this sector is vulnerable to climate conditions.
- Knowing the structure of the structure, with a majority of very small farmers, in addition to the risks linked to this activity (with the high dependency on climate conditions), access to finance is one of the main barriers to investments agriculture.
- As mentioned above, the agricultural sector is dominated by small farmers facing difficulties to access to finance and unable to be overcome costs to exports. Among the barriers to exports (in addition to transport and tariffs), non-tariff measures to trade (sanitary and phytosanitary standards mainly) seem to be a real barrier to exports. Indeed, there is a lack of infrastructure to certify products and comply with standards. Costs to access to such services are therefore very high for farmers.
- In addition to the difficulties to comply with international standards, the same argument can apply to explain the difficulties to upgrade the value-added of the agricultural exports. The share of Organic products and more generally labelled and certified products is total exports still low even if they could be interesting niches for farmers to increase their income.
- Stakeholders put the stress on transaction costs – access to information about foreign markets opportunities, distribution channels – to export in this sector. Despite several governmental programs, to facilitate the access to foreign markets, these transaction costs still high and constitute a barrier for exports.
- Competition from foreign markets is not seen as a threat in itself, but resources are not enough to manage anti-competitive practices (subsidies, dumping). The liberalization of international trade was indeed not associated with a change in the policies to protect consumers. The government is still using traditional mechanisms (market controls, price controls, universal subsidies) to maintain the purchasing power. These mechanisms can’t apply for imported products.
- For trade with the OIC members, lack of MRAs for standards and conformity assessment is one of the barriers cited by stakeholder for the development of exports in agricultural products.

The **potential drivers**, according to the sector's stakeholders are:

1. Cultural proximity;
2. Complementarity (especially with remote countries);
3. Use of new technologies to reduce the cost of access to the regional market;
4. The competitive advantage for specific products (olive oil, dates, citrus);
5. New investment framework giving generous incentives to farmers;
6. The new regulations for the halal certification; and
7. Efforts to develop logistics (ports, road transport)

Conclusions and Lessons Learned

The Tunisian case study is interesting in different ways. Tunisia has chosen a liberalization policy since the early 90s. The liberalization was gradual and different trade agreements were signed (at the multilateral, regional and bilateral level). But these agreements did not concern agricultural products which was not in favor of this strategic sector. Contrary to industry, the agricultural sector is not benefitting from export opportunities. Tariffs as well as non-tariff measures to trade are preventing the economy from an interesting source of economic growth.

Trade flows did not increase as much as could have been expected for this sector. In addition, geographical conditions are their main drivers: Mediterranean countries (OIC and non-OIC members) are the main partners for exports. Relations with other OIC member countries are very small justifying the need for trade agreements and harmonization of regulations in order to lower trade costs and reduce transaction costs. In addition, investment in infrastructure and connectivity is required.

Tunisia considers trade relations as an opportunity, but modernization of the regulatory framework is needed to have a win-win outcome (mutual recognition of standards, subsidies). Also, the administration and the private sector need to be empowered in order to be able to take advantage of trade liberalization and avoid frictions due to subsidies and anti-competitive practices.

In parallel, the agricultural policy needs to be modernized. Instead of a price stability objective, which favors consumers, the promotion of farmers' income should be the aim of public policies in this sector. In addition, the efforts to switch to high value added cultures, the increase in productivity and the use of new technologies are necessary but not sufficient. Indeed, the development of a quality approach (standardization, labels, organic products...) is necessary. For that, financial and human resources are needed. The case of the Halal is the best example for the relations with OIC member countries. The promotion of this certification is undoubtedly one of the main channels to develop trade relations and increase value-added of exports.

In terms of more targeted conclusions, the review of data in this section, along with evidence from semi-structured interviews, supports the following:

1. Tunisia's exports are heavily concentrated on agri-food products, with that concentration becoming more pronounced over time.
2. Tunisia's export basket is relatively concentrated at a disaggregated level, with two products (olive oil and fruit and nuts) accounting for 46% of total exports. Imports are

- more diversified, with the top two products accounting for 32% of total imports (wheat and oil seeds).
3. There is evidence of geographical export diversification over time in most product categories, likely related to Tunisia's attention to regional integration with key partners like the EU and Turkey, although coverage of agreements in relation to agricultural products is not always complete.
 4. Intra-OIC trade plays a more important role for Tunisia than for the other case study countries, in particular with other Arab Group countries. Geography is a major factor in these relationships, as well as product mix: Tunisia's exports tend to be destined for final consumption, rather than for use as intermediates in production of processed goods.
 5. Quality infrastructure and certification is an area that needs further work. There is evidence that producers are experiencing difficulty with certification in important areas (e.g., organic products), and halal certification is as yet underdeveloped, but has significant potential.

5. CONCLUSION AND RECOMMENDATIONS

This study has been necessarily wide-ranging in its consideration of data. Its objective has been to cover the key issues that arise in terms of agricultural trade networks for sustainable development within the OIC. It has necessitated an extensive review of data, as well as three substantial case studies that serve to put the data in context. It is the purpose of this Study to draw it together to produce key messages and recommendations for the common interests of OIC member countries and therefore, the key messages and recommendations offered here are of relevance for member countries as they move forward on this important agenda item.

The study's first key finding is that global agricultural markets remain more distorted than those for manufactured goods, as evidenced by higher average levels of trade costs. Tariffs are a driving force behind this, but NTMs also play a key role in keeping trade costs high. Despite these impediments, trade in agricultural products has seen substantial growth since 1995. But market distortions hold back trade growth, which poses substantial development challenges for countries that are relatively dependent on agricultural exports, in particular low and middle income countries.

In terms of agricultural trade within the OIC, although trade in agricultural products has been growing over recent years, the proportion of world trade accounted for by OIC countries remains relatively small. In 1995, OIC countries accounted for 6.7% of global exports; by 2016, that proportion had increased to 8.0%. Consistent with this result, OIC exports grew at an average annualized rate of 5.9% over that time period, compared with 5.0% for non-OIC exports. Both at the global level and within the OIC, trade networks in agricultural products have a strong intra-regional dimension. Trade costs, including those due to geography, are an important determinant of this outcome. Over time, inter-regional links are becoming more important in some cases, but there is significant variation by product. However, there is also an important degree of cross-sectoral heterogeneity at play, so the degree of concentration or dispersion in a network depends in part on product characteristics.

Regional trade agreements play an important role in promoting the intra-regional nature of global agricultural trade networks, but the effect varies markedly across regions, time periods, and product groups. There is evidence that preferential margins are substantial, and much of world trade in agricultural products—and intra-OIC trade—takes place within RTAs. Agreements with neighboring regions, such as the EU, are likely also a significant driver of growth in extra-OIC trade in agricultural products. For African countries, Regional Economic Communities (RECs) also play a significant role, as they shape both trade and agricultural policies on a regional level.

In terms of trade networks, it is difficult to talk about a single OIC trade network in agricultural products because of strong regional dynamics just referred to. Rather there are separate networks within the OIC based largely on intra-regional trade. Moreover, the characterization of OIC trade networks in this sector is difficult because of the very important role played by extra-OIC trade for many countries and products.

From a policy perspective, it is by no means a negative feature of intra-OIC trade that clear networks do not emerge from the data in some cases. Trade flows are the result of a complex interplay between policy, geography, and productivity (comparative advantage). In some cases, this interplay displays distinct characteristics—such as the role of Turkey and Saudi Arabia as hub countries for some products. But in other cases, trade links are relatively dispersed due to

the tendency for agricultural trade to be in dissimilar goods (exploiting geographical differences), and influenced by trade policies including regional and cross-regional trade agreements.

There is evidence that most regions—both within and outside the OIC—are becoming more geographically diversified in their export patterns over time. This is another reason why simplistic network analysis is not appropriate for this sector. Rather, it is important to look at evolving dynamics, and to recognize the importance of market potential both inside and outside particular groupings. There is a clear movement in the agricultural sector towards trading with more distant partners, and this movement is likely to intensify as mega-regional and cross-regional trade agreements become more common.

Reference to a measure like TRCA can help policymakers identify potential growth sectors, and the report contains detailed information on this measure, which is highly country and product specific. It is a more reliable measure of export potential than, for example, recent patterns in the net balance of trade at the product level.

Given the importance of NTMs in the agricultural sector, a key issue for countries developing an export base is quality and certification. OIC members deal with this issue in different ways, but there is a clear movement towards supporting national quality infrastructure, including in areas like halal certification, although the movement is not yet universal.

Although this report has dealt with data and qualitative information in a highly specific way, at the level of individual countries and products, it is not appropriate to make recommendations at the same level because they would not be broadly applicable to OIC's membership. Rather, it is most useful to focus on areas of strategy and policy that can be of some relevance to all members across regional groupings and income levels. Based on the findings above, it is possible to distill a number of feasible recommendations for the consideration of OIC member countries:

1. **Collaborative policy liberalization:** OIC member countries should continue to work with organizational and regional partners, as well as other willing parties, to progressively liberalize agricultural policies at the multilateral level. Pushing for liberalization within the multilateral system is a long-term goal, and one that limits the potential for trade diversion that can arise from the use of preferences or regional agreements. Member countries should also give further consideration to unilateral liberalization of agricultural policies on an MFN basis, consistent with the evidence produced in the report that MFN tariffs have been becoming less restrictive over time, even though no negotiations have been concluded on agriculture since the end of the Uruguay Round in 1994.
2. **Look Beyond Traditional Trade Policies:** Both the data analysis and case studies have shown that the pattern of bilateral trade is a complex interplay of a number of different economic forces. But a major factor is connectivity. This is all the more true in emerging agricultural product sectors like fresh fruits and vegetables, and fish, where cold chain storage is important. There is evidence that some OIC member countries have strong comparative advantages in these sectors. To take advantage of them, however, they need to develop high quality transport connections with consumer markets. Trade agreements often do not address such issues, but broader economic cooperation programs can. Developing connectivity is one way of reducing trade costs in agricultural markets, in addition to lowering tariffs and rationalizing NTMs.

3. **Regional integration and preferences:** Member countries should continue their work to develop and implement a preferential market access scheme, as well as to conclude more intra- and cross-regional trade agreements, as a second best policy option when multilateral liberalization is not available. This approach can help member countries benefit from the strong intra-regional dynamic of agricultural trade by combining with regional partners to liberalize trade on a preferential basis. Most intra-OIC trade already takes place on a preferential basis, but the number and scope of agreements can be widened to include more countries. In addition, trade agreements should be regularly re-inspected for additional areas that can be covered, such as NTMs, including trade facilitation, quality and certification, mutual recognition, and capacity development, in addition to just liberalizing tariffs.
4. **Limitation of Trade Diversion and Maximization of Trade Diversion:** Member countries should prioritize integration—whether through preferences or trade agreements—with low cost suppliers. Doing so limits the amount of trade diversion consequent on a policy change, and helps maximize trade creation.
5. **Set Appropriate Policy Objectives:** Member countries as both net exporters and net importers of agriculture products should target growth in inter- as well as intra-regional trade in agriculture, especially through best use of preferential trade agreements and hub economies in order to contribute to both sustained agricultural trade networks and overall intra-OIC trade expansion.
6. **Make Use of Hub Economies Where Appropriate:** Network analysis shows that there is no single trade network within the OIC, and that at the product level, network characteristics vary markedly. However, in some cases, economies like Turkey and Saudi Arabia play a hub role, with suppliers acting as spokes. It is important for exporting countries to develop closer links with relevant hubs, so as to help drive their trade integration.
7. **Take Advantage of Emerging Industrialization:** Exporters of agricultural raw materials have the opportunity to benefit from derived demand for light manufactured goods, such as processed foods and garments, through newly industrializing countries. This dynamic is particularly strong in Asia, but is also emerging in Africa. It involves OIC member countries, but also non-member countries. As part of efforts to support intra- and cross-regional integration, member countries can, in addition to targeting low cost suppliers, target rapidly industrializing countries where demand growth for agricultural raw materials is likely to be strongest.
8. **Rationalize Non-Tariff Measures:** Agricultural exporters encounter a wide range of NTMs when entering international markets. OIC member countries are no exception to this rule. The organization can facilitate regional partners and development partners working together on issues like standards and certification, including in areas of particular interest, like halal certification, as well as infrastructure and trade facilitation. Member countries should endeavor to use NTMs only when justified by a rigorous cost-benefit analysis. This report has not been able to review individual measures in detail, but there is clear evidence that whereas MFN tariffs are falling, other types of trade

barriers are not. In the absence of multilateral action, unilateral reforms should be considered, as should concerted action with willing partners.

9. **Build Supply-Side Capacity:** In particular for low and middle income countries, it is important to develop their ability to produce competitively if they are to take full advantage of the opportunities offered by market integration. Dealing with trade barriers within exporting countries—particularly poor infrastructure and trade facilitation—is key. But NTMs, unlike tariffs, can also have implications for exporters, not just importers. In particular, developing national quality infrastructure as it applies to agricultural products is important. Cooperation through the OIC, as well as through related bodies, can help support this undertaking.

Annex 1 – Product Classification

Title	Section	Division	COMCEC Group
Agricultural Products – SITC Sections [0]+[1]+[2]+[4] – Divisions [27, 28]			
Agri-food Products - SITC Sections [0] + [1] + [4] Divisions +[22] - [03]			
	0 - Food and live animals		
		00 - Live animals other than animals of division 03	
			00 - Live animals other than animals of division 03
		01 - Meat and meat preparations	
			011 - Meat of bovine animals, fresh, chilled or frozen
			012.1 - Meat of sheep or goats, fresh, chilled or frozen
			012.3 - Meat and edible offal of the poultry of subgroup 001.4, fresh, chilled or frozen
			Rest of 01 - Meat and meat preparations
		02 - Dairy products and birds' eggs	
			022 - Milk and cream and milk products other than butter or cheese
			023 - Butter and other fats and oils derived from milk
			024 - Cheese and curd
			025 - Eggs, birds', and egg yolks, fresh, dried or otherwise preserved, sweetened or not; egg albumin
		04 - Cereals and cereal preparations	
			041 - Wheat (including spelt) and meslin, unmilled
			042 - Rice
			044 - Maize (not including sweet corn), unmilled
			043 045 Other Cereals (043 - Barley, unmilled, 045 - Cereals, unmilled (other than wheat, rice, barley and maize))
			046 047 Cereal Flour (046 - Meal and flour of wheat and flour of meslin, 047 - Other cereal meals and flours)
			048.3 - Macaroni, spaghetti and similar products (pasta), uncooked, not stuffed or otherwise prepared
			048.4 - Bread, pastry, cakes, biscuits and other bakers' wares
			Rest of 04 - Cereals and cereal preparations
		05 - Vegetables and fruit	
			054 - Vegetables, fresh, chilled, frozen or simply preserved; roots, tubers and other edible vegetable products, n.e.s., fresh or dried
			056 - Vegetables, roots and tubers, prepared or preserved, n.e.s.

Title	Section	Division	COMCEC Group
			057 - Fruit and nuts (not including oil nuts), fresh or dried
			058 - Fruit, preserved, and fruit preparations (excluding fruit juices)
			059 - Fruit juices (including grape must) and vegetable juices, unfermented and not containing added spirit
		06 - Sugars, sugar preparations and honey	
			061.11-061.12 Beet & Cane Sugar (061.11 - Cane sugar, raw HS 2007 code(s) 1701.11, 061.12 - Beet sugar, raw HS 2007 code(s) 1701.12)
			061.6 - Natural honey HS 2007 code(s) 0409.00
			062 - Sugar confectionery
			Rest of 06 - Sugars, sugar preparations and honey
		07 - Coffee, tea, cocoa, spices, and manufactures thereof	
			071 - Coffee and coffee substitutes
			072 073 Cocoa and Chocolate (072 - Cocoa, 073 - Chocolate and other food preparations containing cocoa, n.e.s.)
			074 - Tea and maté HS 2007 code(s) 0902.10,20,30,40; HS 2007 code(s) 0903.00; HS 2007 code(s) 2101.20
			075 - Spices
		08 - Feeding stuff for animals (not including unmilled cereals)	
			08 - Feeding stuff for animals (not including unmilled cereals)
		09 - Miscellaneous edible products and preparations	
			091 - Margarine and shortening HS 2007 code(s) 1517.10,90
			098 - Edible products and preparations, n.e.s.
Title	Section	Division	COMCEC Group
	1 - Beverages and tobacco		
		11 12 - Beverages and tobacco	
			111 - Non-alcoholic beverages, n.e.s. HS 2007 code(s) 2201.10, .90, 2202.10, .90
			112 - Alcoholic beverages HS 2007 code(s) 2204, 2205.00, 22.06.00,22.03.00, 2208.60-.90
			12 - Tobacco and tobacco manufactures HS 2007 code(s) 2401.10,20,30, 2402.10,20,90, 2403.10,91,99
	4 - Animal and vegetable oils, fats and waxes		
		41 42 43 - Animal and vegetable oils, fats and waxes	
			421.1 - Soya bean oil and its fractions
			421.4 - Olive oil and other oil obtained from olives

Title	Section	Division	COMCEC Group
			421.5 - Sunflower seed or safflower oil and fractions thereof
			421.6 - Maize (corn) oil and its fractions
			421.7 - Rape, colza or mustard oil and fractions thereof
			422.2 - Palm oil and its fractions
			422.3 - Coconut (copra) oil and its fractions
			Rest of 4 - Animal and vegetable oils, fats and waxes
	22 - Oil-seeds and oleaginous fruits		
		22 - Oil-seeds and oleaginous fruits	
			22 - Oil-seeds and oleaginous fruits
Fish Products – SITC Sections [03]			
	03 - Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof		
		03 - Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	
			034 036 Fish and Crustaceans (live or dead), chilled or frozen (034 - Fish, fresh (live or dead), chilled or frozen, 036 - Crustaceans,...)
			035 037 Processed Fish and Crustaceans (035 - Fish, dried, salted or in brine, 037 - Fish, crustaceans, prepared or preserved, n.e.s.)
Agricultural Raw Materials – SITC Sections [2] - Divisions [22, 27, 28]			
	2 - Crude materials, inedible, except fuels		
		2 - Crude materials, inedible, except fuels	
			21 - Hides, skins and furskins, raw
			23 - Crude rubber (including synthetic and reclaimed)
			24 - Cork and wood
			261 - Silk
			263 - Cotton
			264 - Jute and other textile bast fibres, n.e.s., raw or processed but not spun; tow and waste of these fibres (including yarn waste and garnetted stock)
			268 - Wool and other animal hair (including wool tops)
			Rest of 2 - Crude materials, inedible, except fuels

Annex 2 – Semi-Structured Interview Instrument

The purpose of this document is to provide the outline for a 20-30 minute discussion with government officials and other knowledgeable parties dealing with agri-food trade. The questions are designed to be starting points for a broader discussion, and the interviewee should be asked at the end if there is any supplementary or complementary information s/he wishes to provide. When precise quantitative data are not available, interviewees should be asked to provide “best guess” estimates based on their experience. The intended audience includes officials of relevant agencies, line ministries (trade, and agriculture), international development partners, and potentially representatives of the private sector, including peak bodies (chambers of commerce).

1. What have been the recent trends in the development of the agri-food sector, as defined by the project TORs? How do local agri-food markets connect with world markets, and in particular other OIC member countries? What does the country’s pattern of comparative advantage as expressed through trade specialization look like? How has that been changing over time? Is there any evidence of product or process upgrading in agri-food sectors, or the introduction of new products?
2. What are the perceived benefits of world agri-food markets for the country? Is integration viewed as more of an opportunity (e.g., lower prices, increased variety), or more of a threat (e.g., constraints on local producers)? How is displacement of local production by more competitive imports handled?
3. What policy measures have been implemented in recent years to develop the competitiveness of the agri-food sector? How successful have they been?
4. What has been the country’s focus on trade with other OIC member countries? Is this dealt with as a specific issue, or is it part of a more general trade development strategy? What measures have been implemented to boost international trade in agri-food products, in particular with OIC member states?
5. Do local producers make use of local or regional quality scheme labeling, such as regional labels, Halal certification, or geographical indications?
6. What are the main barriers faced by local producers looking to integrate further with world markets, including those of other OIC member countries? How do they deal with tariffs and non-tariff measures, especially product standards, including health and safety requirements? Are there any reciprocal measures in place to assist with these processes, such as mutual recognition agreements (either of standards or of testing)? What structures are in place for certification, and how does that interact with market integration?
7. What is the influence of regional trade agreements (RTAs) on agri-food exports and imports?
8. What in the interviewee’s view are the main drivers of trade with regional partner countries and OIC member countries? What can policymakers and the private sector do to help promote sustainable regional and OIC-wide trade networks in agri-food products?

Annex 3 – Consolidated List of Persons Interviewed

Bangladesh Case Study		
Name	Institution	Position
Md. Firoz Shah Alam	National Board of Revenue	Member, Customs Policy and ICT
Mohammad Ehteshamul Hoque	National Board of Revenue	First Secretary, Customs Modernization and International Affairs
Nesar Ahmed	Ministry of Commerce of Bangladesh	Director and Joint Secretary, WTO Cell
Ali Ahmed	Bangladesh Foreign Trade Institute	Chief Executive Officer
Benazir Rahman	Bangladesh Foreign Trade Institute	Assistant Research Associate
Md. Abdur Rouf	Export Promotion Bureau	Director, Commodities
Mohammad Rashidul Hasan	Bangladesh Tariff Commission	Member, Joint Secretary
Mohammad Awlad Hossain	Ministry of Commerce	Trade consultant
Nandan Kumar Banik	Office of the Chief Controller of Imports & Exports	Controller
Md. Abu Sadeq	Department of Agricultural Extension, Ministry of Agriculture of Bangladesh	Deputy Director (Import)
Md. Anwar Hossain Khan	Department of Agricultural Extension, Ministry of Agriculture of Bangladesh	Deputy Director (Export)
Md. Khairuzzaman Mozumder	USAID-Bangladesh Trade Facilitation Activity	Chief of Party
Md. Manzurul Hannan	Hortex Foundation Bangladesh	Managing Director
Mitul Kumar Saha	Hortex Foundation Bangladesh	Assistant General Manager, Marketing
Farazi Binti Ferdous	Programme and Project Development and Implementation, Food and Agriculture Organization (FAO)	National Consultant
Manzur Ahmed	the Federation of Bangladesh Chambers of Commerce and Industry (FBCCI)	Advisor
M. Abdur	Metropolitan Chamber of Commerce and Industry	Deputy Chief
A F M Fakhru Islam Munshi	Bangladesh Agro-Processors' Association (BAPA)	President
Syed Mahmudul Huq	Bangladesh Shrimp and Fish Foundation (BSFF)	Chairperson
Mahtab Uddin	PRAN-RFL Group	Chief Operating Officer
Mir Mosaddek Ali	PRAN-RFL Group	Assistant General Manager, Export)
Ershad Ahmed Bhuiyan	Taiwan Food	Managing Director
Md. Sheikh Mohammad Farid	Dhaka Customs Agent Association	President

Md. Sayeduzzaman Sayed	Sayed Enterprise	Clearing & Forwarding Agent, Import and Export, and Transport
	Burimari C&F Agents Association	President
Md. Rezaul Karim	Banglabandha C&F Agents Association	C&F Agent, Freight Forwarder and Importer-Exporter, President
	Panchagrah Chamber of Commerce & Industry	Director
Cameroon Case Study		
Name	Institution	Position
H.E. Dr TAIGA	Cameroon Ministry of Livestock, Fisheries and Animal Industries	Minister of Livestock
Atanga Felicitas	FAO	Deputy Resident Representative
Njeumi Felix	FAO	Livestock expert
Thomas Yanga	World Food Program,	Former Director of Inter- agency Partnerships Division
Amadou Nchare	Cameroon Ministry of Livestock, Fisheries and Animal Industries	Head of the Division of Studies, Planning, Cooperation and Statistics / Deputy National Coordinator of the General Census of Agriculture and Livestock
Patrick Mvondo Nna	Ministry of Agriculture and Rural Development of Cameroon	Secretary General
Bouba Aoussin	Ministry of Trade of Cameroon	Technical advisor
Tchebetchou Roger Blaise	Chamber of Commerce (Douala office)	Regional Secretary
Luther Massal	CEMAC	Regional Market Department
Dr. Atkam	Livestock production	Director
Bobbo Bakary	Agro-pastoral producers platform	President
Roger Yiwe	Lom Pangar Agropole	Planing Unit Focal Point
N Adija Temfemo	Ministry of Trade of Cameroon	Head of Division
Michel Niama	CEMAC	Trade Commissioner
Benjamin Namy	Ministry of Agriculture and Rural Development of Cameroon	Former Director of Agriculture

Annex 4 – Country Codes and Names

ISO 3 Code	Country	ISO 3 Code	Country
ABW	Aruba	EGY	Egypt, Arab Rep.
AFG	Afghanistan	ESP	Spain
ALB	Albania	EST	Estonia
ARE	United Arab Emirates	ETH	Ethiopia(excludes Eritrea)
ARG	Argentina	FIN	Finland
ARM	Armenia	FJI	Fiji
ATG	Antigua and Barbuda	FRA	France
AUS	Australia	GBR	United Kingdom
AUT	Austria	GEO	Georgia
AZE	Azerbaijan	GHA	Ghana
BDI	Burundi	GMB	Gambia, The
BEL	Belgium	GRC	Greece
BEN	Benin	GRL	Greenland
BFA	Burkina Faso	GTM	Guatemala
BGR	Bulgaria	GUY	Guyana
BHR	Bahrain	HKG	Hong Kong, China
BIH	Bosnia and Herzegovina	HND	Honduras
BLR	Belarus	HRV	Croatia
BLZ	Belize	HUN	Hungary
BMU	Bermuda	IDN	Indonesia
BOL	Bolivia	IND	India
BRA	Brazil	IRL	Ireland
BRB	Barbados	IRQ	Iraq
BRN	Brunei	ISL	Iceland
BWA	Botswana	ISR	Israel
CAF	Central African Republic	ITA	Italy
CAN	Canada	JAM	Jamaica
CHE	Switzerland	JOR	Jordan
CHL	Chile	JPN	Japan
CHN	China	KAZ	Kazakhstan
CMR	Cameroon	KGZ	Kyrgyz Republic
COL	Colombia	KHM	Cambodia
CPV	Cape Verde	KIR	Kiribati
CRI	Costa Rica	KOR	Korea, Rep.
CYP	Cyprus	KWT	Kuwait
CZE	Czech Republic	LAO	Lao PDR
DEU	Germany	LBN	Lebanon
DNK	Denmark	LCA	St. Lucia
DOM	Dominican Republic	LKA	Sri Lanka
DZA	Algeria	LTU	Lithuania
ECU	Ecuador	LUX	Luxembourg

ISO 3 Code	Country	ISO 3 Code	Country
LVA	Latvia	SGP	Singapore
MAC	Macao	SLB	Solomon Islands
MAR	Morocco	SLE	Sierra Leone
MDA	Moldova	SLV	El Salvador
MDG	Madagascar	STP	Sao Tome and Principe
MDV	Maldives	SUR	Suriname
MEX	Mexico	SVK	Slovak Republic
MKD	Macedonia, FYR	SVN	Slovenia
MLI	Mali	SWE	Sweden
MLT	Malta	SYC	Seychelles
MMR	Myanmar	TGO	Togo
MNG	Mongolia	THA	Thailand
MNT	Montenegro	TUN	Tunisia
MOZ	Mozambique	TUR	Turkey
MRT	Mauritania	TZA	Tanzania
MUS	Mauritius	UGA	Uganda
MYS	Malaysia	URY	Uruguay
NAM	Namibia	USA	United States
NER	Niger	VNM	Vietnam
NGA	Nigeria	WSM	Samoa
NLD	Netherlands	ZAF	South Africa
NOR	Norway	ZWE	Zimbabwe
NZL	New Zealand		
OAS	Other Asia, nes		
OMN	Oman		
PAK	Pakistan		
PAN	Panama		
PER	Peru		
PHL	Philippines		
PLW	Palau		
POL	Poland		
PRT	Portugal		
PRY	Paraguay		
PSE	Occ.Pal.Terr		
QAT	Qatar		
ROM	Romania		
RUS	Russian Federation		
RWA	Rwanda		
SAU	Saudi Arabia		
SEN	Senegal		
SER	Serbia, FR(Serbia/Montenegro)		

