

Grumiller, Jan; Raza, Werner G.; Staritz, Cornelia; Grohs, Hannes; Arndt, Christoph

## Research Report

# Perspectives for export-oriented industrial policy strategies for selected African countries: Case studies Côte d'Ivoire, Ghana and Tunisia

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10/2018 RESEARCH REPORT



# Perspectives for export-oriented industrial policy strategies for selected African countries: case studies Côte d'Ivoire, Ghana and Tunisia

Vienna, July 2018

Jan Grumiller, Werner Raza, Cornelia Staritz, Hannes Grohs, Christoph Arndt

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**AUSTRIAN FOUNDATION FOR  
DEVELOPMENT RESEARCH**

**Perspectives for export-oriented industrial policy strategies for  
selected African countries: case studies Côte d'Ivoire, Ghana and  
Tunisia**

**Jan Grumiller, Werner Raza, Cornelia Staritz, Hannes Grohs, Christoph Arndt**

**Final Report, 12 July 2018**

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# CONTENTS

<b>LIST OF FIGURES AND TABLES .....</b>	<b>III</b>
<b>ABBREVIATIONS .....</b>	<b>IV</b>
<b>EXECUTIVE SUMMARY .....</b>	<b>X</b>
<b>1. INTRODUCTION .....</b>	<b>1</b>
<b>2. ECONOMIC UPGRADING IN THE COCOA SECTOR IN GHANA AND CÔTE D'IVOIRE .....</b>	<b>5</b>
2.1. DEVELOPING COUNTRIES IN THE GLOBAL COCOA VALUE CHAIN .....	5
2.2. THE COCOA SECTOR IN CÔTE D'IVOIRE AND GHANA.....	10
2.2.1. Introduction to the sector in Côte d'Ivoire .....	10
2.2.2. Introduction to the sector in Ghana .....	14
2.2.3. Social and ecological sustainability issues .....	19
2.2.4. Development cooperation programs and strategies .....	21
2.2.5. Backward and forward linkages .....	22
2.2.6. Impact of the EPAs .....	23
2.3. SWOT ANALYSIS.....	26
2.3.1. Strengths .....	26
2.3.2. Weaknesses .....	27
2.3.3. Opportunities and threats.....	29
2.4. SECTOR DEVELOPMENT STRATEGIES AND POLICY RECOMMENDATIONS .....	30
2.5. CONCLUSIONS.....	36
<b>3. ECONOMIC UPGRADING IN THE MANGO SECTORS IN CÔTE D'IVOIRE AND GHANA .....</b>	<b>39</b>
3.1. THE GLOBAL MANGO VALUE CHAIN: OVERVIEW .....	39
3.2. THE MANGO SECTOR IN GHANA AND CÔTE D'IVOIRE .....	43
3.2.1. Introduction to the sector in Ghana .....	43
3.2.2. Introduction to the sector in Côte d'Ivoire .....	46
3.2.3. Major actors and linkages .....	48
3.2.4. Industrial policies and institutions.....	51
3.2.5. Development cooperation programs and strategies .....	54
3.2.6. Social and ecological sustainability issues .....	57
3.2.7. Impact of the EPAs .....	59
3.3. SWOT ANALYSIS.....	61
3.3.1. Strengths .....	61
3.3.2. Weaknesses .....	62
3.3.3. Opportunities and threats.....	63
3.4. SECTOR DEVELOPMENT STRATEGIES AND POLICY RECOMMENDATIONS .....	65
3.5. CONCLUSIONS.....	74
<b>4. ECONOMIC UPGRADING IN THE TUNISIAN TEXTILE AND APPAREL INDUSTRY.....</b>	<b>76</b>
4.1. GLOBAL AND EUROPEAN TEXTILE AND APPAREL VALUE CHAINS .....	76
4.2. THE TEXTILE AND APPAREL SECTOR IN TUNISIA .....	78
4.2.1. Development of the Tunisian apparel export industry.....	78
4.2.2. Overview of the Tunisian apparel export industry.....	83
4.2.3. Challenges in the context of the Arab spring .....	84
4.2.4. Main upgrading dimensions and linkages.....	86
4.2.5. Social and ecological sustainability issues .....	87

4.2.6. Industrial policies and institutions .....	88
4.2.7. Impact of the DCFTA .....	90
4.3. SWOT ANALYSIS.....	91
4.3.1. Strengths .....	91
4.3.2. Weaknesses .....	91
4.3.3. Opportunities .....	92
4.3.4. Threats .....	92
4.4. SECTOR DEVELOPMENT STRATEGIES AND POLICY RECOMMENDATIONS .....	93
4.5. CONCLUSIONS.....	98
<b>5. ECONOMIC UPGRADING IN THE TUNISIAN OLIVE OIL SECTOR.....</b>	<b>101</b>
5.1. THE GLOBAL OLIVE OIL VALUE CHAIN .....	101
5.2. THE OLIVE OIL SECTOR IN TUNISIA .....	104
5.2.1. Industrial policy and institutions.....	107
5.2.2. Social and ecological sustainability issues .....	108
5.2.3. Development cooperation programs and strategies .....	109
5.2.4. Backward and forward linkages .....	110
5.2.5. Impact of the DCFTA .....	110
5.3. SWOT ANALYSIS.....	113
5.3.1. Strengths .....	113
5.3.2. Weaknesses .....	114
5.3.3. Opportunities and threats.....	115
5.4. SECTOR DEVELOPMENT STRATEGIES AND POLICY RECOMMENDATIONS .....	117
5.5. CONCLUSIONS.....	121
<b>6. COMPARATIVE CONCLUSIONS .....</b>	<b>122</b>
<b>REFERENCES .....</b>	<b>126</b>
<b>ANNEX I – INTERVIEWS .....</b>	<b>135</b>
<b>ANNEX II – MANGO.....</b>	<b>139</b>

## LIST OF FIGURES AND TABLES

Figure 1:	Cocoa prices and production (1960/61-2016/17).....	10
Figure 2:	Cocoa bean production and grinding in Côte d'Ivoire (1972/73-2016/17) .....	11
Figure 3:	Cocoa bean production and grinding in Ghana (1972/73-2016/17).....	15
Figure 4:	Ghanaian exports of cocoa products to the EU (2000-2016, million EUR).....	25
Figure 5:	Ivorian exports of cocoa products to the EU (2000-2016, million EUR) .....	26
Figure 6:	Growth of the Ivorian mango area .....	47
Figure 7:	EU exports of textile yarn and fabrics (SITC 65) to North Africa, US\$ billion .....	78
Figure 8:	Tunisia's exports of apparel (HS61+HS62), US\$ billion.....	79
Figure 9:	Key export markets for Tunisian apparel, % in total Tunisian exports to the EU .....	79
Figure 10:	Unit Value of Tunisian Top exported products to the EU, EUR/kg .....	80
Figure 11:	Share of top products exported from selected countries, 2015, HS 6 digits .....	81
Figure 12:	Tunisian imports of textile yarn and fabrics (SITC 65), % .....	82
Figure 13:	Total apparel imports of Italy, France, and Germany, US\$ billion .....	83
Figure 14:	Olive oil production volume over time (thousand tons) .....	102
Figure 15:	Production of olive oil in Tunisia (1990-2016, thousand tons).....	106
Figure 16:	Exports of olive oil and bottled and branded olive oil (thousand tons).....	107
Figure 17:	EU imports of olive oil by value (2005-2016, million EUR (lhs)) .....	111
Figure 18:	EU imports of olive oil by volume (2005-2016, million tons).....	111
Table 1:	Cocoa beans production worldwide (volume, thousand tons) .....	6
Table 2:	Cocoa grindings worldwide (volume, thousand tons).....	7
Table 3:	Growth of Sub-Saharan African imports of cocoa containing food products (2000-2016) .....	9
Table 4:	Grinding capacity in Côte d'Ivoire (2016/17).....	13
Table 5:	Grinding capacity in Ghana (2016/17) .....	17
Table 6:	Tariff effects of the EPA in the cocoa sector.....	24
Table 7:	Volumes of imported mangoes (thousand tons) .....	40
Table 8:	Top Ten Exporters into EU 2016 .....	40
Table 9:	Comparison of the mango sector of Ghana and Côte d'Ivoire .....	43
Table 10:	Agricultural exports from Ghana 2016 .....	44
Table 11:	Five most important offtakers of mangoes from small-scale farms 2017 .....	50
Table 12:	Tariff rates to access the European market (with and without EPA) .....	60
Table 13:	Top 15 apparel importer countries to the EU-15.....	77
Table 14:	Top 10 EU-28 apparel imports from Tunisia in 2015 .....	80
Table 15:	Global olive oil production (crop year 2015/16) and exports (2015/16).....	102
Table 16:	Global olive oil consumption (crop year 2015/16) and imports (2015/16).....	103

## ABBREVIATIONS

1D1F	One-District-One-Factory (Ghana)
2QC	Programme Quantité-Qualité-Croissance (Côte d'Ivoire)
ACET	African Center for Economic Transformation
ACP	African, Caribbean and Pacific
ADM	Archer Daniels Midland (International Company)
AEL	Africa Express Line (British Shipping Company)
AfDB	African Development Bank
AFTP	Tunisian Agency for Technical/Vocational Formation
ANADER	National Agency for Rural Development (Côte d'Ivoire)
APEX-CI	Export Promotion Agency (Côte d'Ivoire)
API	Agency for the Promotion of Industry and Innovation (Tunisia)
AREXMA	Association Régionale des Producteurs et Exportateurs de Mangues de République Côte d'Ivoire
B2B	Business to Business
BBS	Bacterial Blackspot Disease
BCS	Business Analysis Certifications
BRC	British Retail Consortium
CAISTAB	Caisse de Stabilisation (Côte d'Ivoire)
CBI	Centre for the Promotion of Imports from Developing Countries (Netherlands)
CCA	Conseil du Coton et de l'Ancarde / Cotton and Cashew Board (Côte d'Ivoire)
CCC	Conseil du Café-Cacao (Côte d'Ivoire)
CCI	Chamber of Commerce and Industry (Côte d'Ivoire)
CEPEX	Centre de Promotion des Exportations (Tunisia)
CEPICI	Centre de Promotion des Investissements en Côte d'Ivoire
CET	Common External Tariff
CETA	Comprehensive Economic and Trade Agreement
CETEX	Centre Technique du Textile (Tunisia)
CH	Switzerland
CHO	Conditionnement des huiles d'olive (Company Tunisia)
CI	Côte d'Ivoire
CMC	Cocoa Marketing Company (Ghana)
CMT	Cut-Make-Trim
CNRA	National Centre for Crop Research (Côte d'Ivoire)



COCOBOD	Ghana Cocoa Board
COCOSHE	Cocoa, Coffee and Sheanut Farmers Association
COFRUIBO	Coopérative des Fruits de Bonoua (Côte d'Ivoire)
COLEACP	Europe-Africa-Caribbean-Pacific Liaison Committee
COMAKO	Coopérative de Mangue Kgo (Côte d'Ivoire)
CONDICAF	Conditionnement de Cafe et de Cacao (Company Côte d'Ivoire)
COPABO	Coopérative des producteurs agricoles de Bondoukou (Côte d'Ivoire)
COPAL	L'Alliance des Pays Producteurs de Cacao (Côte d'Ivoire)
CPC	Cocoa Processing Company (Ghana)
CTAA	Tunisian Technical Center for Agri-Food
DC	Development Cooperation
DCFTA	Deep and Comprehensive Free Trade Agreement
DFQF	Duty-Free-Quota-Free
DPP	Development Partnerships with private sector companies
DPVCQ	Directorate of Plant Protection, Control and Quarantine (Côte d'Ivoire)
DRC	Democratic Republic of Congo
DUS	Droit Unique de Sortie/Single Export Tax
EAC	East African Community
EBA	Everything But Arms
EBRD	European Bank for Reconstruction and Development
EC	European Commission
ECOWAS	Economic Community of West African States
EDAIF	Export Development and Agricultural Investment Fund (Ghana)
EMQAP	Export Marketing and Quality Awareness Project (Ghana)
EOLIS	Logistics Service Company (Côte d'Ivoire)
EPAs	Economic Partnership Agreements
EPZ	Export Processing Zone
ESA	Eastern and Southern Africa
EU	European Union
EUR	Euro
EUROPHYT	European Union Notification for Plant Health Interceptions
FAGE	Federation of Association of Ghanaian Exporters
FAMEX	Fonds d'Accès aux Marchés d'Exportation (Tunisia)
FAO	Food and Agriculture Organization of the UN

FBO	Farmer Based Organization
FCFA	Franc de la Communauté Financière d'Afrique
FDI	Foreign Direct Investment
FIRCA	Interprofessional Fund for Agricultural Development (Côte d'Ivoire)
FOB	Free on Board
FOPRODEX	Fonds de Promotion des Exportation (Tunisia)
FOPROHOC	Fonds de promotion de l'huile d'olive conditionnée (Tunisia)
FPMAG	Fruit Processors and Marketers Association of Ghana
FR	France
FTA	Free Trade Agreement
FTTH	Tunisian Federation of Textiles and Clothing
G.A.P.	Good Agricultural Practice
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GEPA	Ghanaian Export Promotion Agency
GFZB	Ghana Free Zones Board
GH	Ghana
GIPC	Ghana Investment Promotion Centre
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GRASP	GlobalG.A.P. Risk Assessment on Social Practice
GSDGDA	Ghana Shared Growth and Development Agenda
GSP	Generalized System of Preferences
GSS	Ghana Statistical Service
GVC	Global Value Chain
HEII	Horticultural Export Industry Initiative (Ghana)
HS	Harmonized System
ICC	Ivoire Compagnie de Cacao (Company Côte d'Ivoire)
ICCO	International Cocoa Organization
ICE	International Commodity Exchange in New York
ICP	Ivory Cocoa Products (Company Côte d'Ivoire)
iEPA	Interim Economic Partnership Agreement
IFS	International Featured Standards
ILO	International Labor Organization
IMF	International Monetary Funds
INS	National Institute of Statistics (Tunisia)

IOC	International Olive Council
IQF	individually quick-frozen
ISO	International Organization for Standardization
ITC	International Trade Centre
ITFC	Integrated Tamale Fruit Company (Ghana)
JICA	Japan International Cooperation Agency
LBC	Licensed Buying Company (Ghana)
LDC	Least Developed Country
M&A	Merger and Acquisitions
MADB	Market Access Database
MAR	Market Access Regulation
MCC	US Millennium Challenge Corporation
MENA	Middle East and Northern Africa
METASIP	Medium Term Agriculture Sector Investment Plan (Ghana)
MFA	Multi-Fiber Arrangement
MFN	Most Favored Nation
MIC	Ministry of Industry and Commerce (Tunisia)
MICAO	Les Moulins Ivoiriens du Cacao (Company Côte d'Ivoire)
MiDA	Millennium Development Authority of the Republic of Ghana
MIM	Ministère de l'Industrie et des Mines (Côte d'Ivoire)
MNC	Multinational Company
MOAP	Market Oriented Agriculture Programme
MoFA	Ministry of Agriculture (Ghana)
NDC	National Democratic Congress (Ghana)
NEIP	National Entrepreneurship and Innovation Plan (Ghana)
NFC	Not From Concentrate
NGO	Non-Governmental Organization
NHTF	National Horticultural Taskforce (Ghana)
NPP	New Patriotic Party (Ghana)
OBAMCI	Organisation des Producteurs et Exportateurs de Bananes, Ananas, Mangues et autres fruits de Côte d'Ivoire
OBM	Original Brand Manufacturing
OCAB	Organisation Centrale des Producteurs-Exportateurs d'Ananas, Bananes et Mangues (Côte d'Ivoire)
OCPV	Food Commodities Marketing Office (Côte d'Ivoire)
ODM	Original Design Manufacturing

OECD	Organization for Economic Co-operation and Development
ONAGRI	Observatoire National de l'Agriculture (Tunisia)
ONH	Office National de l'Huile (Tunisia)
OPT	Outward-Processing Trade
OTE	Observatoire Tunisien de l'Economie
PACKTEC	Technical Center for Packaging and Conditioning / Centre Technique de l'Emballage et du Conditionnement (Tunisia)
PCC	Perishable Cargo Centre (Ghana)
PCSD	Policy Coherence for Sustainable Development
PNDC	Provisional National Defence Council (Ghana)
PNIA	National Agricultural Investment Programme (Côte d'Ivoire)
PPP	Public-Private Partnerships
PPPP	Platform for Public-Private Partnerships
PPRC	Producer Price Review Committee (Ghana)
PwC	PricewaterhouseCoopers
R&D	Research and Development
RoOs	Rules of Origin
SACO	Société Africaine de Cacao (Company Côte d'Ivoire)
SADC	South African Development Community
SAP	Structural Adjustment Program
SARTEX	Société des Arts Textiles (Company Tunisia)
SITC	Standard International Trade Classification
SITEX	Société Industrielle de Textiles (Company Tunisia)
SMEs	Small and Medium Enterprises
SNG	Shea Network Ghana
SPEM	Société de Production et Exportation de Mangues (Côte d'Ivoire)
SPS	Sanitary and Phytosanitary
SSA	Sub-Saharan Africa
SSNIT	Social Security and National Insurance Trust (Ghana)
T&A	Textile and Apparel
TBT	Technical Barriers to Trade
TIPCEE	Trade and Investment Program for Competitive Export (Ghana)
TTIP	Transatlantic Trade and Investment Partnership
TUN	Tunisia
TÜV	Technischer Überwachungsverein

UGTT	Tunisian General Labor Union
UK	United Kingdom
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNICAO	Union Ivoirienne de Traitement de Cacao (Company Côte d'Ivoire)
UN-REDD	UN Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation
US	United States
USA	United States of America
USAID	United States Agency for International Development
USD	US Dollar
UTICA	Tunisian Confederation of Industry, Trade and Handicrafts
WAAP	West Africa Agricultural Productivity Programme
WAMCO	West African Mills Company
WATIH	West Africa Trade and Investment Hub
WCF	World Cocoa Foundation
WITS	World Integrated Trade Solutions
WTEx	World's Top Exports
WTO	World Trade Organization

## EXECUTIVE SUMMARY

The European Union (EU) has recently concluded or is currently in the process of negotiating a number of bilateral free trade agreements with developing as well as emerging economies. Negotiations include *inter alia* the Mercosur countries, Vietnam, as well as the African countries of the African, Caribbean and Pacific (ACP) group and Tunisia, where negotiations were formally launched in October 2015 and are still on-going.

With the notable exception of the Economic Partnership Agreements (EPAs) with the ACP countries, the new EU trade agreements are so-called 'new generation' bilateral trade agreements that are deliberately designed as 'deep and comprehensive'. In other words, while also targeting remaining traditional trade barriers, such as tariffs and quotas, above all they aim at tackling other issues that are deemed relevant for trade. Amongst these figure investment liberalization and protection, intellectual property rights, public procurement, competition law and state aid, as well as non-tariff-measures. In addition, it is emphasized by the EU that sustainable development aspects, in particular as they relate to human rights, labor standards as well as environmental aspects are also part of its new approach to trade policy. Thus, trade liberalization in the extended definition of the new EU trade agenda must promote sustainable development both in the EU and the partner countries, i.e. economic growth that is socially inclusive and respects ecological boundaries. Furthermore, in the case of trade negotiations with developing countries, the agreements should also take into account the specific situation and needs of these latter countries, so as to be complementary and supportive of their development priorities. In other words, adherence to the principle of policy coherence for sustainable development (PCSD), as recently defined by the UN Agenda 2030 for Sustainable Development and subsequently adopted by the new European Consensus on Development, is required.

The objective of the research project, of which this report is a part of, precisely consists in assessing the likely impacts of new EU trade agreements on sustainable development in partner countries in the developing world. Upon this assessment, policy recommendations for supporting the development-friendly implementation of these agreements shall be proposed. The focus of the previous two reports within the general framework of the project lay on the assessment of the effects of trade liberalization. A first report scrutinized the trade impacts of the regional EPAs on the economies of selected African partner countries (Ghana, Uganda, Mozambique) and the regional communities they form part of (i.e. ECOWAS, EAC and SADC), including sector case studies for specific sectors considered important to these economies, in particular specific food and agricultural sectors as well as textiles & apparel. A second report discussed the likely trade impacts of two EU bilateral trade agreements recently concluded or still under negotiations with two lower middle-income economies, namely Vietnam and Tunisia. Again both the macroeconomic effects as well as sector impacts were studied, the latter focusing on textile and apparel as well as particular food products for both economies.

Since a particular concern of the overall project has to do with the longer-term impacts of trade liberalization on sustainable economic development and the support EU development policy can offer in promoting positive longer-term effects of EU trade agreements for partner countries, in this third report, the focus is directed towards discussing the challenges of export promotion in selected partner countries and sectors. Given commitments of the African partner countries under the trade agreements with the EU to liberalize imports and the traditional balance of payments constraints most developing countries suffer from, it will be of particular importance for African countries to increase their exports subsequent to trade liberalization. In this respect, both the extent

and the timing of the structural change promoted by trade liberalization matter to Developing Countries (DCs). For DCs it should be typically assumed that their imports react more quickly to changes in their trade regime than their exports. This has basically to do with the different capacities and capabilities of foreign and domestic export industries to exploit changes in market conditions. Development-friendly implementation of trade liberalization must thus avoid premature opening of sensitive sectors of DCs' economies in the short run, whereas it should pro-actively promote the use of the export potential that Free Trade Agreements (FTAs) offer in the middle and long run. Given the prevailing narrow export specialization in unprocessed products with low levels of value addition of most African DCs, it is our contention that it will be necessary to highlight opportunities for export promotion that do not primarily focus on increasing export volumes of commodities and unprocessed products, but instead focus on increasing international sales of processed products and services in order both to upgrade and diversify exports and production structures.

Hence, based on the countries which already served as case studies in the two previous reports of this project, we have in this report analyzed four export sectors in three countries, namely (i) the cocoa and mango sectors in Côte d'Ivoire and Ghana, and (ii) the olive oil and the textile and apparel sectors in Tunisia. With the exception of the mango sector, the other sectors – cocoa, olive oil and textile and apparel – are well-established sectors in the respective countries with however only more recent attempts to functionally upgrade into processing for the agriculture-based cocoa and olive oil sectors. In the textile and apparel sector in Tunisia there are also important consolidation processes under way in the context of increased global competition and political instability in the aftermath of the Arab Spring. The promotion of the non-traditional mango sectors in Côte d'Ivoire and Ghana benefited from strong demand growth in advanced and increasingly also emerging economies as well as from the outsourcing of labor-intensive processing activities to producer countries in the context of a buyer-driven global value chain. All sector case studies are located in African countries, which figure among the prioritized partner countries for EU development cooperation, and not least because the recent migration crisis has reinvigorated EU interest in promoting their economic development.

The discussion of the four case studies in the report follows a given sequence of analytical steps. We start by (1) providing an overview of the global value chain (GVC) that governs the international division of labor and upgrading opportunities and constraints in the production and marketing of the sector under consideration. Next, we go on to (2) discuss the national value chain for each sector. This includes a discussion of the productive structure, the institutional system responsible for designing and implementing industrial policies, the social and ecological aspects of production, the role of development cooperation in the sector, the existing linkages between the sector and the overall local economy, and finally the likely impact of the EU trade agreement on sector development. Section (3) conducts a SWOT analysis for each sector. Thus, the strengths and weaknesses of the sector as well as the opportunities and threats for each sector with respect to its further development are systematically analyzed. This corroborates the strategic considerations and policy recommendations for sector development, which are proposed in section (4) for each of the four sectors. In the following, we provide short summaries of our findings for each of the four scrutinized sectors.



By way of supplying 63% of the global production of cocoa beans, the **cocoa sector** is of central importance for the economies of both **Côte d'Ivoire and Ghana**. In both countries, the sector is tightly regulated. The cocoa sectors are regulated by a marketing board (COCOBOD and CCC) with minimum price systems, stabilization funds and the provision of different services in order to improve the livelihood of smallholders. Due to its strong quality control system, Ghana produces high quality cocoa beans that fetch a premium on the international market. The cocoa production system in Côte d'Ivoire has more pronounced weaknesses in terms of the quality of the beans as well as social (esp. child labor) and environmental issues (esp. deforestation). Future policies targeting cocoa production should particularly foster productivity and quality as well as strengthen existing institutions to mitigate price and income volatility of smallholders. Bilateral cooperation could furthermore increase the export price-setting power of Côte d'Ivoire and Ghana.

Besides cocoa production, both sectors are examples of successful functional upgrading into more capital intensive albeit still low-value added activities. The growth of the grinding sectors was furthered by tax- and price-incentives, changing sector regulations and GVC dynamics, in particular shifting strategies of lead firms towards origin grinding. The further promotion of origin grinding can be beneficial. The longer-term benefits and costs however need to be carefully monitored and evaluated in light of limited linkages and employment creation of the grinding sector and the high costs of incentives particularly in the case of Ghana, where the capital intensive grinding sector would be uncompetitive without substantial financial incentives given the high costs of electricity.

The development of a grinding sector was however key for the recent expansion of chocolate and cocoa confectionary manufacturing in Côte d'Ivoire and Ghana. Particularly, the substantial increase of local and regional chocolate consumption, albeit from a low level, has opened a window of opportunity in the promotion of origin manufacturing. Chocolate manufacturing (incl. marketing and branding) has important advantages relative to grinding due to broader linkage potentials as well as a higher share of value-added and lower price volatility relative to bean and intermediate product exports. Though constrained by the growth of local and regional demand for chocolate and cocoa confectionary products, the further development of local chocolate manufacturing in the near future will depend on functional upgrading of Ivorian and Ghanaian grinders, who should thus be targeted via industrial policies. In contrast to regional markets, large-scale exportation of ready-to-eat chocolate products to key consumer markets including the EU is economically unviable. Exports of niche chocolate products with own brands to key consumer and emerging markets could however be promoted.

The growth of the non-traditional **mango sectors in Côte d'Ivoire and Ghana** are successful examples of improving the livelihood of farmers in the context of agricultural-based export diversification strategies as well as of upgrading to processing to diversify export products and increase local value addition. Côte d'Ivoire's key strength is exporting fresh mangoes to the EU and increasingly the Middle East, while investments in processing capacities particularly in fruit drying have recently expanded. Ghana has struggled to compete in exporting fresh produce, but has its key strength in exporting processed mangoes (esp. fresh-cut and dried) to the EU, given its well-developed processing sector.



The economic, social and ecological benefits (e.g. poverty reduction, employment creation, ecological barriers against the effects of climate change and more as discussed in chapter 3) of the mango sector justify strategic industrial policies to support the expansion, productivity and quality of mango production as well as the development of further processing activities that go beyond cutting or drying (e.g. mango juice, mango bars or mango jam) for exports, particularly also regional markets, and the domestic market. The policy coherence of the industrial policy design needs to be fostered and industrial policies should particularly support the country specific strengths (exports of fresh produce in Côte d'Ivoire and processing in Ghana) as well as support market diversification. The mango sector also has certain opportunities for the creation of backward linkages, in particular bottling, sugar and cardboard industry.

From the European perspective, **Tunisia** is an important partner, given its successful democratic transition since 2011 and its central location in the North Africa region. The country, however, is facing serious economic difficulties especially in terms of rising domestic costs and growing competition in its traditional export markets. Reaping maximum benefits from the free trade agreement currently negotiated between the EU and Tunisia will thus be of central importance for stabilizing the struggling Tunisian economy and promoting employment for the large number of young workers.

Tunisia has a long history and tradition in the **textiles and apparel** industry. The sector has grown in the second half of the 20<sup>th</sup> century as a result of national industrial strategies on the one hand and important shifts in textile and apparel global and regional value chains on the other hand. Tunisia emerged as an important supplier to the EU benefitting from proximity to and from preferential market access to the European market. Starting in the mid-2000s, however, the industry began to feel the pressure of growing Asian competition in the European market and a downward trend in the market share of Tunisia began. These difficulties were intensified following the political revolution the country witnessed in 2011 as economic and social pressures led to growing production costs and to more frequent labor unrest in the industry.

Providing support for the textile and apparel industry could be an important way to help reinvigorate the economy. EU development cooperation could step up its support in order to help develop an industrial strategy for the sector. The latter should include four essential elements: it should (i) promote functional upgrading to free on board (FOB) production as well as extend and improve design and branding capacities for larger firms, while leveraging the existing subcontracting system between larger and smaller firms for smaller firms' upgrading processes in the industry; (ii) support the development of a national accessories and textile industry, and (iii) improve access to capital, both for working and investment capital, as this constitutes an important barrier facing the industry. Finally, (iv) export and product market diversification as well as the promotion of regional value chains in the North-African region (Egypt, Morocco) should be promoted.

**Tunisia** also has a long history in **olive oil production** and well-established capacities and capabilities in almost all segments of the value chain. The sector however suffers from certain weaknesses, in particular with regard to low productivity and high volatility levels in olive production, the weak organization and coordination among stakeholders, the limited access to finance as well as constraints on further product and functional upgrading to higher value-added exports and on end market diversification. The key challenge for the Tunisian olive oil sector is its subordinated integration into GVCs, particularly in the context of an increasingly buyer-driven value chain, in which lead firms in the EU focus on high value-added activities such as bottling and branding and thus tend to buy and import olive oil from Tunisia only in bulk.

However, the potential for product and functional upgrading in Tunisia has recently improved with increasing demand from non-traditional markets as well as for high-quality niche products. In this context, many Tunisian exporters of bulk olive oil successfully increased their share of bottled and branded exports to non-traditional markets such as the US and Canada. The EU nonetheless remains the most important export market for Tunisian olive oil. Exports of bottled and branded olive oil to the EU is structurally constrained because of high competition from EU producers and restricted market access under the EU quota system. Apart from the key requirement of expanding or of ideally abolishing the quota system for Tunisian olive oil in the ongoing DCFTA negotiations, Tunisia could also request the protection of geographic indications and a change in the labelling requirements for olive oil manufacturers in the EU, obliging them to provide explicit information on the origin of the olive oil used. EU development cooperation policies should support sector development in three areas: (i) increasing the productivity of olive production via the promotion of farmer based organizations, extension services and investment in modern irrigation systems; (ii) promoting the coordination among stakeholders in the national olive oil value chain; and (iii) increasing the share of bottled and branded exports by way of further export diversification into non-traditional markets and coordinated marketing strategies. In this context, strengthening technical and marketing capacities and capabilities of companies and public agencies is crucial.

Apart from the sector-specific recommendations for each of the four scrutinized sectors, we recommend EU development cooperation to concentrate also on a number of **horizontal issues** that deserve particular attention in the context of export promotion policies in DCs prioritizing upgrading and diversification strategies. These include: (i) encouraging governments and key private sector stakeholders to develop a longer-term vision for upgrading key export sectors; (ii) supporting the building-up of capacities and capabilities for strategic market research and industrial planning for key export sectors in partner countries; (iii) supporting a strategy for market diversification that in addition to the EU market actively pursues possibilities for exports to regional markets and other OECD and emerging markets as well as focuses on the domestic market; (iv) supporting domestic entrepreneurship and the build-up of domestically embedded enterprises in export-oriented sectors, in particular by way of supporting high quality education and vocational training, research and development, financing facilities for long-term and high risk productive investments, as well as linkages between foreign and local firms to ensure technology and knowledge transfer and spillovers; and, finally, (v) supporting the social and environmental sustainability of export-oriented industries through industry certification processes, compliance with minimum international social and environmental standards, and targeted programs to establish good management practices as well as a culture of fair industrial relations.

# 1. INTRODUCTION

The European Union (EU) has recently concluded or is currently in the process of negotiating a number of bilateral free trade agreements with both industrialized countries, e.g. Canada and Japan, and developing as well as emerging economies. Negotiations with the latter group include *inter alia* the Mercosur countries, Vietnam, as well as the African countries of the African, Caribbean and Pacific (ACP) group and Tunisia. Negotiations on the EU-Tunisia Deep and Comprehensive Free Trade Agreement (DCFTA) were launched in 2015 and are still ongoing.

With the notable exception of the Economic Partnership Agreements (EPAs) with the ACP countries, the new EU trade agreements are so-called ‘new generation’ bilateral trade agreements that are deliberately designed as ‘deep and comprehensive’ (EC 2015). In other words, while also targeting remaining traditional trade barriers, such as tariffs and quotas, above all they aim at tackling other issues that are deemed relevant for trade. Amongst these figure investment liberalization and protection, intellectual property rights, public procurement, competition law and state aid, as well as non-tariff-measures. The latter include Sanitary and Phytosanitary (SPS)-standards, technical barriers to trade, but also sector regulation and administrative procedures. In addition, it is emphasized by the EU that sustainable development aspects, in particular as they relate to human rights, labor standards as well as environmental aspects also need to be integrated into modern trade policy.

The new EU approach to trade policy has however not remained uncontested. In relation to the now suspended negotiations on a Free Trade Agreement (FTA) between the EU and the US, the so-called Transatlantic Trade and Investment Partnership (TTIP), as well as to the negotiations between the EU and Canada on the Comprehensive Economic and Trade Agreement (CETA), various stakeholders from EU civil society have both criticized the negotiation process and also voiced concerns with respect to the substantive provisions of the new generation agreements. As is also stressed by the European Commission (EC), trade liberalization in the extended definition of the new EU trade agenda must promote sustainable development both in the EU and the partner countries, i.e. economic growth that is socially inclusive and respects ecological boundaries. Furthermore, in the case of trade negotiations with developing countries, the agreements should also take into account the specific situation and needs of these latter countries, so as to be complementary and supportive of their development priorities. In other words, adherence to the principle of policy coherence for sustainable development (PCSD), as recently defined by the UN Agenda 2030 for Sustainable Development and subsequently adopted by the new European Consensus on Development, is required. New generation FTAs are therefore primarily to be assessed against this yardstick, which is the approach adopted in this project in general and in this report in particular.

The focus of the previous two reports within the general framework of this project lay on the assessment of the effects of trade liberalization.<sup>1</sup> A first report scrutinized the trade impacts of the regional EPA agreements on the economies of selected African partner

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<sup>1</sup> Grumiller/Raza/Staritz/Tröster/von Arnim (2018): The economic and social effects of the Economic Partnership Agreements on selected African countries, ÖFSE Research Report 7, Austrian Foundation for Development Research, Vienna.  
Grumiller/Raza/Staritz/Tröster/von Arnim/Grohs (2018): The economic and social effects of the EU Free Trade Agreements with Vietnam, ÖFSE Research Report 8, Austrian Foundation for Development Research, Vienna.  
Grumiller/Raza/Staritz/Tröster/von Arnim/Grohs (2018): The economic and social effects of the EU Free Trade Agreements (DCFTA) with Tunisia, ÖFSE Research Report 9, Austrian Foundation for Development Research, Vienna.

countries (Ghana, Uganda, Mozambique) and the regional communities they form part of, i.e. ECOWAS, EAC and SADC, including sector case studies for specific sectors considered important to these economies, in particular specific food and agricultural sectors as well as textiles & apparel. A second report discussed the likely trade impacts of two EU bilateral trade agreements recently concluded or still under negotiations with two lower middle-income economies, namely Vietnam and Tunisia. Again, both the macroeconomic effects as well sector impacts were studied, the latter focusing on textile and apparel for both economies as well as seafood for Vietnam and olive oil for the case of Tunisia.

Since a particular concern of the overall project has to do with the impacts of trade liberalization on sustainable economic development and the support EU development policy can offer in promoting positive longer-term effects of EU trade agreements for partner countries, in this third report, the focus is directed towards discussing the challenges of export promotion in selected partner countries and sectors. Hence, based on the countries which already served as case studies in the two previous reports of this project, we have in this report analyzed four export sectors in three countries, namely (i) the cocoa and mango sectors in Côte d'Ivoire and Ghana, and (ii) the olive oil and the textile and apparel sectors in Tunisia. With the exception of the mango sector, the other sectors – cocoa, olive oil and textile and apparel – are well-established sectors in the respective countries with however only more recent attempts to functionally upgrade into processing for the agriculture-based cocoa and olive oil sectors as well as with important consolidation processes under way in the context of increased global competition and political instability in the context of the Arab Spring in the textile and apparel sector in Tunisia. Mango exports have only recently become a thriving export sector in Côte d'Ivoire and Ghana and have profited from strong demand growth in advanced and increasingly also emerging countries. All sector case studies are located in African countries, which figure among the prioritized partner countries for EU development cooperation. Last but not least has the recent migration crisis reinvigorated EU interest in promoting the economic development of African countries.

Trade agreements between advanced and developing countries like those negotiated by the European Union and the ACP countries as well as with Tunisia, respectively, pose both opportunities and threats to the partner countries involved. While results from model-based economic impact assessments typically indicate that the macroeconomic effects of such agreements tend to be small, including our own estimations included in the two previous reports of this project, the long-term effects depend on the structural change triggered by such agreements. It is a well-known contention in the development economics literature that the marked differences in economic capacities and capabilities between advanced and developing economies pose particular problems that need to be dealt with, if longer-term impediments to late economic development are to be avoided. A key issue has to do with the fact that the economic growth of Developing Countries (DCs) is constrained by their balance of payments (Thirlwall 2013). Since DCs do suffer from structural dependencies both in terms of necessities for production, e.g. technology imports and consumption, e.g. fuel and food imports, growth dynamics depend on the availability of foreign exchange for funding structurally necessary imports. Though some of the conventional arguments in favor of trade liberalization apply in principle to DCs as well, e.g. a larger variety of goods and services available to consumers, or more competition leading to cheaper input prices for domestic industries, it is of particular importance for the latter to increase their net exports subsequent to trade liberalization in order to alleviate the pressure on their foreign exchange income and balance of payments. Further, competition from increased imports can be particularly harmful for sensitive

sectors such as agriculture and food provision as well as industrial sectors that are important for structural change in DCs. Their displacement would lead to highly problematic developmental and social impacts.

In this respect, both the extent and the timing of the structural change promoted by trade liberalization matter to DCs. For DCs it should be typically assumed that imports react more quickly to changes in its trade regime than its exports. Basically this has to do with the different capacities and capabilities of foreign and domestic export industries to exploit changes in market conditions. Development-friendly implementation of trade liberalization must thus avoid premature opening of sensitive sectors of a DC's economy in the short run, whereas it should pro-actively promote the export orientation of its economy in the middle- and long run.

However, the crucial question in this respect is precisely, on which sectors and on which products and services export promotion should focus. Obviously, this has been a key question in the whole history of development economics, as it relates to the source and nature of comparative advantage. Though the debate has proved controversial, in the light of the more recent literature we deem it plausible to consider comparative advantage to be less determined by natural endowments, but to be essentially produced by economic policies, in particular by industrial and technological policies, and more generally by introducing social institutions that promote learning and science. Under such circumstances, through a cumulative process of skills and capability accumulation, industrial development will lead to a process of structural transformation of the economy, that will shift economic activities into higher-value added and technologically more advanced forms of production (see e.g. Cimoli/Dosi/Stiglitz 2009, Reinert 2009). By way of such a process, static comparative advantage will gradually be transformed into dynamic competitive advantage.

This said, we nevertheless think that in the case of developing countries with low levels of industrial development, given endowments with factors of production and thus static comparative advantage has a role to play. Based on the new structural economics approach to industrial policy (see e.g. Lin 2012; Stiglitz/Lin 2013), we argue in this report that strategies for upgrading and export diversification in DCs should be focused on those sectors, where a country already enjoys a comparative advantage, which however has not been exploited to its full potential. In the case of African developing countries, this is mostly the case in commodities and unprocessed agricultural products as well as in labor-intensive manufacturing. This explains our choice of sectors in this report, namely cocoa, mangos, olive oil and textile and apparel. Given the prevailing narrow export specialization in unprocessed products with low levels of value addition, our motivation is however to highlight opportunities for export promotion that do not primarily focus on increasing export volumes, but focus on increasing international sales of processed products and services in order both to upgrade and diversify the export potential of the scrutinized economies.

In consequence, the discussion of the four case studies in the report follows a given sequence of analytical steps. In section X.1, we provide an introductory overview of the global value chain that governs the international division of labor and upgrading opportunities and constraints in the production and marketing of the sector under consideration. In section X.2, we go on to discuss the national value chain for each sector. This includes a discussion of the productive structure, the institutional system responsible for designing and implementing industrial policies, the social and ecological aspects of production, the role of development cooperation in the sector, the existing linkages between the sector and the overall local economy, and finally the likely impact of the EU trade agreement on sector development. Section X.3 provides a SWOT analysis for each



sector. Thus, the strengths and weaknesses of the sector, as well as the opportunities and threats for each sector with respect to its further development are systematically analyzed. This corroborates the strategic considerations and policy recommendations for sector development, which are proposed in section X.4. Section X.5 summarizes key findings and policy recommendations for each case study. The discussion of case studies starts with the cocoa (section 2) and mango sectors (section 3) in Côte d'Ivoire and Ghana, to be followed by the textile and apparel (section 4) and olive oil sectors (section 5) in Tunisia. After discussing the four case studies, a final section with comparative conclusions highlights key lessons learnt and proposes programmatic lines of action for EU development cooperation (section 6).

The methodological approach of this report combines both quantitative and qualitative methods. Desk research served to assess the theoretical and empirical literature on export-oriented economic and industrial policies in LDCs, with a particular focus on agriculture, food products and labor-intensive manufacturing as well as the empirical literature on the three scrutinized countries. In addition to screening of the scholarly and policy literature, case study analysis of the four sectors was complemented by field research in the three countries and interviews with key stakeholders in firms, government institutions, civil society and academia (see list of interviewees in Annex). Data used was collected from international organizations, national statistical offices as well as sector agencies and experts. Specialized sector experts in the mango sector (Christoph Arndt) and the textile and apparel sector (Shamel Azmeh) were contracted in order to perform specific sector analyses.

## **2. ECONOMIC UPGRADING IN THE COCOA SECTOR IN GHANA AND CÔTE D'IVOIRE**

### **2.1. Developing countries in the global cocoa value chain**

The cocoa value chain can be roughly divided into six stages: (i) supply of inputs; (ii) cocoa bean production, which includes growing the trees, harvesting the pods as well as fermenting and drying the beans; (iii) processing of cocoa beans (roasting, grinding and pressing) to cocoa paste (also called cocoa liquor), butter and powder; (iv) further processing of the intermediate products, e.g. the manufacturing of industrial chocolate ('couverture') by conching a mixture of cocoa paste and butter as well as other inputs, such as sugar and powdered milk; (v) manufacturing of ready-to-eat chocolate products (drinks, bars, truffles, bonbons, confectionaries, etc.) by chocolate manufacturers, dairies and bakers; and (vi) distribution and sales channels (Squicciarini/Swinnen 2016: xxv). Intermediate cocoa products are also used in other products besides chocolate, e.g. as an ingredient in cosmetics and pharmaceuticals.

The cocoa value chain has been described as a 'bi-polar' governance structure with lead firms in the processing of cocoa and manufacturing of chocolate segments (Fold 2002). The relative absence of vertical integration along the whole chain as well as the high level of concentration in both processing segments put forward two sets of actors with strong control over the value chain. Fold and Neilson (2016), however, recently argued that chocolate manufacturers exert greater control over the value chain. The high degree of brand sensitivity of chocolate manufacturers requires brand management and tight control over the value chain. In a similar vein, Aurajo Bonjean and Brun (2016) argue that both set of actors are in the position to exert market power over the value chain, however, chocolate manufacturers are more likely to set a non-competitive price for chocolate tablets and extract rents since cocoa processors are not in the position to set prices for semi-finished products and couverture above the competitive market price. Retailers set the price of chocolate products in the consumption market and decide whether or not certain products are included in their offer. However, their control over the supply chain is rather limited compared to the dominant role of chocolate manufacturers and cocoa processors.

The power imbalances within the bi-polar cocoa value chain, in which multinational corporations source cocoa beans from smallholders, as well as the increasing importance of branding and marketing is also reflected in the decreasing share of value captured by cocoa producers. The share of cocoa beans in the value of a bar of milk chocolate in the UK is estimated to have dropped from an average of 27% between 1976 and 1985 to 9% between 1995 and 2005 (Gilbert 2006). A cost breakdown for UK milk chocolate in 2004 estimated the producer price of the final retail price to be only 4%, while processors and manufacturers receive around 51% and retailers 28% (the rest includes other ingredients, advertising, transport) (ibid.). A similar cost analysis by Cocoa Barometer (2015) estimates the value added of cocoa producing (7%), transporting and trading (6%) as well as processing (8%) to be relatively low compared to the value added of chocolate manufacturing (35%) and retailing (44%).

The production of cocoa beans is labor-intensive and between 80% to 90% is carried out by smallholders. Various sources estimate that 2.5 to 6 million smallholders and around 14 million workers are producing cocoa worldwide, contributing to the livelihoods of 40 to 50 million people (ICCO 2012; WCF 2014a; Anga 2016; Fountain/Hütz-Adams 2015; Hütz-Adams et al. 2016; de Lattre-Gasquet et al. 1998). Geographically, the production of cocoa beans is concentrated in Africa (76% of total production), America (16%) as well as Asia

and Oceania (8%) (ICCO 2017). In recent years, the number of producer countries has expanded. The by far largest cocoa beans producers are Côte d'Ivoire (43%) and Ghana (20%) with around 63% of the global cocoa beans production in 2016/17 (Table 1).<sup>2</sup>

Table 1: Cocoa beans production worldwide (volume, thousand tons)

		2000/01	2016/17	Growth (%)	Share of global production 2016/17 (%)
1	Côte d'Ivoire	1212	2010	66	43
2	Ghana	395	950	141	20
3	Indonesia	392	290	-26	6
4	Ecuador	89	270	203	6
5	Cameroon	133	240	80	5
6	Nigeria	177	225	27	5
7	Brazil	163	180	10	4
8	Peru	24	105	338	2
	Others	280	430	54	9
	<b>World total</b>	<b>2865</b>	<b>4700</b>	<b>64</b>	<b>100</b>

Note: Totals differ due to rounding.

Source: ICCO 2017

Cocoa grinding, on the other hand, is capital-intensive and highly concentrated but geographically increasingly dispersed. Since the liberalization of the cocoa sectors in producing countries in the context of structural adjustment programs (SAPs) in the 1980s and 1990s, merger and acquisitions (M&A) increased the consolidation of the cocoa trading and processing sector. M&As of trading and processing companies have been a strategy to gain control over a larger part of the value chain as well as to achieve economies of scale and scope in the trading and processing of cocoa beans (Fold 2002; Gilbert 2009; Aurajo Bonjean/Brun 2016; UNCTAD 2008). The concentration of the processing sector has also been furthered by many chocolate manufacturers exiting the less profitable grinding sector (UNCTAD 2008). Today, the cocoa processing industry is dominated by three multinational companies (MNCs)<sup>3</sup> which account for roughly 60% of the world's cocoa processing: Barry Callebaut, Cargill and Olam (Terazono 2014; Gayi/Tsowou 2016).<sup>4</sup> The integration of processors and exporters has been at the expense of smaller local and international cocoa traders.

Historically, the cocoa processing industry was located in Europe and the US close to the chocolate manufacturers and consumer markets. In recent years, however, grinding in producer countries (origin grinding) has been expanding due to tax and other incentives in origin countries, decreasing transportation costs for intermediate products as well as a shift in lead firms strategies to tighten the control over the upstream segments of the chain in order to address supply constraints and insecurities (Gilbert 2009; Araujo Bonjean/Brun 2016; UNECA 2013a; Blommer 2011). Origin grinding creates the advantage to source beans for processing locally, however, it has also disadvantages including higher costs of investments and maintenance as well as often limited access to beans from different

<sup>2</sup> Forastero (mostly 'bulk cocoa') makes up around 80% of the global production and is mainly produced in Western Africa, Ecuador and Brazil. Criollo and Trinitario (a hybrid) are more common in Latin America and the Caribbean countries and are more likely to fetch a premium on the international market if they qualify as 'fine' or 'flavor' cocoa. Cocoa trees yield crop after 3-5 years and remain productive for 25 to 40 years and more, however, yields decline already after approximately 15 years.

<sup>3</sup> Other large processing companies include Blommer Chocolate Company and Mondelēz (fully integrated), Guan Chong, BT Cocoa and Ecom Agroindustrial.

<sup>4</sup> Olam acquired ADM's cocoa business in 2014/15.



origins ('single origin challenge') (ACET 2014: 31). The global sourcing of cocoa beans could mitigate the volatility of local bean supply and enable grinders to source best priced and differently flavored beans. Today, grinding in origin countries nonetheless makes up for nearly half of total grindings<sup>5</sup>, with Côte d'Ivoire, Indonesia, Brazil, Ghana and Malaysia being the largest processors of cocoa apart from the EU and the US (Table 2), but origin countries in Sub-Saharan Africa (SSA) continue to have a comparatively small share of higher value added cocoa exports (UN Comtrade 2017). The growth of grinding capacity in general and outside the traditional grinding-hubs in particular has resulted in a global capacity overhang and a drop in cocoa processing margins (cf. Perkins 2015).

*Table 2: Cocoa grindings worldwide (volume, thousand tons)*

		2000/01	2016/17	Growth (%)	Share of global grindings 2016/17 (%)
1	Netherlands	452	545	21	13
2	Côte d'Ivoire	285	540	90	13
3	Indonesia	87	420	383	10
4	Germany	227	415	83	10
5	United States	456	390	-15	9
6	Brazil	195	228	17	5
7	Ghana	70	220	214	5
8	Malaysia	125	220	76	5
	Others	1,168	1,304	12	30
	<b>World total</b>	<b>3,065</b>	<b>4,282</b>	<b>39.7</b>	<b>100</b>

Note: Totals may differ due to rounding.

Source: ICCO 2017

The manufacturing of chocolate is capital intensive and mainly located in the largest chocolate consumer countries in the world, the EU and the US. The chocolate manufacturing sector is also highly concentrated, with the top six chocolate manufacturers, including Mars Inc. (USA), Mondelēz International (USA), Nestlé SA (CH), Ferrero Group (Italy), Meiji Co. Ltd. (Japan) and Hershey Foods Corp (USA), having a market share of approximately 40% (Candy Industry 2016). For some of these companies, the manufacturing of chocolate is only a part of their food products portfolio (Nestlé, Mondelēz), while others (Mars, Ferrero, Hershey) are specialized in the manufacturing of chocolate-based products. Companies specialized in chocolate production also maintain in-house grinding capacity or set up their own cocoa plantations to reduce the power of producers and grinders. However, most manufacturers concentrate their activities on the design of consumer chocolate products and the marketing of global brands in order to be responsive to shifting consumer demands (Fold/Neilson 2016: 202).

The consumer market can roughly be divided between (i) high-volume low-value bulk chocolate; (ii) mainstream quality chocolate; and (iii) high quality 'niche' chocolate (e.g. fine flavor, Fairtrade, organic) (Barrientos 2016). In recent years, growth rates in the key consumer markets have largely been driven by high quality products, emphasizing the importance of branding and responsiveness to consumer demands in a differentiated consumer market. The EU and the US are by far the most important consumers of chocolate products. European countries, in particular Switzerland, Ireland, the UK, Austria, Germany, Belgium, Norway, and others, have the highest per-capita consumption of

<sup>5</sup> Authors' calculation based on ICCO (2017).

chocolate in the world. However, Japan, Russia, Brazil and increasingly also China and India are examples of important emerging markets of chocolate products.

Production costs as well as the size of the local and regional chocolate market are key determinants if chocolate manufacturing in origin countries (origin manufacturing) is suitable or if a market is mainly seized via exports from manufacturing facilities with access to economies of scale and scope. The low albeit growing local and regional consumption in peripheral origin countries is the main reason why chocolate manufacturers are primarily situated in core and increasingly semi-peripheral countries. The production costs of chocolate can also be quite high in peripheral countries in light of often higher prices for electricity given the capital-intensity of production as well as imported inputs (e.g. milk powder and sugar). Further, high transportation costs due to the need to cool chocolate products during transport and a weak infrastructure also impede the manufacturing of ready-to-eat chocolate products for exports in many origin countries. Production facilities of industrial chocolate also tend to be located close to manufacturers of ready-to-eat products since the close proximity allows transportation of industrial chocolate in liquid form and simplifies just-in-time production. Origin countries with a large internal market for chocolate products (such as Brazil) thus have been more successful in functionally upgrading into chocolate manufacturing compared to West African and smaller Latin American producer countries with limited local demand.

Chocolate and cocoa product consumption in SSA has however increased since the 2000s. In 2016, SSA countries imported 64 thousand tons chocolate and cocoa containing food products worth USD 237 million, an increase of 174% by volume (533% by value) relative to the year 2000 (Table 3). The growth of imports of the ECOWAS region, including key cocoa producers such as Nigeria, Ghana and Côte d'Ivoire, has been particularly strong. Tamru and Swinnen (2016) explain this increase in chocolate consumption in Africa by rising income levels, increasing affordability (e.g. smaller packaging, low-priced products), a shift in taste (possibly related to the increasing exposure to the western lifestyle and commercials, e.g. due to cable TV), rapid urbanization and the expansion of the retail sector. The growth of chocolate consumption in Africa in general and in the ECOWAS region and origin countries' markets in particular enhances the potential for origin manufacturing in West Africa, however, most multinational chocolate manufacturers so far continue to seize African markets mainly via exports. The growth of origin manufacturing is thus likely to be dependent on the promotion of locally owned or locally embedded companies (esp. grinders) and/or measures that incentivize or regulate origin manufacturing.

Table 3: Growth of Sub-Saharan African imports of cocoa containing food products (2000-2016)

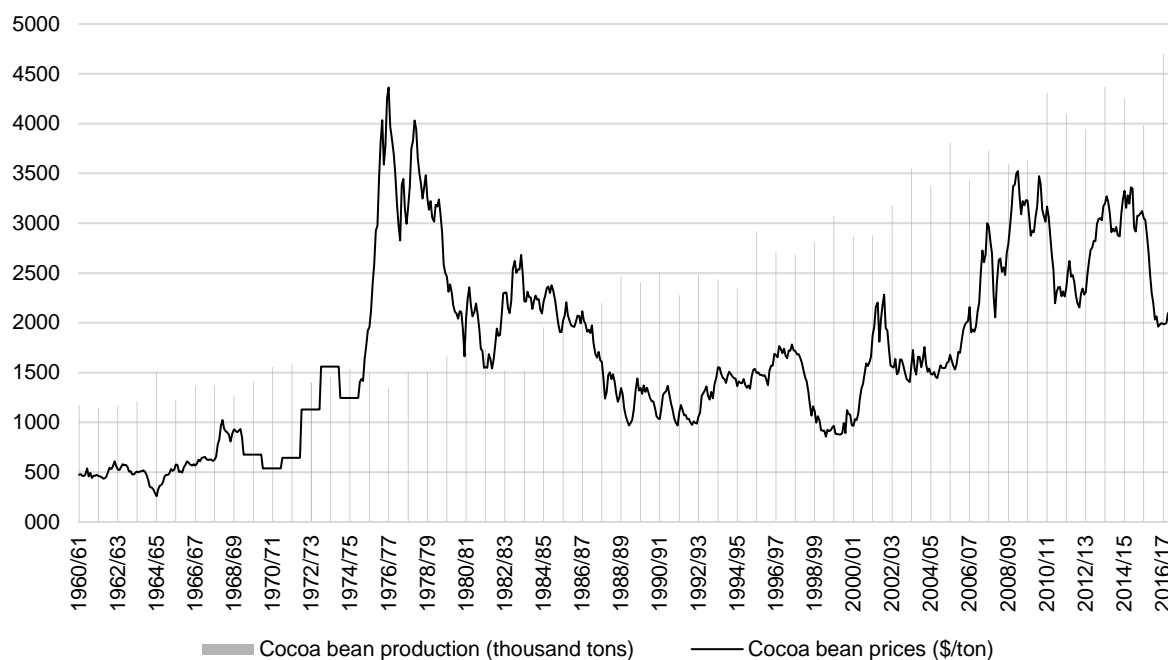
	Volume (thousand tons)			Value (USD million)		
	2000	2016	2000-2016 growth (%)	2000	2016	2000-2016 growth (%)
<b>Sub-Saharan Africa</b>	<b>23.4</b>	<b>64.1</b>	<b>174.0</b>	<b>37.5</b>	<b>237.2</b>	<b>532.5</b>
South Africa	4.8	18.2	279.0	14.7	80.8	449.7
Kenya	0.2	2.1	967.5	0.9	9.1	908.8
Cameroon	0.1	1.2	1,112.9	0.2	2.8	1,314.6
<b>ECOWAS</b>	<b>2.9</b>	<b>19.6</b>	<b>575.6</b>	<b>5.7</b>	<b>51.8</b>	<b>808.2</b>
Nigeria	0.7	5.2	644.5	1.7	14.0	721.5
Ghana	0.2	2.1	932.7	0.3	5.3	1,677.6
Côte d'Ivoire	0.4	1.9	375.0	0.8	6.6	719.2
<b>Global trade</b>	<b>2,570.4</b>	<b>5,428.4</b>	<b>111.2</b>	<b>6,783.7</b>	<b>25,523.1</b>	<b>276.2</b>

Note: Data represents export data of HS 1806. Totals may differ due to rounding.  
Source: UN Comtrade 2017 (WITS)

The limited cocoa processing activities in 'origin countries' increases the dependency of origin countries and in particular farmers on the price of cocoa beans and intermediate products. The global price of cocoa is set on futures markets through the London Cocoa Futures, the ICE Cocoa Futures and Euro Cocoa Futures. Export prices on the national level are determined by global prices – cocoa beans are sold at a premium or discount depending on the quality of the beans. Intermediate products are priced with different mark-up ratios on the future price and thus have a similar price volatility relative to beans. The volatility of ready-to-eat chocolate products, on the other hand, is much lower since chocolate manufacturers and retailers do not necessarily pass through changes in the price of beans in the short-run. Origin countries with an economy dependent on cocoa exports could thus only decrease the income volatility by increasing the export share of chocolate products or by exerting control over the price of cocoa beans (e.g. via supply restrictions).

Cocoa producers have nonetheless benefited from relatively high cocoa prices in the recent decade, despite pronounced volatility, with nominal price levels last seen in the 1970s (Figure 1). The recent price increases were driven by rising chocolate demand and only moderate increases (and most recently decreases) in the supply of cocoa beans. Concerns in the cocoa industry that the demand for chocolate is outstripping supply of cocoa beans (e.g. Blommer 2011) have incentivized lead firms to tighten the grip over the cocoa value chain and promote sustainable cocoa production and origin grinding. Other phenomena, such as expected supply shocks due to weather conditions (e.g. El Niño, Sahara winds, rainfall) and speculative investors' activities on commodity futures markets, are key reasons for the high volatility of cocoa prices. The recent volatility of cocoa prices in 2017 can largely be explained by the decrease in chocolate consumption in 2016, high production expectations in West Africa and the bankruptcy of the US cocoa processor Transmar Commodity Group (Terazono 2017).

Figure 1: Cocoa prices and production (1960/61-2016/17)



Source: ICCO 2017

## 2.2. The cocoa sector in Côte d'Ivoire and Ghana

### 2.2.1. Introduction to the sector in Côte d'Ivoire

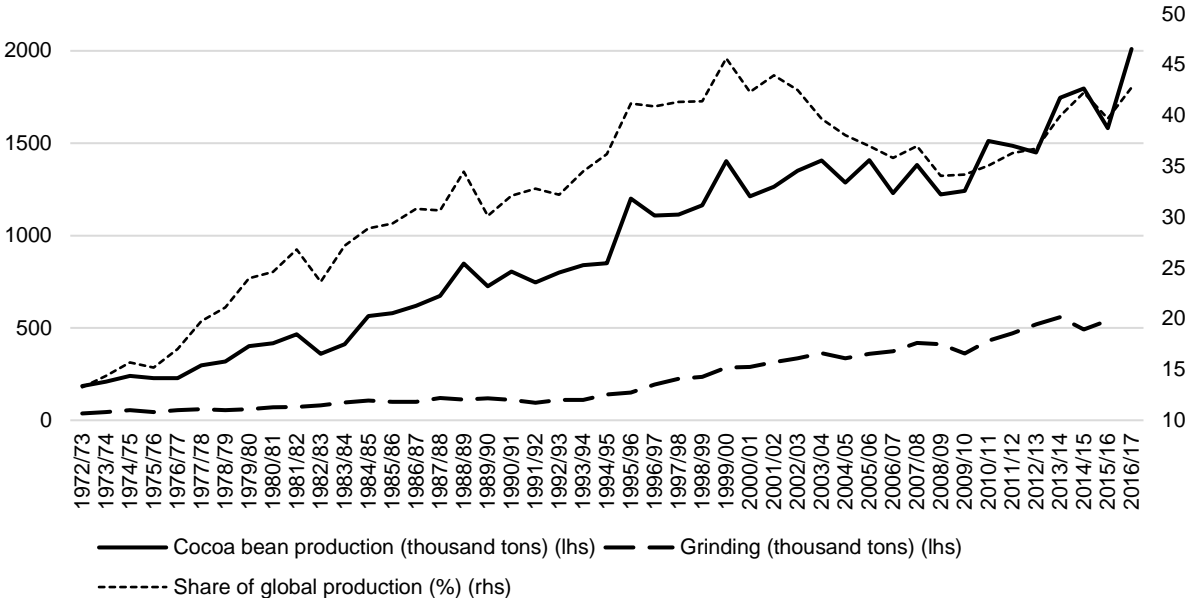
#### National value chain

Cocoa in Côte d'Ivoire was introduced in the second half of the 19<sup>th</sup> century. In the 1950s, the preconditions for its spectacular growth were laid down resulting in a rapid increase in production beginning at independence in 1960 (Losch 2002: 208). This acceleration with an annual growth rate of more than eight per cent finally led to Côte d'Ivoire's takeover of Ghana's position of leading world producer of cocoa beans in 1977 (Losch 2002: 206, 208). After five decades of relative stability – secured by a mixture of private and public efforts<sup>6</sup> the cocoa sector was deregulated in the context of SAPs of the Bretton Woods institutions during the 1990s (Vellema et al. 2016: 231). The liberalization process culminated in the abolishment of the marketing board *Caisse de stabilisation* (CAISTAB) in 1999, which until then regulated trading through a system of buying quotas and fixed cocoa prices (Vellema et al. 2016: 232). The cocoa sector was furthermore negatively impacted by the civil war and political instability of the 2000s, however, cocoa production and exports continued despite decreasing investments and deteriorating infrastructure (Agritrade 2012: 2). In 2011/12, the Ivorian government established the *Conseil du Café-Cacao* (CCC) in order to re-regulate the cocoa sector. In 2016/17, Côte d'Ivoire continues to be the largest cocoa producer in the world, accounting for 43% of global cocoa bean production (see Figure 2). The high dependence of the Ivorian economy on the exportation

<sup>6</sup> Production, collection, storage, conditioning, and shipping was in private hands. The corresponding firms were largely foreign: Lebanese buying agents and transporter were mainly involved in collection; French firms controlled the international marketing and shipping. At the same time a centralized marketing board (Caisse de stabilisation – CAISTAB) licensed private buying agents and export firms, set producer prices, rates of remuneration, and commissions for traders and gave final approval to sales contracts with overseas buyers of cocoa (Vellema et al. 2016: 231; Hecht 1983).

of cocoa is exemplified by an export share of 43% of cocoa products in total merchandise exports in 2015 (UN Comtrade 2017).

Figure 2: Cocoa bean production and grinding in Côte d'Ivoire (1972/73-2016/17)



Source: ICCO 2017

The cocoa value chain in Côte d'Ivoire can be roughly divided into five stages (cf. Laven et al. 2016: 31; Hütz-Adams et al. 2016: Annex: 11): (i) around 800,000 smallholders<sup>7</sup> (3-5 hectares on average) and cocoa farmers produce cocoa beans and (ii) sell them through different channels. Farmers belonging to a cooperative sell (part of) their beans to the corresponding cooperative. However, since only a few farmers are organized the majority sells their produce at farm gate to around 500 different private intermediaries (*pisteurs*). These intermediaries are independent or employed by larger traders. Intermediaries as well as cooperatives (iii) deliver the unprocessed cocoa beans to around 100 local and multinational exporters (*traitants*). Foreign exporters mainly drove out local independent exporters in the liberalization process by forming joint ventures and alliances with local trading companies (Aurajo Bonjean/Brun 2016: 344). (iv) A share of the cocoa beans are processed in Côte d'Ivoire to intermediate products (cocoa paste, butter and powder) by 10 national and international processors. Three additional companies process non-standard cocoa (waste and residues). The processing plants obtain their beans from intermediaries, cooperatives or directly from the farmers. Finally, (v) unprocessed beans or the intermediate goods are exported or (vi) – to a very small extent – used for local chocolate manufacturing by two industrial and various artisanal manufacturers.

The cocoa reform launched in 2011/12 signified a re-regulation of the sector and (re-)introduced a central marketing board (CCC) responsible for the regulation and development of the sector, a minimum farm-gate price and a stabilization fund. In the sector program 2QC (*Programme Quantité-Qualité-Croissance*) CCC also increasingly engages in the provision of services. 2QC has a budget of FCFA 450 billion (around EUR

<sup>7</sup> The official cocoa institutions of both countries, Côte d'Ivoire and Ghana (CCC and COCOBOD), estimate the number of smallholders in their country to be around 800,000. However, in the context of significant higher production of cocoa in Côte d'Ivoire, it is probable that the number in Côte d'Ivoire exceeds 800,000. Hütz-Adams et al. (2016), for instance, estimate the number of smallholders in Côte d'Ivoire to be between 800 thousand and 1.3 million.

700 million) between 2014 and 2023. CCC finances one third and public and private partners finance the remaining two thirds of the costs (CCC 2014). The program aims to improve and promote (i) productivity of cocoa farms; (ii) quality, traceability and sustainability standards; (iii) product marketing; (iv) processing, consumption and valuation of products and by-products; (v) the living and working environment of producers and their communities; and (vi) to professionalize producers and their cooperatives. The program has a strong focus on the promotion of productivity and the livelihood of smallholders, earmarking respectively FCFA 343 billion (75%) and FCFA 103 billion (23%) of the budget to these areas (CCC 2014, 2017). Regarding the increase of productivity, 2QC aims to increase the national average yields to at least 1 ton/ha. The key measures to achieve this goal include the replanting of up to 2 million hectares of unproductive or infected cocoa orchards and the rehabilitation of 1 million hectares of potentially productive orchards. An efficient finance and distribution mechanism should be established to facilitate producers' access to improved plant material and inputs (ibid.).

CCC also markets cocoa beans for exports and manages the forward sales auctions (around 70% of the yearly crop). The guaranteed minimum price is 60% of the average export price realized in CCC auctions. The *barème* (scale) calculated by CCC at the beginning of the cocoa season sets prices, taxes and thus the distribution of income along the cocoa value chain by estimating the costs of different actors. The *barème* is thus subject of negotiations and lobbying with different actors (especially cooperatives and smaller exporters) demanding a higher share. A key issue of the *barème*-system is that it does not differentiate between different actors within specific groups (e.g. small and larger farmers or exporters with a different cost structure). Stabilization or reserve funds exist to support minimum prices in times of decreasing world market prices (Höfs 2017; Hütz-Adams et al. 2016).

### **Cocoa processing and industrial policies**

The Ivorian grinding sector dates back to the establishment of the Société Africaine de Cacao (SACO) by Cacao Barry (FR) in 1964 and has particularly gained dynamic in the mid-1990s with the increasing investments of MNCs (Barry Callebaut, Cargill, ADM and Cémoi)<sup>8</sup>, whose grinding operations continued during the political instability of the 2000s. The capacity expansions of MNCs as well as investments of smaller and Ivorian companies resulted in a significant increase in the total grinding capacity from 350 thousand tons in 2003/04 to 741 thousand tons with 2,161 employees in 2016/17 (Table 4). However, most grinding companies still operate significantly below total capacity (MIM 2016). In 2016/17, Côte d'Ivoire is nonetheless – together with the Netherlands – the largest grinder in the world with 540 thousand tons processed beans and a 13% share of global grindings (Table 2, Figure 2). The four largest MNCs continue to dominate the sector with a 73% share of total grinding capacity. Côte d'Ivoire officially aims to process 50% of its bean output in country by 2020 (CCC 2017), however, only 27% of produced beans were processed locally in 2016/17 (ICCO 2017).

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<sup>8</sup> Cémoi and Cargill invested in new processing plants in 1996 and 1999 respectively. Barry Callebaut (SACO in 2000) and ADM (UNICAO in 2001) took control over existing grinding companies and expanded their capacities over the years (Araujo Bonjean/Brun 2016: 344). SACO was established in 1964 and by Cacao Barry and the Ivorian state. Callebaut and Cacao Barry merged in 1996. The company took full control over SACO in the year 2000.



Table 4: Grinding capacity in Côte d'Ivoire (2016/17)

Name	Processing capacity (thousand tons)	Share of total capacity (%)
Barry Callebaut (SACO)	190	26
Olam (incl. UNICAO)	155	21
Cargill (MICA0)	120	16
Cémoi	71	10
CONDICAF	70	9
Ivory Cocoa Products (ICP)	50	7
Choco-Ivoire	27	4
Sucso	24	3
Ivoire Compagnie de Cacao (ICC)	15	2
Foragri	15	2
Tafi	4	1
<b>Total</b>	<b>741</b>	<b>100</b>

Source: Various sources, including MIM 2016, interviews and company websites.

Following the general trend towards origin grinding, investments in the Ivorian grinding sector have increased due to export tax incentives, investment zone benefits and the deregulation of the Ivorian cocoa sector in the 1990s. The growth of grinding capacity, however, was significantly slowed down – to the benefit of the Ghanaian grinding sector – due to the political instability in the 2000s and beyond. The deregulation of the Ivorian cocoa sector in the 1990s resulted in intensified operations of multinational grinders in Côte d'Ivoire and increased concentration of cocoa trading at the cost of independent local exporters (Gilbert 2009: 300; Araujo Bonjean/Brun 2016: 344f.). The multinational grinders intensified their upstream activities (sourcing and exporting) since the abolishment of the cocoa marketing board CAISTAB in 1999 increased their counterparty risk and opened a window of opportunity to increase the control over the value chain. The intensified upstream activities of multinational grinders in Côte d'Ivoire opened the door for origin grinding.

The key incentive for cocoa processors to grind in Côte d'Ivoire is the single export tax (*droit unique de sortie* – DUS) on cocoa and coffee products. The DUS was calculated based on the weight of the cocoa products produced – and not on the weight of the beans processed – which effectively reduced the export tax for grinders, depending on the exported product, by around 25% (Ecobank 2014a).<sup>9</sup> The tax was introduced after independence and suspended in 1989 due to pressure of the Bretton Woods institutions, however, it was reintroduced during the 1991/92 season due to fiscal deficits after a sharp devaluation of the FCFA (IMF 1998: 42ff.; IMF 2000: 30ff.). Initially, the incentive was to be abolished after five years, however, the DUS was not reformed until the 2012/13 cocoa season (Agritrade 2012). The reform of the DUS was especially struggling for small-scale grinders with comparatively smaller margins in particular due to their higher costs of finance.<sup>10</sup> In addition, various small-scale grinders were only established a few years

<sup>9</sup> The incentive translated to around FCFA 75 (or EUR 0.114) per kilo of cocoa at the time of its abolishment. The yearly loss in government revenue was estimated to be between FCFA 35 and 40 billion in 2012 (EUR 53 and 61 million at the time) (Agritrade 2012).

<sup>10</sup> Grinders with highly efficient machines, particularly employed by MNCs, complain that the multiplier used to calculate the equivalent tonnage of beans used to make cocoa products increase their tax costs (they produce more cocoa products from cocoa beans compared to what would be allowed to export under the current calculation method) (Ecobank 2014a: 4). CCC is currently addressing this problem by developing multipliers adjusted to the efficiency of the machines used by different grinders.

before the DUS reform and thus were not able to pay off their full investment costs under the pre-reform DUS (Ecobank 2014a).

In 2016/17, the government under the *Rassemblement des Républicains* introduced a new conditional DUS incentive for processors in order to achieve the goal to process 50% of total bean output locally by 2020. Processer who agree to increase their capacities within five years – depending on their size between 7.5% and 15% – are eligible to export processed cocoa products at a reduced DUS rate (between 1.4 and 5 percentage points reduction for cocoa paste, butter and powder and duty free exports for finished chocolate products).<sup>11</sup> As of October 2017, CCC reported that Barry Callebaut, Cargill, ICP, FORAGRI and Tafi have agreed to increase their capacities until 2022.

In addition to the DUS, investment incentives (a share of the investment might be deductible from the taxable income in the following years) as well as other timely restricted tax benefits (incl. exemptions on corporate tax) provided in investment zones additionally incentivize grinders to invest in Côte d'Ivoire.

The production of chocolate in Côte d'Ivoire was and is still limited. However, certain dynamics recently evolved. The first chocolate factory in Côte d'Ivoire – Chocodi – was established by the French company Cacao Barry (SACO) in collaboration with the government in 1975 and produced industrial chocolate for exports as well as chocolate products for the domestic market (Losch 2002). The company was sold to the Ivorian CKG Holding in 2008, however, the company was liquidated shortly after. In 2015, the French chocolatier Cémoi expanded its local grinding facility by investing around EUR 6 million in a chocolate factory with a capacity to produce 5,000 tons (potentially expanding to 10,000) of chocolate products for the local and regional ECOWAS market with the goal to become the main chocolate product supplier in the region (Reuters 2015a). The Ivorian grinder Tafi, co-founded by a former Ivorian manager of Cémoi, also functionally upgraded to the manufacturing of industrial chocolate and branded ready-to-eat cocoa products (cocoa drinks and spreads). In recent years the growth of local artisanal chocolate manufacturers has also been expanding (e.g. Instant Choco, Mon Choco). Exports of chocolate products (esp. industrial chocolate) increased significantly since the mid-1990s from negligible volumes to USD 148 million in 2016 (37 thousand tons) (UN Comtrade 2017). Exports of chocolate products significantly dropped after the liquidation of Chocodi in 2010, however, they have now again increased to similar levels in terms of tons.

## 2.2.2. Introduction to the sector in Ghana

### National value chain

Cocoa in Ghana was introduced in the late 19<sup>th</sup> century and Ghana was the largest producer of cocoa in the 1960s; however, cocoa production significantly declined until the early 1980s (Figure 3). The rehabilitation of cocoa bean production was initiated after the Provisional National Defence Council (PNDC), a military regime led by J.J. Rawlings, took power in 1981/82. Production has increased significantly since then. The most important policy changes included the liberalization of the internal marketing of cocoa beans, the increase of producer prices and reforms of the state owned marketing board, the Ghana Cocoa Board (COCOBOD). The government of the New Patriotic Party (NPP) in the 2000s particularly aimed at increasing production and productivity as well as local processing (Vellema et al. 2016; Whitfield et al. 2015). Today, Ghana is the second largest producer

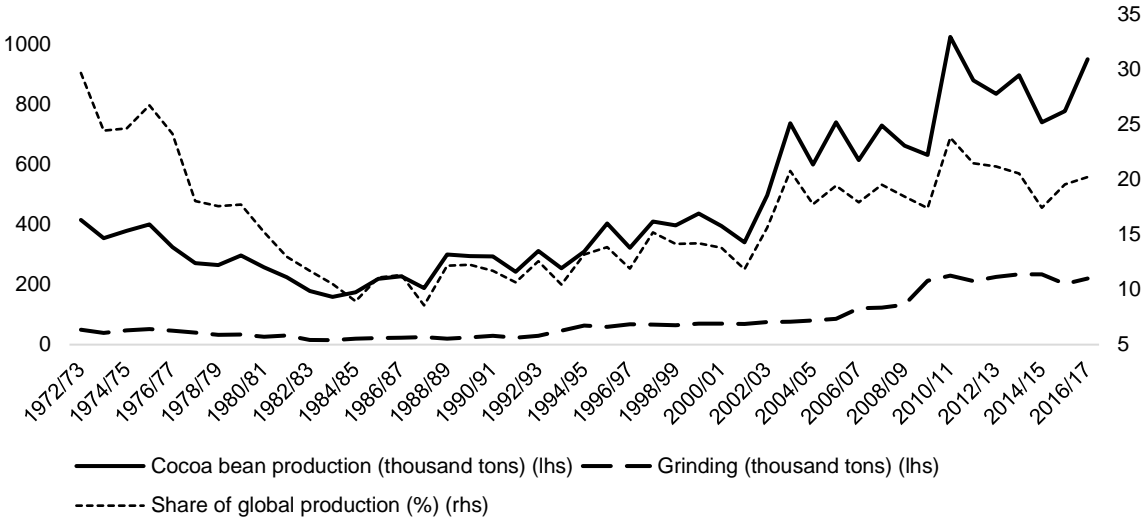
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<sup>11</sup> Grinders with a capacity below 50 thousand tons will have to increase their capacity by 15%; between 50 and 100 thousand tons by 10%; and above 100 thousand tons by 7.5% to qualify for the DUS tax break introduced in 2017. As of 2017, the DUS is 14.6% for cocoa beans and – if applicable – 13.2% for cocoa paste; 11% for cocoa butter; 9.6% for cocoa powder; 6.95% for couverture chocolate; and 0% for finished chocolate products (e.g. bars).



of cocoa in the world behind Côte d'Ivoire with a 20% share of global production (Figure 3). Despite the high importance of cocoa in the economy, there has been an increasing trend of agricultural diversification in Ghana. The share of cocoa in agricultural GDP decreased from 19% in 2005/06 to 11% in 2015 (GSS 2015). In 2016, cocoa products had an 18% share in total exports (UN Comtrade 2017).

Figure 3: Cocoa bean production and grinding in Ghana (1972/73-2016/17)



Source: ICCO 2017

The cocoa value chain in Ghana can be roughly divided into six stages: (i) around 700,000 to 800,000 smallholders<sup>12</sup> produce cocoa beans and sell them to (ii) about 25 Licensed Buying Companies (LBCs) who buy the beans from the farmers and transport and sell them to (iii) the Cocoa Marketing Company (CMC), a subsidiary of COCOBOD. CMC then sells the beans (iv) to international traders and international and national processors on the spot and forward market. The largest share of the beans (over two third) is exported without further processing. (v) The light crop (smaller beans), a small share of normal beans and sometimes also imported or smuggled beans from Côte d'Ivoire are processed to intermediate goods (cocoa paste, powder and butter) by national and international processors and then exported for further processing. (vi) A small share of the intermediate goods is used for local chocolate manufacturing. The locally manufactured chocolate is mainly for local consumption.

The cocoa value chain in Ghana remains highly regulated. Unlike other cocoa producing countries (like Côte d'Ivoire), Ghana resisted the demands of the Bretton Woods institutions and donor countries in the context of the SAPs to deregulate the cocoa sector and abolish the state owned marketing board COCOBOD established in the 1940s during the British colonial rule. COCOBOD has been described as a pocket of efficiency having had an important role in increasing cocoa production and particularly securing high quality of cocoa beans (Whitfield et al. 2015: 241). It plays a key role in supporting farmers, ensuring quality control to sustain the price premium, coordinating exports and bargaining with powerful lead firms on the international market (Barrientos/Asenso-Okyere 2009).

<sup>12</sup> The key representative of the cocoa farmers is the Cocoa, Coffee and Sheanut Farmers' Association (COCOSHE), which also has a representative in the Board of Directors of COCOBOD.

The main activities of COCOBOD and its subsidiaries include the provision of various services to farmers, the management of the guaranteed minimum price, the inter-seasonal stabilization fund and the quality assurance system as well as the marketing and forward selling of cocoa beans by CMC (see Quarthey 2013 and Barrientos/Asenso-Okyere 2009 for more details). CMC sells around 70% of the expected cocoa bean production on the forward market. COCOBOD uses the forward contracts as the underlying for a syndicated offshore loan of up to USD 2 billion. The US-Dollars are exchanged to Ghanaian Cedi by the Bank of Ghana and the purchase of cocoa beans from farmers is conducted by LBCs. The credit is then payed back near the end of the main season for seven months between February and August with the foreign exchange income received from selling the cocoa beans. The main risk of this procedure is potential overselling<sup>13</sup> due to insufficient production.

The minimum producer price and the distribution of income from selling cocoa beans is fixed in advance by the Producer Price Review Committee (PPRC) and its members from COCOBOD, government officials, cocoa buyers, farmers associations and other stakeholders under the chairmanship of the Minister for Finance and Economic Planning. The estimated revenues (gross Free on Board (FOB) value) are based on a forecast on the crop size based on pod counts of various cocoa farms, a forecast on the FOB price mainly based on forward contracts sold by CMC (depending on global future market prices) and the projected exchange rate of the Ghanaian Cedi to US-Dollar. The net FOB price is calculated by deducting various costs of services from the gross FOB value, such as disease and pest control costs, jute sacks, technical services and others. The minimum guaranteed price is set in September before harvesting time. In general, farmers receive above 70% of the net FOB price (78% in 2016). The rest is split between buying agents, LBCs and hauliers (around 10%), and COCOBOD's subsidiaries (Quarthey 2013). A residual, a variable margin, is received by the government. In cases where prices remain below the minimum price, the residual will be reduced. Higher than expected prices often result in a higher residual and increased spending of COCOBOD. The risk of price fluctuations is reduced due to forward selling of the crop. Key challenges of this pricing mechanism include a declining FOB price and an appreciation of the Ghanaian Cedi. High inflation rates furthermore undermine the income of smallholders since the minimum price is set at the beginning of the season. The minimum price also influences smuggling activities in or out of Ghana, depending on the price development in Côte d'Ivoire.

The Ghanaian government and COCOBOD are currently developing a new strategy for the cocoa sector, which – as of today<sup>14</sup> – seeks to intensify the promotion of the grinding sector and in particular chocolate products. The new cocoa strategy will build on the Cocoa Sector Development Strategy approved in 1999. The main activities of the currently negotiated (as of Nov. 2017) new strategy includes the rehabilitation of old farms (cut down old and diseased trees, provision of ammonium sulphate for young trees), provision of pruning and artificial pollination services, subsidization of irrigation systems and fertilizers.

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<sup>13</sup> A potential loss of trust in the supply credibility of CMC can be harmful since cocoa processors and chocolate manufacturers rely on a specific blend of cocoa beans (Terazono 2015). Distrust in the reliable supply of cocoa beans might prompt lead firms to change their blend and dismiss Ghanaian cocoa, most likely decreasing the premium Ghana currently enjoys.

<sup>14</sup> The information is based on interviews of COCOBOD, CMC and government advisors in February and October 2017. The strategy is not yet approved and therefore potentially subject to change.

## Cocoa processing and industrial policies

Ghana has a long history in cocoa processing, however, until the 1990s processing was largely limited to the state-owned and now partially privatized Cocoa Processing Company (CPC)<sup>15</sup> and to the joint venture West African Mills Company (WAMCO). In particular since the mid-2000s, MNCs and local private investors have established grinding factories in Ghana in the context of industrial policies supporting processing. In 2016/17, the grinding sector had a capacity of around 489 thousand tons with around 2,000 employees (COCOBOD 2017a: Table 5). MNCs with processing capacities in Ghana include Cargill, Barry Callebaut, Olam and Touton with around half of the grinding capacities. The largest Ghanaian companies are CPC and Niche Cocoa Industry. In 2014/15, the sector faced a setback after various local grinders stopped being operational as COCOBOD abolished a working capital credit facility because grinders could not pay back their debt (see Table 5). COCOBOD used to offer a working capital credit facility to local grinders which enabled them to buy beans on credit as well as process and sell their products before paying back the credit. The facility thus reduced cash-flow requirements, which particularly benefited Ghanaian and smaller grinders. The abolishment of the credit-facility also put functional companies under pressure. The New Democratic Congress (NDC) government in the past as well as the current New Patriotic Party (NPP) government aimed to increase the share of locally processed beans in total output to 50%, however, only 23% of total output was processed locally in 2016/17 (ICCO 2017).

Table 5: Grinding capacity in Ghana (2016/17)

Name	Processing capacity (thousand tons)	Share of total capacity (%)
Barry Callebaut	67	14
Cargill	65	13
Cocoa Processing Company	64.5	13
Niche Cocoa Industry	60	12
Olam	43	9
Cocoa Touton Processing Company	30*	6
BD Associates	12.5	3
WAMCO	70**	14
Plot Enterprise	32**	7
Real Products Limited (Cafiesa Int. Group)	30**	6
Afrotropics	15**	3
<b>Total</b>	<b>489</b>	<b>100</b>

Note: \* Planned expansion to 60; \*\* not operational;

Source: Various sources, including COCOBOD 2017a, interviews and company websites.

Investments in grinding in Ghana were incentivized by a discount on light crop beans, Export Processing Zone (EPZ) benefits and indirectly by the political instability in Côte d'Ivoire in the 2000s. Grinders in Ghana benefit from a 20% discount on light beans, however, since light crop beans trade at a lower price on the international market, the real discount of light crop is equivalent to around 7.5% (COCOBOD 2017a). The discount on light beans results in a lower average FOB price; grinders are thus indirectly subsidized by smallholders, which explains why farmers' and to some extent COCOBOD are opposed to industrial policies in support of the grinding sector (see Whitfield et al. 2015: 244ff.).

<sup>15</sup> CPC is listed at the Ghanaian Stock Exchange since 2003. Today, COCOBOD, the Finance Ministry and the state-run SSNIT own around 94% of CPC (Reuters 2017).

Processors have argued that the discount on light crop is crucial in order to process profitably in Ghana, in particular since high electricity costs and unreliable power supply<sup>16</sup> impede cocoa processing (cf. ACET 2014: 38f.; Whitfield et al. 2015: 244). The incentives of the EPZs most importantly include tax-free importation for production from EPZs and the suspension of corporate income tax for 10 years and a reduction by 17 percentage points thereafter (from 25% to 8%) (GFZB 2017). Cocoa processors situated in an EPZ are authorized to sell up to 30% of their annual production on the local market (ibid.), which particularly benefits (Ghanaian) grinders that have or want to vertically integrate into chocolate manufacturing and produce for the local market such as Niche Cocoa and CPC.

In 2011, the New Democratic Congress (NDC) government set the target to grind 50% of the total bean production in Ghana. The new government of the New Patriotic Party (NPP) wants to achieve this target until 2020. The installed grinding capacity could already achieve this goal at the current output levels (740 to 950 thousand tons between 2011/12 and 2016/17), however, capacity utilization (around 45% in 2016/17) remains well below the installed capacity. This is because capacity utilization mainly depends on the limited availability of light crop beans which are sold at a discount and because various companies are not operational. It is likely that the increased use of hybrid seeds in the last decade will further reduce the supply of light crop in the future.<sup>17</sup> Since the share of light crop beans in total output is expected to decrease due to quality improvements in the production of cocoa, Ghana would have thus to expand incentives to grind locally to achieve this goal in the near future.

CPC is the largest chocolate manufacturer in Ghana and produces bars of chocolate and other products (e.g. dragees, snacks and drinks) mainly for the local market under the Golden Tree label. Niche Cocoa Industry, a Ghanaian processor who mainly sells intermediate products to MNCs such as Touton and Olam, vertically integrated into chocolate manufacturing in 2017 and particularly aims at the local, regional and Asian markets. There are also a few small-scale and artisanal chocolate manufacturers active in Ghana (e.g. 57chocolate, fairafric). Exports of chocolate products nonetheless remain insignificant. Divine chocolate, established in 1998 and based in the US and the UK, focuses on the branding and marketing of chocolate supplied by third parties and is partially owned (44%) by the Ghanaian cooperative Kuapa Kokoo (Divine Chocolate n.d.). The Devine-model circumvents the challenge to manufacture chocolate in Ghana for exports to key consumption countries and is nonetheless able to capture the value of branding and marketing to the benefit of farmers, however, manufacturing jobs and skills are located abroad.

The currently negotiated cocoa strategy could also include a 2% discount on main crop beans for local chocolate manufacturers as well as the promotion of local chocolate and cocoa product consumption, e.g. via school feeding programs.

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<sup>16</sup> Ghana is a net-importer of energy and has comparatively instable power supply, which often makes investments into expensive electric generators necessary. Electricity prices in Ghana are higher, compared for example to Côte d'Ivoire or EU countries. The World Bank estimates electricity prices for standardized warehouses in business hubs to be at 24.5 ¢/kWh in Ghana, 12 ¢/kWh in Côte d'Ivoire and 10.8 ¢/kWh in the Netherlands (World Bank 2017a-c).

<sup>17</sup> To tackle this issue, processors can either increase the share of main crop beans (which is often relatively unattractive for multinationals due to higher operational costs), import beans from Côte d'Ivoire (which generally are of lower quality, have to be transported and also might not fit in the branding strategy of processors), or, in case of MNCs with global processing capacities, reduce processing in Ghana. Companies that are not able to switch grinding location (CPC, Niche Cocoa and Touton) are more inclined to process main crop beans in case of limited light crop availability as well.

### 2.2.3. Social and ecological sustainability issues

For most cocoa farmers in Côte d'Ivoire and Ghana, cocoa is the main source of income, making them particularly vulnerable to the volatility of the world price of cocoa beans and factors that reduce production and yields (e.g. weather conditions, lack of input supply, old trees etc.). Cocoa farmers and in particular women and old farmers, are therefore the most vulnerable group in the cocoa value chain. To assure a living income from cocoa farming activities is therefore vital for the social sustainability of the cocoa value chain. It is also a precondition to ensure future cocoa supply, since the youth in Côte d'Ivoire and Ghana does not consider cocoa farming to be an attractive profession (cf. UTZ 2016). The provision of a living income will require improving current farming practices, curbing market concentration on the international level, investing in local infrastructure and service sectors, and reviewing the local and global price-setting mechanisms. These tasks will not be fulfilled by a single actor, but by a holistic approach based on shared responsibilities including all cocoa sector stakeholders (cf. Fountain/Hütz-Adams 2015), however, the sector regulatory institutions in both countries – CCC and COCOBOD – will have to play a key role.

Certification can be an important tool to improve farming practices as well as yields and farmers may benefit from premiums paid for higher-quality beans, however, the costs of investments necessary to obtain certification must not necessarily outweigh the benefits (cf. Hütz-Adams et al. 2016; Oomes et al. 2016). Standard-setting organizations furthermore often lack impact on key challenges of farmers such as land use and tenure, effects of climate change, lack of local infrastructure, volatility of world market prices, lack of access to credit and savings opportunities, availability of agricultural inputs and crop diversification, etc. (Fountain/Hütz-Adams 2015). UTZ, for example, also underlines the difficulty to reach women and young people, since certification schemes are designed for farmer based organizations (FBOs) and these social groups are minority members of FBOs (UTZ 2016: 26). Buyers also benefit from certified cocoa due to enhanced supply security, demand from consumers, improvement of brand reputation, credibility of claims, transparency of the supply chain and cost reduction in sustainability processes (Fountain/Hütz-Adams 2015). Finally, certification schemes enhance deforestation-related requirements, hence having potentially an important social and environmental impact (see below; Kroeger et al. 2017).

UTZ, Fairtrade and Rainforest Alliance are the world's leading certification schemes for cocoa and are expanding in Côte d'Ivoire and Ghana. In Côte d'Ivoire it is estimated that 1,552 million hectares out of approximately 2,5 million hectares, i.e. 62%, were certified in 2014 (Lernoud et al. 2015: 124).<sup>18</sup> It is however likely that there has been a significant amount of double and triple certification (Fountain/Hütz-Adams 2015; Hütz-Adams et al. 2016). This issue pertains also to the corresponding Ghanaian numbers. In 2014, 560 thousand hectares out of approximately 1.6 million hectares were certified (Lernoud et al. 2015).<sup>19</sup>

Côte d'Ivoire and Ghana have ratified the core ILO conventions, including the Forced Labour (C29) and Worst Forms of Child Labour Convention (C182), however, both countries continue to face many challenges. Access to adequate and affordable sources of labor is a challenge in both countries. The use of family labor instead of hiring workers is a common practice making child labor a considerable problem (Vigneri et al. 2016). Forced labor as well as human trafficking are further issues, which raise concerns in the

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<sup>18</sup> Fairtrade International 174,000 (7%); Rainforest Allianz 557,000 (22%); UTZ 821,000 (33%) (Lernoud et al. 2015: 124ff.).

<sup>19</sup> Fairtrade International 147,000 (9%); Rainforest Allianz 145,000 (9%); UTZ 268,000 (17%) (Lernoud et al. 2015: 124ff.).



context of social sustainability. Since 2006, the Tulane University runs a project on 'Child Labor in West African Cocoa Growing Areas' (Tulane University n.d.). In its 2015 report it estimates that in 2013/14 around 1.3 million and 957 thousand children, respectively, were working on Ivorian and Ghanaian cocoa farms; this accounts to 34.9% and 42.8% of children living in cocoa areas, respectively. 1.15 million and 879 thousand children, respectively, were engaged in hazardous work<sup>20</sup> (Tulane University 2015: 35). The international Harkin-Engel-Protocol signed in 2001 has been repeatedly extended in order to eliminate the worst forms of child labor as well as forced labor according to ILO conventions in the cocoa sector. The goal is however far from fulfilled. Legal action is taken on the national level as well (cf. Kapoor 2016a: 23ff.; Kapoor 2016b: 24ff.). As the causes to child labor are insufficiently explained by labor shortages, approaches to fight them cannot be limited to labor market interventions (shared labor arrangements, training, equipment), but have to target communities and their social infrastructure (access to additional income, post-primary school education) (Vigneri et al. 2016). The Ivorian government via CCC reflects this in its 2QC program, earmarking 22.6% of the FCFA 455 billion budget for the improvement of the living and working conditions of producers and their communities. Special attention will be paid to basic community infrastructure like rural tracks, primary schools, health centers and village pumps (CCC 2014).

From an ecological point of view, the deforestation processes due to the expansion of cocoa production are a key problem. At the outset of the 20th century, an estimated sixteen million hectares of high canopy forest existed in Côte d'Ivoire; today, only four million hectares are left, while decline continues at an annual deforestation rate of approximately 1%. A considerable share of this decrease is attributed to the expansion of cocoa farming. The remaining forest is highly fragmented, consisting largely of nominally protected national parks and forest reserves. These protected areas are also threatened by illegal (full sun) cocoa farming (Bitty et al. 2015: 96, 100f.). The preference for full sun hybrids due to short-term higher yields poses also a problem in Ghana, by putting cocoa expansion in direct competition with standing forests. It is estimated that about 27% of total deforestation in 1990 to 2008 have been driven by cocoa cultivation (Kroeger et al. 2017). This illustrates that the expansion of cocoa is not the only reason for deforestation, but an important driver. Rates of tree cover loss in protected areas in cocoa areas is almost double in comparison to loss in all protected areas (2.79% to 4.85% in Ghana; 5.84% to 10.99% in Côte d'Ivoire) (Higonnet 2017). The fight against deforestation has – especially in Côte d'Ivoire – social implications. Illegal settlements in protected areas – established in the decade of political unrest prior 2012 – range in size from a few hundred up to 30,000 persons. Altogether, people in the tens of thousands live inside protected areas (Bitty et al. 2015: 102). Therefore, any attempt to save the dwindling forests includes the expulsion of these farmers and their families and hence requires economic and social alternatives for these people (Reuters 2015b).

Ghana (since 2008) and Côte d'Ivoire (since 2011) are both partners of the UN Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation (UN-REDD) and thereby committed to address deforestation in national policies, strategies and programs guided by National REDD+ Strategies. In recent years, an increasing number of Public-Private Partnerships (PPPs) and industry initiatives committed to 'zero-deforestation cocoa' evolved as well (Kroeger et al. 2017). Further

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<sup>20</sup> The ILO defines 'working children' as children (5-17 years), who have engaged in at least one hour of economic activity during the reference period. 'Hazardous work' includes work in industries or occupations designated as hazardous or for long hours (beyond legal limits) and/or at night. With regard to the cocoa sector this includes land clearing, carrying heavy loads, using sharp tools and being exposed to agro-chemicals. 'Hazardous work' falls within the definition of 'Worst Forms of Child Labor' (Tulane University 2015: 7ff.).

commitments were made at the UN Climate Change Conference 2017 in Bonn. Côte d'Ivoire and Ghana together with leading chocolate and cocoa companies announced far-reaching *Frameworks for Actions* to end deforestation and restore forest areas including the end of further conversion of any forestland for cocoa production and to eliminate illegal cocoa production in national parks (WCF 2017).

#### **2.2.4. Development cooperation programs and strategies**

Development cooperation programs targeting the cocoa sector in Côte d'Ivoire and Ghana are manifold and involve different actors. Various official development cooperations are active in both countries (e.g. GIZ, USAID and others), however, engagement by private cocoa and chocolate companies outweighs development partners' involvement in terms of funds and number of programs by far (Hütz-Adams et al. 2016: Annex: 12, 25). Multinational chocolate corporations as well as grinders invest in their suppliers via public-private partnership programs and individual sustainability projects. The private sector thus often provides training to farmers in cooperation with other actors. These actions are motivated amongst other things by growing consumer concerns about social and environmental issues. Development programs and alliances among buyers emerged to meet environmental standards, to prevent the use of child labor as well as to invest in productivity and community development (Laven et al. 2016). However, due to a lack of independent third-party evaluations, it is still not possible to assess the impact of individual company initiatives properly. Progress reported by companies in annual reports is often limited to 'success stories' (Fountain/Hütz-Adams 2015).

International organizations like the World Bank, UN agencies and the ILO are present as well and support the cocoa sector in both countries in various ways. The ILO finances development programs with private and public partners to combat child labor (ILO n.d.a-b). The World Bank finances development policies in Côte d'Ivoire, which focus on critical challenges linked to fiscal policy and key sectors for inclusive growth, including the cocoa and energy sector as well as education (World Bank 2017d). The World Bank also addresses the deforestation problems in both countries and has developed large-scale emission reduction programs (World Bank 2017e) as well as supports the above mentioned *Frameworks for Action* in alliance with other international organizations such as the UNDP. UNIDO (2017) runs a trade-capacity building project in Ghana, financed by the Swiss State Secretariat of Economic Affairs, targeting the cocoa sector and its industries amongst others since 2007.

In Côte d'Ivoire the CCC supports these endeavors and at the moment increases its efforts to coordinate projects of companies and NGOs (Fountain/Hütz-Adams 2015: 12). In the context of the 2QC program – aiming to improve the incomes, living environment and well-being of smallholders as well as to promote sustainable production (CCC 2014, 2017) – a Platform for Public-Private Partnerships (PPPP) was founded in May 2012 as a permanent framework for exchanges and consultation between private and public sector actors. It strives to ensure coordination of initiatives to mobilize and optimize technical, material, human and financial resources within the framework of 2QC. As of 2017, FCFA 37 billion were mobilized – FCFA 24 billion from partners and FCFA 13 billion from CCC (CCC 2017).

In Ghana, COCOBOD created the Ghana Cocoa Platform with support from UNDP and other stakeholders to improve coordination and advocacy for a sustainable cocoa industry and identify bottlenecks as well as develop plans for improvements in priority areas of the cocoa sector (policy framework, land use planning as well as up-scaling and replication of successful experiences) (COCOBOD 2017b).

The program CocoaAction coordinated by the World Cocoa Foundation<sup>21</sup> is a vital example for the cooperation between the state and companies. In a joint agreement twelve of the world's largest chocolate and cocoa companies and the government of Côte d'Ivoire voice their support for increased cooperation (WCF 2014b). While CocoaAction's aim of more collaboration is welcomed, it is noticed that its range is restricted to a small fraction of all cocoa farmers (in West Africa), many of which are already being reached through other industry programs (Fountain/Hütz-Adams 2015).

### **2.2.5. Backward and forward linkages**

In the production of cocoa beans, the main inputs include fertilizers, pesticides and seeds. In Côte d'Ivoire and Ghana, fertilizers and pesticides are imported, while seeds are locally available. Technically advanced irrigation systems (which are not applied on a large scale) are imported as well. The transportation of cocoa beans has a positive impact on the development of infrastructure (streets) and employment in the transport and logistics sector, though the trucks are imported as well.

The grinding sector is capital intensive and creates only few direct jobs (around 2,000 in each country). The machinery is mainly imported from the EU. The grinding sector has most importantly increased the demand for packaging materials, electricity and transportation. Packaging is either imported or produced locally. In Ghana, for example, Sonapack (Rossmann Group, French) with around 200 employees delivers cardboard packaging to the grinding companies.<sup>22</sup> There is, however, much more potential to increase local sourcing of packaging in both countries. In Ghana, the main challenge is the improvement of the electricity system in terms of prices and reliability to make local grinding (and any other capital intensive production) more sustainable.

Cocoa beans and intermediate cocoa products are mainly exported; however, a small share is further processed to chocolate products (Cémoi and Tafissa in Côte d'Ivoire; CPC and Niche Cocoa in Ghana). Chocolate manufacturing is capital intensive and the machinery is imported from abroad as well (esp. the EU). The main ingredients in the manufacturing of chocolate include sugar and milk powder as well as other inputs such as vanilla. Milk powder is mainly imported from the EU, since both countries lack a developed milk industry. Côte d'Ivoire produces sugar, while Ghana does not. Chocolate manufacturers also demand different varieties of packaging which is mainly imported from Asia (esp. China) and in some instances also from the EU. Hence, again in packaging there is a large potential to increase local sourcing as well as in local sugar and milk production. Artisanal chocolate manufacturers are often more labor intensive and are sometimes also vertically integrated (e.g. Instant Chocolat in Côte d'Ivoire).

The increasing operations of multinational grinders in Côte d'Ivoire and Ghana might also have spurred private investments in sustainability projects. There is also some evidence that the operations of multinational grinders has benefited the creation of local companies in Côte d'Ivoire in the form of former employees creating their own grinding company. Working at MNCs particularly in technical and managerial positions can create the knowledge that allows locals to establish and run their own companies. Such organizational learning in foreign firms is of crucial importance and could be incentivized by support policies, for example in the form of incentives to employ locals in technical and

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<sup>21</sup> The World Cocoa Foundation (WCF) is an international membership organization. Its members represent more than 80 percent of the global cocoa market (WCF n.d.)

<sup>22</sup> Cocoa paste is currently exported in solid form in 25kg boxes, however, there is currently a trend towards the transportation of paste in tanks in liquid form to avoid the need to re-liquify the product at target destination. This might be a problem for Ivorian and Ghanaian grinders in the future (Ecobank 2014a).



managerial positions. Other forms of knowledge spillovers between MNCs and local firms through linkages or demonstration effects could be supported as well.

Cocoa beans could also be used in other industries (esp. pharmaceuticals and cosmetics). Notwithstanding efforts to promote such endeavors, their success remains limited. In Côte d'Ivoire, for example, cheap cosmetic imports (esp. from Asia) destroyed the demand for cosmetics containing cocoa.

In sum, at the moment there are few linkages of the Ivorian and Ghanaian cocoa value chain to the rest of the economy. However, some linkages have the potential to be further developed. This is most clearly and easily the case for packaging as such industries already exist in both countries and could be further developed and upgraded in order to fulfill the more demanding requirements of chocolate manufacturers. The development of a chocolate manufacturing sector for local and regional consumption could also further the development of local sugar and milk production. The EPAs, however, might have a negative effect on the development of a local milk sector due to the liberalization of tariffs on milk powder (albeit from a low 5% level for key milk powder imports). Contrariwise, local chocolate manufacturers will benefit from lower input costs for imported milk powder, as discussed below. Industrial policies to support the cocoa sector should hence also take into account the production of inputs, as developing input sectors could increase the competitiveness of the local cocoa sector and boost value added in the local economy. Inputs developed for the cocoa sector such as packaging, sugar, milk and potentially fertilizers and pesticides could also be used as inputs in other sectors. Alternative end markets for cocoa products such as the pharmaceutical and cosmetics industry could be further developed to increase linkages and value addition in the local economy as well as sales options for cocoa producers.

### **2.2.6. Impact of the EPAs**

In August 2016, Ghana ratified the bilateral Interim Economic Partnership Agreement (iEPA) with the EU which was subsequently approved by the European Parliament in December 2016. The iEPA with Côte d'Ivoire has been in force since September 2016, after it was approved by the European Parliament and ratified by Côte d'Ivoire. The ECOWAS-EPA and the iEPAs affect the cocoa value chain in various ways. Most importantly, the ratified iEPAs (as would be equally the case for the regional EPAs) consolidate and grant permanent and secured Duty-Free-Quota-Free (DFQF) market access to the EU market. Given Ghana's and Côte d'Ivoire's lower middle income country status, they do not qualify for Everything But Arms (EBA) and hence would face the Generalized System of Preference (GSP) or even Most Favored Nation (MFN) tariffs in the absence of an EPA. The higher MFN tariffs could be applied in the case that cocoa exports were excluded from GSP due to their large share in total exports to the EU.<sup>23</sup> For the largest cocoa export product, cocoa beans<sup>24</sup>, there is however no effect as GSP or MFN tariffs of this product are zero (see Table 6).

The effects would be most important for intermediate cocoa products – cocoa paste, butter and powder – and hence the processing (grinding) sector in the countries. There is no immediate effect after the implementation of the iEPAs since the EU unilaterally granted DFQF access to its single market via Market Access Regulation (MAR).<sup>25</sup> However, intermediate cocoa products would face GSP or even MFN tariffs without the implementation of an EPA. In Ghana and Côte d'Ivoire the introduction of tariffs would

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<sup>23</sup> Regulation (EU) No 978/2012, Article 8 and Annex VI

<sup>24</sup> Cocoa shells, husks and other waste (HS 1802) are also not affected.

<sup>25</sup> Previous to MAR, Ghana and Côte d'Ivoire did not pay tariffs on cocoa products due to the Cotonou Agreement.

affect exports to the EU in the amount of EUR 406.8 and EUR 929.12 million in 2016, respectively, which includes cocoa paste (6.1% to 9.6% tariff, exports of EUR 193.2 million (Ghana) and EUR 544.25 million (Cote d'Ivoire) in 2016), cocoa butter (tariffs of 4.2% to 7.7%, exports of EUR 184.2 million and 345.73 million, respectively) and cocoa powder (tariffs of 2.8% to 8%, exports of EUR 29.5 million and 39.14 million, respectively).<sup>26</sup>

Processors in Ghana and Côte d'Ivoire have thus lobbied for the ratification of an EPA, since the profitability of their operations was at stake. In Ghana, for instance, the introduction of these tariffs would counteract the key incentive for cocoa processing – the discount on light beans. The effect of the EPAs on cocoa processors differs, however, depending on their share of EU exports and shares of tariff-affected products. Barry Callebaut, for example, was a key player in lobbying in favor of the EPA, since roughly 80% of their output is exported to the EU (FAGE 2016) and the factory in Ghana produces only cocoa paste and cocoa paste nibs facing the highest tariffs (Ecobank 2014b).

*Table 6: Tariff effects of the EPA in the cocoa sector*

HS	Products	EU-GH imports (EUR million, 2016)	EU-CI imports (EUR million, 2016)	EPA/MAR tariffs (%)	GSP tariffs (%)	MFN Tariffs (%)
1801	Cocoa beans	1,010.54	2,110.36	0	0	0
1803	Cocoa paste	193.21	544.25	0	6.1	9.6
1804	Cocoa butter	184.16	345.73	0	4.2	7.7
1805	Cocoa powder	29.44	39.14	0	2.8	8

Source: TARIC 2017; Eurostat 2017; ECOWAS-EPA 2015

Hence, without an EPA, cocoa grinders would face a very difficult position in the European market. Cocoa grinders most probably would opt for reducing processing output in Ghana and Côte d'Ivoire or even close down processing operations and switch to the export of unprocessed beans that face zero tariffs. It is therefore very likely that the non-ratification of the iEPA would have had negative repercussions on success achieved with respect to exports of processed cocoa to the EU market during the last decade.

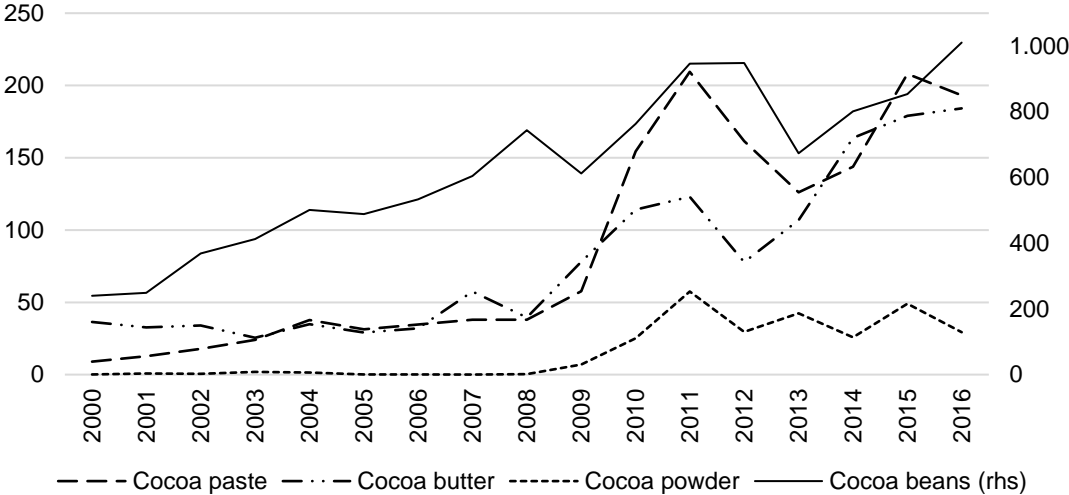
The effects of the EPAs on the chocolate export sector are more limited, given the marginal exports of chocolate products to the EU and the limited prospects of developing these exports in the near future. Instead, for chocolate manufacturing the local and regional markets offer better prospects. But in the longer term secured and continuous DFQF access for chocolate products to the EU market though the EPA could be beneficial. Without the EPA, GSP or MFN tariffs on chocolate products (1806) would account for between 2.8% and 8.3% plus a specific duty (WTO 2017).

On the import side, chocolate product imports from the EU are the major competition of chocolate manufactured in Ghana and Côte d'Ivoire. Imports of chocolate products face a 35% ECOWAS CET-tariff and this tariff will remain as chocolate products are excluded from liberalization in both iEPAs as well as the regional ECOWAS-EPA (MADB 2017; ECOWAS-EPA 2015; Ghana iEPA 2016; Côte d'Ivoire iEPA 2009). Since the standstill clause of the EPA only targets liberalized tariff lines, the ECOWAS region could theoretically even opt for higher tariffs in accordance with WTO rules in order to protect the domestic market. Chocolate manufacturers furthermore benefit from the liberalization of tariffs of imported inputs, since various inputs for domestic production are in part sourced from the EU (e.g. sugar, milk powder). However, the effects are rather small since

<sup>26</sup> Data on these shares varies by source. According to GEPA (2016), the EU imports roughly 29% of total Ghanaian cocoa paste and butter and only 7% of cocoa powder. This data does however not differentiate between cocoa paste and butter.

inputs such as bulk milk powder already have a relatively low CET (5% to be liberalized within five years after entry into force of the ECOWAS-EPA)<sup>27</sup>, or, as in the case of sugar, are excluded from liberalization (MADB 2017; ECOWAS-EPA 2015).<sup>28</sup> This could however reduce efforts to and make it more difficult to expand local sourcing and develop local input production.

Figure 4: Ghanaian exports of cocoa products to the EU (2000-2016, million EUR)



Source: Eurostat 2017

With regard to the sustainability provisions of the different EPAs, the cocoa sector could be a focus sector to support economic growth and sustainable development in Côte d'Ivoire and Ghana as laid down e.g. in Article 3 of the ECOWAS-EPA, which most importantly focuses on the fight against poverty and support for sustainable management of forests. On the development cooperation side, the cocoa sector would benefit from and qualify for most principles laid down in the development cooperation articles of the ECOWAS-EPA (similar to the provision in the interim-EPA (iEPA)).<sup>29</sup> For example, Article 46:2 states that the ECOWAS-EPA should help to increase productivity, competitiveness and diversity of output in the agriculture sectors as well as facilitate the development of a processing sector. Even though the promotion of the cocoa sector per se would not necessarily enhance the diversification of the economy given the importance of cocoa in total exports, supporting processing activities to ensure their longer term sustainability and growth would play an important role for diversifying and increasing value of agricultural exports. However, the focus should especially be on supporting local processors through tackling their key bottlenecks, most importantly access to finance, and through enhancing their linkages with MNCs to foster learning. Further, given the centrality of this sector in

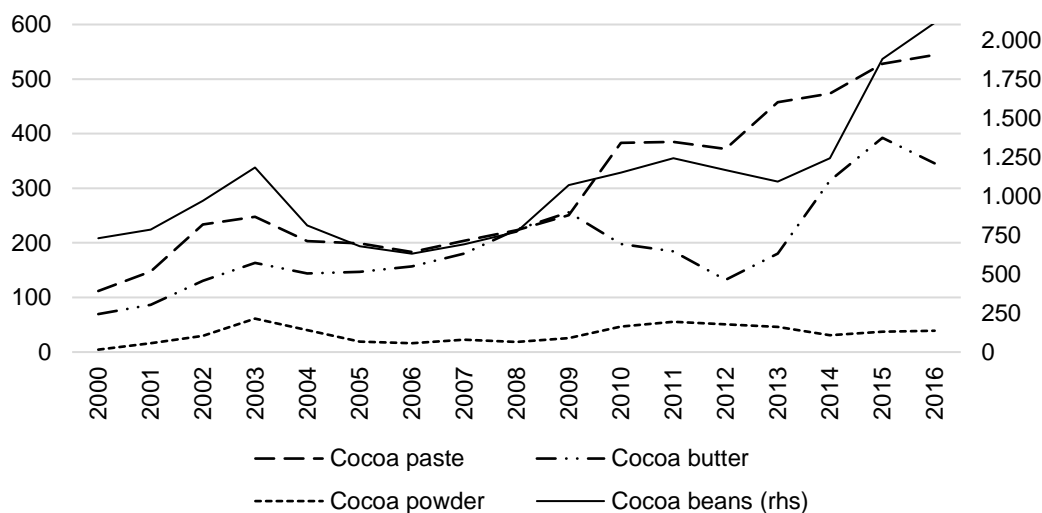
<sup>27</sup> However, there has been already some liberalization in Ghana in milk powder imports due to the introduction of the CET. Additionally, the liberalization schedule of the Interim EPAs slightly differs in Ghana and Côte d'Ivoire.

<sup>28</sup> The concrete liberalization schedule of the iEPAs will be reviewed in 2018 in order to account for the long negotiation period and changes in the respective tariff regimes (particularly the CET). As of today, the Ghanaian iEPA tariff schedule liberalizes milk powder (0402) until the beginning of 2022 (10 years after the first liberalization steps of the iEPA schedule) according to the not yet updated iEPA tariff schedule (HS code 040221 should have been already liberalized in the year 2012 according to the original schedule). The original and not yet updated Ivorian iEPA schedule liberalizes all milk powder products two years after entry into force of the agreement (2011 according to the not yet updated schedule). The ECOWAS-EPA liberalizes bulk imports (5% CET) within five years after the entry into force of the agreement. The Ivorian and Ghanaian iEPA as well as the ECOWAS-EPA exclude the liberalization of sugar (1701), with the exception of sugar meant for sugar refinery (HS17011410; to be liberalized 10 years after the entry into force of the agreement).

<sup>29</sup> Especially Article 1, 3, 46 and 48.

the Ghanaian and Ivorian economy and even more so for the livelihood of farmers, measures that support the productivity as well as the sustainability of farming activities are central from a development perspective.

Figure 5: Ivorian exports of cocoa products to the EU (2000-2016, million EUR)



Source: Eurostat 2017

## 2.3. SWOT analysis<sup>30</sup>

### 2.3.1. Strengths

- The cocoa sector is of **great importance for the Ivorian and Ghanaian political economy**. Together they combine around 1.5 to 1.8 million cocoa farmers, which annually produce around 63% of global cocoa bean output (ICCO 2017). Upgrading and industrialization processes in the cocoa sector are thus of particular economic, social and political importance.
- The cocoa sectors in Côte d'Ivoire and Ghana are regulated quite effectively by **CCC and COCOBOD**, respectively, which enhance the stability of the cocoa sector as well as contribute to the livelihood of cocoa farmers. There are however important differences with Ghana's sector being more regulated, including the internal and external marketing of cocoa beans. COCOBOD has a particularly strong role in external marketing, as it is the sole seller of cocoa beans on the international market, thus bolstering its negotiating position. Côte d'Ivoire has a more liberalized system with an auction system for export licenses.
- The **income volatility of farmers is reduced** due to the annual fixed minimum price based on stakeholder negotiations. The level of the minimum price is influenced by the price of forward sales as well as assessments of various indicators (esp. expected cocoa production) by COCOBOD (CMC) and CCC, respectively, at the beginning of the cocoa season. Côte d'Ivoire and Ghana have price stabilization funds that can protect farmers from inter-seasonal price volatility to some extent.

<sup>30</sup> The following SWOT analysis draws on the field research conducted in January, February and October 2017. The analysis also draws on the discussions of strengths and weaknesses of the Ghanaian and Ivorian value chain in Hütz-Adams et al. (2016).

- There are **numerous public and private programs** targeting the livelihood of cocoa farmers as well as the quality and productivity of the produce in the sector. There are recent efforts to improve the coordination between the programs, though it is too early to assess the impact of these efforts.
- The share of locally **processed cocoa** has increased steadily in recent years in both countries. The main reason for the increase in origin grinding can be explained by global value chain (GVC) dynamics and strategic considerations of MNCs (e.g. improving access to cocoa beans in light of expected cocoa bean shortages) as well as industrial policies that incentivize the processing of cocoa beans in Côte d'Ivoire and Ghana (in particular tax or price reductions). Though the grinding sector is dominated by MNCs, Ghanaian and Ivorian companies have been on the rise in the last decade (despite recent setbacks in Ghana).
- Demand for chocolate products has increased in the last decade, though local and regional **chocolate consumption** remains at a low level. A few firms have started to produce chocolate products in both countries, largely for the local and regional markets.
- **Ghanaian cocoa beans fetch a premium on the world market** (around 3-5%) due to their high quality.<sup>31</sup> The premium is a result of the farmers' practice to dry and ferment the beans directly after the harvest (which is often not the case e.g. in Côte d'Ivoire) as well as the quality control system employed by COCOBOD and the market power exerted by CMC.
- **In Côte d'Ivoire, comparatively low electricity prices are a good basis** for promoting capital and electricity intensive industries, in particular grinding and chocolate manufacturing.

### 2.3.2. Weaknesses

- The high **importance** of the cocoa sector **for the national economy** is not only a strength, but also a weakness, since it makes the economy and in particular smallholders as well as the tax revenue of the government highly dependent on cocoa income and thus vulnerable to world market price fluctuations. Even though smallholders are protected from seasonal price fluctuations due to the minimum price, inter-seasonal price volatilities have the potential to threaten the livelihood of farmers, though they are to some extent absorbed by stabilization funds. The limited crop-diversification of smallholders is particularly problematic in this regard.
- **Cocoa production** in Côte d'Ivoire and Ghana has several shortcomings, which most importantly translate into comparatively low productivity rates relative to what could be achieved. Cocoa productivity is particularly hampered by (i) low-yielding old trees, (ii) insufficient supply of labor and ageing farmers, (iii) a lack of (timely) supply of fertilizers and pesticides, (iv) limited access to credit, as well as (v) climate change and other factors. The comparatively lower quality of cocoa beans is a key problem in Côte d'Ivoire.
- The key challenges for cocoa **smallholders** in Côte d'Ivoire and Ghana include their high dependency on cocoa income due to their limited diversification of crops, the low productivity rates in cocoa production (see above) as well as their income vulnerability due to fluctuations in output, inflation and inter-seasonal price volatility.

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<sup>31</sup> The premium is a result of a high fat content (increasing cocoa butter yields), low levels of debris and low levels of bean defects (Gilbert 2009; Kolavalli/Vigneri 2011)



Smallholders furthermore often lack access to credit and infrastructure as well as suffer from limited supply of inputs. The organization of cocoa farmers is not very well developed. This is, however, partially compensated for by the strong role of COCOBOD and – to a more limited extent – CCC in the sector.

- The expansion of cocoa production has also led to **deforestation processes**. This is particularly problematic in Côte d'Ivoire.
- Not all **certified cocoa beans** can be sold with a premium. This owes to the difficulty of selling certified cocoa with a similar quality as non-certified beans at a higher price, limiting the benefits of certification in light of high investment costs. There also exists double and triple certification of farms, since mutual recognition of certification between organizations does not exist (Fountain/ Hütz-Adams 2015: 27f.).
- In general, the **sector regulations** in both countries benefit farmers on various levels. However, various regulatory institutions do not function without frictions and hence require some adaptation. In Ghana, for example, the minimum price mechanism is put under pressure in case of a declining FOB price and an appreciation of the Ghanaian Cedi.<sup>32</sup> High inflation rates furthermore undermine the income of smallholders, since the minimum price is set at the beginning of the season. The minimum price also influences smuggling activities in or out of Ghana, depending on the price development in Côte d'Ivoire.
- The increase in **grinding** in Côte d'Ivoire and Ghana has not translated into large economic benefits due to limited employment generation and linkages with the local economy as well as rather large tax and price incentives to attract grinding in the first place, which have however reduced government income. The position of the grinding sector is better in Côte d'Ivoire, since more reliable and lower priced electricity enhances the position of the government vis-a-vis grinders. However, the creation of a local grinding sector has still created local value-addition in processing and related knowledge and skills.
- The low level of local and regional per-capita consumption of cocoa products limits the development of **chocolate manufacturing**. The main reason for low chocolate consumption is the lack of cultural tradition to consume cocoa as well as low income levels. Chocolate product consumption is, however, on the rise in (West-)Africa. Local chocolate production for exports to key consumer markets is not viable given high economies of scale and scope of leading chocolate manufacturers as well as higher transportation costs for ready-to-eat products.
- **In Ghana, high electricity prices and unreliable power supply** impede the promotion of capital and electricity intensive industries, in particular grinding and chocolate manufacturing.
- **In Côte d'Ivoire, political instability** has slowed down investments.
- **Worst forms of child labor as defined by the ILO continue to be common** in both countries' cocoa sectors. There continue to be reports of **child trafficking** in the Ivorian cocoa sector.

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<sup>32</sup> Around 70% of produced cocoa is sold forward and forward contracts are denominated in US-Dollar.

### 2.3.3. Opportunities and threats

- The **promotion of productivity and quality** in cocoa production by enhancing good agricultural practices, tree productivity and soil fertility as well as improving access to inputs (fertilizer, pesticides, etc.) and credit, which could drastically increase output of cocoa beans in Côte d'Ivoire and Ghana.<sup>33</sup> Increasing productivity levels are key in order to improve the livelihood of farmers; however, an increase in cocoa bean output could also lower international prices given the dominant position of the two countries in the global cocoa market. Some policies connected with productivity increases are furthermore politically difficult to implement (e.g. land reform).
- The **diversification of income sources** could significantly improve the livelihood of farmers in Côte d'Ivoire and Ghana (cf. Hütz-Adams et al. 2016). The diversification of income sources of smallholders could be achieved either by planting different crops in addition to cocoa, which could involve food crops to ensure food security but also other export crops such as rubber or oil palm.
- **Expanding certification** as well as **increased cooperation of certification providers** with regard to standard criteria and/or **reciprocal recognition of different international certification schemes** (Hütz Adams et al. 2016: 52) could benefit the livelihood of smallholders. The benefits of certification include quality and price increases as well as positive effects on working conditions and the environment. The main challenge in expanding certification is the limited demand in Côte d'Ivoire and Ghana for certified cocoa as well as high investment costs that might outweigh the benefits of certification. The alignment of certification requirements could furthermore reduce the problem of double and triple certification and thus investment costs of smallholders.
- CCC and COCOBOD are – in general – effectively regulating the cocoa sectors, promoting the livelihood of farmers via measures to increase productivity and quality of cocoa production as well as stabilizing income via minimum price systems and stabilization funds, and furthering processing by supporting grinding and also chocolate manufacturing activities. **Increasing the efficiency of service provision** could, however, raise farm gate prices and thus the income of smallholders.
- The **further promotion of the grinding sector** in Côte d'Ivoire and Ghana could be beneficial in the long-term, however, the **cost of incentives need to be carefully taken into account**. A key opportunity would be the establishment of a global **'grinding hub'** in West Africa with access to beans from all over the world to be better able to fulfill buyers' demands. A key threat in this regard are global grinding capacities in key consumer countries as well as the difficulty to access beans from different origins at a competitive price, given demand only for low volumes.
- The **increasing local and regional consumption of chocolate products** yields significant potentials for chocolate manufacturing in (West-)Africa. Côte d'Ivoire and Ghana could develop to a grinding and chocolate manufacturing hub for the local, regional and – potentially – African market. The key potential threats in this regard include slow growth rates of domestic and regional per-capita consumption of chocolate products as well as international competition. Côte d'Ivoire and Ghana are also competitors in this regard.
- **Chocolate manufacturing** in Côte d'Ivoire and Ghana **for exports** to key consumer markets is – in general – economically unviable. Niche strategies (e.g. the Divine-

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<sup>33</sup> In terms of theoretically achievable yields, productivity could be at least tripled in Côte d'Ivoire and Ghana (Mercy et al. 2015).

model) nonetheless yield potentials for Ivorian and Ghanaian actors to benefit from the value added in chocolate manufacturing, branding and retailing in key consumption markets on a small scale. The pronounced competition in key consumer markets as well as the increasingly saturated market for high-cost products (differentiated by origin, certification, etc.) impedes the potential of niche strategies. There might however be more potential in emerging countries, particularly in Asia.

- **Multinational grinders** with grinding capacities in Côte d'Ivoire and Ghana should be **incentivized to foster linkages** with the local economy. A key problem in this regard is the limited bargaining power of the government vis-à-vis lead grinders and the limited policy space due to WTO and EPA provisions, in particular with respect to performance requirements and local content rules. **More locally embedded foreign grinding companies should be incentivized** to employ locals in technical and management positions in order to learn the capabilities required to establish and run own companies as well as to link up with local input and grinding firms in order to learn from international standards. **Industrial policy should particularly assist local grinding companies** with credit facilities for working and investment capital as well as in training and skill development.

## 2.4. Sector development strategies and policy recommendations

The sector development strategies and policy recommendations particularly focus on upgrading and industrialization strategies. The focal point of this section is the discussions of opportunities and challenges regarding functional upgrading and hence the promotion of grinding and chocolate manufacturing.

### Raise productivity and quality of cocoa production

Sector regulations should continue to focus on the promotion of productivity and quality and not on crop area extension in light of deforestation issues. In Côte d'Ivoire and Ghana there exists significant room for productivity increases. The promotion of quality is particularly important in Côte d'Ivoire since the quality control system of COCOBOD has already significantly improved the situation in Ghana. The main policy recommendations in order to improve productivity and quality include the expansion of training and education programs, the promotion of farmer-based organizations, improvements in the efficiency and effectiveness of government institutions (e.g. COCOBOD's and CCC's input supply operations), the promotion of the supply of inputs as well as access to credit in order to enhance the application of good agricultural practices and promote the rehabilitation of farms to improve soil and tree quality. Land reform could also have important impacts on agricultural production but is a politically sensitive issue in both countries.

The governments of Côte d'Ivoire and Ghana as well as MNCs and development cooperation programs should also continue the promotion of certification in order to contribute to increasing income levels of cocoa farmers and address social and environmental concerns. In Côte d'Ivoire and Ghana the certification of cocoa (UTZ/Rainforest Alliance and Fairtrade) has increased and has benefited farmers, however, limited demand for certified cocoa as well as high investment costs has to some extent counteracted the positive effects of certification. The main challenge in this regard is the limited demand for certified cocoa, the high costs of investment as well as the limited coordination between the different standard-setting organizations. Especially the trade-off between the costs of certification and the potential benefits is barely analyzed (cf. Oomes et al. 2016: 78). The costs of certification for farmers could be reduced by expanding cooperation among standard-setting organizations with regard to standard criteria, or,



ideally, by the mutual recognition of certified cocoa between standard-setting organizations. The latter is however unlikely, as standard setting bodies would lose their unique selling proposition. The ISO/CEN standard by the European Committee for Standardization (CEN) and the International Organization for Standardization (ISO) could have positive effects with regard to a harmonization of criteria for certified cocoa and thus reduce costs for farmers in the future. Finally, purchased quantities of certified cocoa should be fixed at the beginning of the season and afterwards not be modified. This would allow farmers and cooperatives to plan and prevent that they lose their premium on cocoa (Hütz-Adams et al. 2016: 51f.).

### **Increase and stabilize producer and export prices**

Raising farm-gate prices of cocoa producers is key in enhancing the livelihood of cocoa farmers and in achieving sustained productivity and quality improvements. Côte d'Ivoire and Ghana have well-established minimum price systems based on forward sales by COCOBOD (CMC) and CCC, which reduce the limited bargaining power as well as the seasonal income volatility of cocoa farmers. Stabilization funds also mitigate inter-seasonal price volatility to some extent, even though funding remains an issue. COCOBOD and CCC levy taxes on the sales of cocoa in order to finance their regulation of and activities in the sector, including the supply of different services to farmers, which generally reduces farm-gate prices. The supply of inputs, training, quality control and other services needs to be performed in an efficient and effective way, so that the benefits (quality, productivity and income increases) outweigh their costs.

The regulation systems in both countries have benefited the livelihood of farmers, however, adaptations such as a minimum price system that takes account changes in inflation or extended stabilization funds could enhance their impact. Minimum prices could be raised, if services supplied by COCOBOD and CCC became more efficient. There have been recent policy changes in this regard in both countries. In Ghana, COCOBOD's engagement as well as its efficiency and effectiveness in input and service supply has been 'cyclical'. The share of producers of the net FOB price has increased from below 20% before the 1980s to around 80% today (Kolavalli/Vigneri 2011). Due to recent discussions on the inefficient and ineffective supply of subsidized inputs to farmers (esp. fertilizers and pesticides), COCOBOD has decided to disengage from the direct distribution of inputs. The currently discussed Cocoa Sector Strategy will nonetheless most likely include important activities directly undertaken by COCOBOD, such as the rehabilitation of farms, pruning and artificial pollination. In Côte d'Ivoire, CCC established a financing and distribution mechanism to guarantee farmers' access to plant material and inputs within the 2QC framework (CCC 2014: 6). During the five post-reform campaigns so far, 201,216 hectares of plant material were distributed free of charge as well as pesticides (to treat 3,813,461 hectares) and fungicides (1,259,202 hectares) (CCC 2017).

Côte d'Ivoire and Ghana could exert market power to raise the export price of cocoa beans, since both countries produce around 63% cocoa beans globally. The formation of a real cartel is however likely to face various difficulties (cf. Oomes et al. 2016: 95), in particular since cocoa beans are easier to substitute and produce compared to for example oil. *First*, higher export and hence farm gate prices are likely to increase the global supply of cocoa in the long-term and thus increase the pressure on prices. This is particularly true since multinational chocolate manufacturers and grinders are likely to set-up large cocoa farms to fight the cartel. *Second*, cartels tend to be political instable since member countries would be forced to cut production or destroy the produce in time of oversupply, which is politically and economically difficult to implement and enforce. *Third*, the cartel and its member countries are likely to face pressure from international institutions

(particularly creditors and the WTO) and MNCs to abolish the cartel. *Fourth*, chocolate manufacturers and consumers are likely to switch to alternative ingredients and products in light of high cocoa prices (e.g. cocoa butter equivalents such as palm oil, shea butter, etc.). The decrease in demand for cocoa beans could counteract the goals of the cartel.

Instead, Côte d'Ivoire and Ghana should try to increase their bargaining power vis-à-vis international buyers and hence ensure higher export prices via other measures. The external marketing system of COCOBOD is an important example on how to foster the negotiation power of origin countries, even though the transparency of their operations could be enhanced. Côte d'Ivoire and Ghana (potentially including other cocoa producing countries) should increase regional cooperation to manage the production and supply of cocoa ('cartel light') – e.g. via the regulation of cocoa production or the use of warehouses in the form of buffer stocks as currently financed by the African Development Bank (AfDB) in both countries. The diversification of sales channels via the growth of a local grinding hub and local chocolate manufacturing could also reduce the dependency on international markets and prices.

### **Promote a 'grinding hub'**

The promotion of 'origin grinding' can be beneficial, though the cost of incentives need to be carefully monitored and evaluated in a transparent way. The promotion of 'origin grinding' has been comparatively costly for Côte d'Ivoire and Ghana, particularly as the apparent benefits in terms of linkages and employment creation have been small. Many multinational grinders active in Côte d'Ivoire and Ghana are also not expected to functionally upgrade into chocolate manufacturing in response to increasing local and regional demand in the future, since they lack know-how and are specialized in the trade of cocoa beans and grinding (and to some extent the production of industrial chocolate). The promotion of grinding should thus carefully consider the costs relative to the long-term benefits, and in particular promote Ivorian and Ghanaian grinders that are more likely to functionally upgrade into chocolate manufacturing in the future. The goal of both countries to grind 50% of the total cocoa bean production in the next few years thus needs to be critically examined particularly in the case of Ghana, where electricity costs are high and the sector needs to be subsidized.

Côte d'Ivoire and Ghana currently have different incentives in place to promote 'origin grinding'. In Côte d'Ivoire, the DUS reform of 2011 removed the costly and indefinite key incentive to entertain or increase grinding capacity in Côte d'Ivoire. The DUS reform of 2016/17 however re-introduced lower and temporary tax reductions in case grinders obligate themselves to increase their capacities. The current incentive scheme is likely to have positive impacts on the grinding capacity and will thus arguably benefit Côte d'Ivoire in the longer term. Policy makers in Ghana have less policy flexibility due to comparatively higher electricity costs. Ghana offers a discount on light beans, which is the main reason for increases in grinding investments in the last decade. This is because grinding in Ghana would be unprofitable due to comparatively higher electricity costs. The need to sustain the discount on light beans in order to maintain the grinding sector in Ghana has been very costly. Its longer term benefits will depend upon an eventual decrease in electricity prices, the latter allowing for the reduction or abolishment of the discount. A transparent and inclusive monitoring and evaluation system for the long-term benefits and costs of the incentive structures could improve the net-benefits of industrial policy.

Locally-owned grinders should furthermore be supported with credit lines in order to reduce the cash-flow requirements for purchasing of beans. Credit lines for grinders are of major importance, since non-MNCs face high cost of finance. In Ghana such a scheme

had to be abolished, after various – mostly Ghanaian – grinders were not able to repay their debts in 2014/15. This led to several of these firms going bankrupt. Multinational grinders should furthermore be incentivized to foster linkages with the local grinding sector, in particular with respect to technology transfer. The limited bargaining power of the government vis-à-vis lead grinders might however impede such a strategy, particularly in the case of Ghana.

The growth of the grinding sector would be particularly beneficial, if a ‘critical mass’ were to be achieved and the import of cocoa beans from different regions at a competitive price became feasible. A government-backed import scheme – potentially in cooperation between Côte d’Ivoire and Ghana – could also mitigate the volatility of local bean supply (esp. in Ghana) as well as enable grinders to globally source best-priced and differently flavored beans (cf. ACET 2014).

### **Extend chocolate manufacturing for the local and regional market**

The manufacturing of chocolate products (incl. branding) is – apart from retailing – the segment with the highest share of value added in the cocoa value chain. Côte d’Ivoire and Ghana should promote chocolate manufacturing for the local, regional and – potentially – African market. The potential for chocolate manufacturing in Africa has grown due to increasing consumption of chocolate products particularly in the context of urbanization processes, a rising middle class and the expansion of supermarkets (Tamru/Swinnen 2016). The recent trend has been accompanied by grinders in Côte d’Ivoire (the French chocolatier Cémoi and the Ivorian grinder Tafissa) and Ghana (the Ghanaian grinder Niche Cocoa) integrating into chocolate manufacturing, as well as a lively artisanal manufacturing sector. Most multinational grinders are however not expected to invest in chocolate manufacturing, since they do not see their core competencies in this activity and lack know-how of the local market.

Chocolate manufacturers should particularly focus on the local and regional ECOWAS-market and should grow in line with local and regional demand. The ECOWAS-market has the advantage of being protected by a 35% tariff for chocolate product imports (WTO 2017). The tariff has not been affected by any of the different interim or regional EPAs (ECOWAS-EPA 2015; Ghana-iEPA 2016; Côte d’Ivoire-iEPA 2009). It is likely that the expansion of ‘origin manufacturing’ in the future will be undertaken both by multinational chocolate manufacturers, Ivorian and Ghanaian grinders as well as small artisanal manufacturers for niche markets. Côte d’Ivoire and Ghana as well as other West African countries with a grinding industry (such as Nigeria) are key competitors in the potential future development of a regional chocolate manufacturing hub. In the perspective of MNCs, Côte d’Ivoire has an advantage over Ghana in developing chocolate manufacturing for regional exports due to lower electricity costs. Ghana, on the other hand, is particularly valued for its political stability.

Local chocolate manufacturers should also try to obtain market shares in other African markets, though such an endeavor will have to deal with international competition from MNCs, which benefit from economies of scale and scope as well as well-established brands and marketing strategies. The EU (and companies manufacturing in the EU) will also gain a competitive advantage vis-à-vis Côte d’Ivoire and Ghana with respect to chocolate exports to African countries outside the ECOWAS region in the context of the liberalization of chocolate products in various EPAs. Apart from the ECOWAS EPA, only a few other EPA tariff schedules (e.g. incl. the EPA liberalization schedules of the EAC region, Madagascar and Zimbabwe) exclude chocolate products from tariff liberalization.

The key question in the development of chocolate manufacturing in Côte d'Ivoire or Ghana is the growth in local, regional and African consumption of chocolate products in a region where a culture of consuming cocoa has been lacking and non-tariff measures impede regional exports. In general, the promotion of chocolate consumption on a large scale has its limits and is generally not advisable, since cocoa products are luxury products in Africa. However, the promotion of consumption in Côte d'Ivoire or Ghana should be leveraged to support local chocolate manufacturers to learn and gain experience for regional exports. Local consumption should be supported by marketing campaigns as well as public procurement. The new Cocoa Strategy in Ghana, for example, will likely aim to include cocoa products in school cafeterias to accustom young Ghanaians to cocoa products. In order to successfully promote cocoa product consumption in (West) Africa, significant R&D will be necessary to develop products suitable for different regional tastes and the hot climate. Particularly Ivorian and Ghanaian chocolate manufacturers need to enhance their respective know-how in product development. Governments as well as development cooperation programs could therefore support R&D of local chocolate manufacturers. The increase in local- and regional demand to support 'origin manufacturing' could be leveraged by increasing ECOWAS-tariffs on chocolate products, e.g. by triggering infant industry clauses included in the WTO-rules as well as the EPAs in order to support local manufacturers and reduce imports particularly from the EU in the case that chocolate product imports from the EU increase despite the 35%-CET. Non-tariff measures in the ECOWAS region also need to be reduced in order to promote the growth of regional exports of chocolate products.

Industrial policy in Côte d'Ivoire and Ghana should furthermore incentivize local chocolate manufacturing. In Ghana, the currently reviewed new Cocoa Strategy could introduce a 2% discount on the main crop for local chocolate manufacturing. In Côte d'Ivoire, the export tax reform of 2017 introduced a discount on export taxes for companies that are willing to expand their capacities (0% export tax on ready-to-eat chocolate products). In addition, industrial policies should particularly promote functional upgrading of Ivorian and Ghanaian grinders in line with domestic and regional consumption growth. Functional upgrading should be promoted via subsidized credit lines and measures to support the transfer of know-how. Côte d'Ivoire and Ghana might also consider investing in education programs in order to be able to supply a skilled labor force necessary for chocolate manufacturing. Ghana also needs to further invest in its electricity infrastructure in order to reduce production costs in capital-intensive industries such as grinding and chocolate manufacturing.

### **Follow a niche strategy for global chocolate exports**

Chocolate manufacturing in Côte d'Ivoire or Ghana for exports to global key consumption markets on a large scale is economically unviable. However, Ivorian and Ghanaian companies could develop niche strategies to participate in key consumption markets. A potentially viable strategy would be to market special branded products for high-priced markets. In order to be able to compete on the highly competitive and increasingly saturated market for high-priced and -quality niche products, the brands/products need to be original and differentiate themselves from other niche products. Examples of such brands or products include chocolate that is manufactured in Côte d'Ivoire or Ghana (e.g. by cooperatives) as well as branders and marketers owned by Ivorian or Ghanaian cooperatives, thus particularly benefiting farmers beyond fair producer prices (e.g. the Ghanaian Divine-model). The differentiation of the product goes beyond traditional certification (UTZ, fair trade, rainforest alliance) and farmers also benefit from the value added in chocolate manufacturing.

There is significant market research as well as marketing necessary in order to being able to penetrate the increasingly saturated market of high-prices and high-quality niche markets. The marketing of chocolate products, where farmers participate in value creation of chocolate manufacturing, could be assisted by the creation of a new certification model. Development cooperation could assist in setting up joint ventures between farmers' cooperatives and investors in developing such brands and niche strategies benefiting farmers and their cooperatives.

### **Support regional cooperation**

Expanding regional cooperation could be beneficial for Côte d'Ivoire and Ghana in various instances. Most importantly, Côte d'Ivoire and Ghana could try to exert market power and influence export prices as discussed above. Cooperation between the two countries could also include knowledge transfer on the governmental (e.g. research and development, policy experience, etc.) as well as private sector level (e.g. regarding product development, market analysis, etc.) and joint policies such as the promotion of local and regional demand for chocolate and cocoa confectionary products. The further development of backward linkages such as in the packaging industry for the grinding or chocolate manufacturing sector or inputs such as fertilizers and pesticides for cocoa production would also benefit from regional cooperation. A regional initiative to import beans from different origins could also benefit the grinding sector to mitigate the 'single origin challenge'.

There have been recent signs that the cooperation between Côte d'Ivoire and Ghana as well as industrial policy measures in the respective cocoa sectors are expanding in the context of a USD 1.2 billion loan request from the African Development Bank (AfDB) in 2017. Implementation and results however remain to be seen. The loan could finance – amongst other things – the building of storage and warehousing facilities necessary for buffer-stocks, the promotion of local and regional processing and consumption particularly focusing on chocolate manufacturing and branding as well as a stabilization fund and a cocoa exchange commission for the management of cocoa production (AfDB 2017).

### **Promote social upgrading and environmental sustainability**

Smallholders as well as workers on the farms – in particular children and elderly people – are the main vulnerable groups in the Ivorian and Ghanaian cocoa sectors. The biggest challenges for cocoa farmers include price volatility, low productivity rates and fluctuations in production volumes as well as often problematic working conditions on the fields. Deforestation is by far the most important environmental challenge in the cocoa sectors. The expansion of cocoa production thus needs to rely on productivity growth and not on the expansion of the harvesting area.

The cocoa sector regulations in both countries have an important role in improving the livelihood of farmers and workers, although improvements in the regulatory systems as well as increasing funds and international assistance will still be crucial to increase and diversify income for cocoa farmers and workers. Development cooperation has and will continue to play an important role in improving the sustainability of the Ivorian and Ghanaian cocoa sectors (see policy recommendations below). Investments in education as well as the supply of alternative employment opportunities are central to reduce the worst forms of child labor. Sustainable sourcing practices of buyers (e.g. by promoting certified cocoa and increasing transparency as well as consumer awareness) are also incremental to promoting social upgrading and environmental sustainability. Land reform could further improve the livelihood of marginalized social groups, but the political challenges are immense in this regard.



## **Use development cooperation in strategic policy areas**

Development Cooperation (DC) needs above all to support defined elements of the partner countries' industrial development policies. This in turn will also improve control over, and ownership of, donor projects by government partners so that activities initiated by development partners become sustainable and the knowledge generated is not lost.

Development cooperation has played an important role in supporting the Ivorian and Ghanaian cocoa sectors. Its role should be continued by focusing on areas where such assistance will be most useful. This includes in particular the following intervention areas:

- Financing targeted training to promote good agricultural practices and income diversification of smallholders
- Promoting coordination and dialogue among Ivorian and Ghanaian stakeholders in the cocoa sectors to advance learning on public and private levels
- Promoting certification in order to further environmental and social sustainability. In order to increase demand for certified cocoa, buyers and consumers also need to be included in a strategy to expand certification.
- Supporting the governments in pursuing their respective industrial policies to promote cocoa processing (e.g. market research, product development, process upgrading, etc.)
- Supporting governments to foster coordination among private and public development initiatives targeting the cocoa sectors
- Providing refinancing mechanisms for bank lending to cocoa processing activities, especially with regard to investment loans for local firms
- Funding sensitization campaigns to promote locally and regionally produced chocolate products as well as finance technology for local chocolate manufacturing SMEs, thus increasing their capacities to compete against imported chocolate
- Facilitating regional trade in the frame of the ECOWAS Trade Liberalisation Scheme by helping processors to understand necessary procedures and requirements
- Financing studies on how to reduce non-tariff measures in the ECOWAS region to promote regional exports of chocolate products in the near future
- Financing reforestation programs

## **2.5. Conclusions**

The cocoa sectors in Côte d'Ivoire and Ghana are tightly regulated, with similarities and differences in terms of specific policies and the institutional setup. Both cocoa sectors are regulated by a marketing board (COCOBOD and CCC) with minimum price systems, stabilization funds and the provision of different services, in order to improve the livelihood of smallholders. However, the internal and external marketing systems are more tightly regulated in Ghana relative to Côte d'Ivoire. Ghana also produces high quality cocoa beans (mostly of the Forastero variety) that fetch a premium on the international market, which can largely be explained by the strong quality control system in Ghana and its resistance to abolish COCOBOD during the 1990s. The cocoa production system in Côte

d'Ivoire has more pronounced weaknesses in terms of the quality of the beans as well as social (esp. child labor) and environmental issues (esp. deforestation). Policies targeting cocoa production should particularly foster productivity and quality as well as strengthen existing institutions to mitigate price and income volatility of smallholders. Regional cooperation could furthermore increase the export price-setting power of Côte d'Ivoire and Ghana.

The Ivorian and Ghanaian cocoa sectors are examples of successful functional upgrading into more capital intensive, albeit still low-value added activities in the context of a cash-crop based GVC. The growth of the grinding sectors was furthered by tax- and price-incentives, changing sector regulations and GVC dynamics, in particular shifting strategies of lead firms towards origin grinding. The industrialization process has been foreign direct investment (FDI)-led and multinational grinders dominate the sectors. However, there are also various Ivorian and Ghanaian grinding companies. The grinding sector has some backward (e.g. to the transporting and cardboard packaging industry) and forward linkages (esp. to chocolate manufacturing) in the local economy, although fiscal and consumption linkages as well as employment creation have been limited due to tax and price incentives, profit repatriation and the capital-intensity of production. The further promotion of the grinding sector needs to take into account the long-term benefits and costs of incentives and should try to make incentives conditional as in the case of the 2017 DUS-reform in Côte d'Ivoire. The sustainability of the Ghanaian grinding sector is questionable due to high electricity prices and the 'necessity' to subsidize the sector, de-facto at the cost of smallholders. Ghana will need to take measures to reduce electricity costs as well as enhance the stability of power supply in order for grinding to be profitable in the long-term.

The development of a grinding sector was nonetheless – in addition to the substantial growth in local and regional chocolate consumption and a 35% common external tariff for chocolate products in the ECOWAS region (WTO 2017) – key for the recent expansion of chocolate and cocoa confectionary manufacturing in Côte d'Ivoire and Ghana. Particularly, the substantial increase of local and regional chocolate consumption, albeit from a low level, has opened a window of opportunity in the promotion of origin manufacturing. Chocolate manufacturing (incl. marketing and branding) has important advantages relative to grinding due to broader linkage potentials as well as a higher share of value-added and lower price volatility relative to bean and intermediate product exports. The growth of origin manufacturing will nonetheless be constraint by the future development of local and regional demand for chocolate and cocoa confectionary products, as these are luxury products in the low- and lower-middle income countries of (West-)Africa. Support for local grinding companies that struggle with access to finance seems to be particularly important in the promotion of origin manufacturing since these companies are more likely to functionally upgrade into chocolate manufacturing.

In sum, this case study has highlighted the following **key policy recommendations**:

- Continue to **improve the livelihood of farmers** via the promotion of productivity and quality as well as the diversification of income sources via education programs, the promotion of farmers based organizations, improvements in the efficiency and effectiveness of government institutions and improvements in the supply of inputs and access to credit in order to enhance the application of good agricultural practices and promote the rehabilitation of farms to improve soil and tree quality. Social and environmental issues, such as child labor and deforestation processes, need to be taken into account, when formulating policies targeting cocoa production. The expansion of certification should also play a role in this regard but the problem of high



costs particularly related to the limited recognition of different certificates has to be addressed.

- The regulation systems in both countries have generally benefited the livelihood of farmers. However, existing measures to stabilize producer prices (minimum prices, stabilization funds) should be extended to **increase and stabilize producer and export prices**. Most importantly, Côte d'Ivoire and Ghana should exert market power to raise the price of cocoa beans, since both countries account for 60% of global cocoa bean production. While the establishment of a genuine cartel is questionable, more cooperation particularly in managing the supply of cocoa and using warehouse systems between the two countries would be beneficial.
- The **promotion of origin grinding** can be beneficial, however, the long-term benefits and costs need to be carefully monitored and evaluated in light of limited linkage and employment creation of the grinding sector. The sustainability of the current industrial policy setup is questionable in Ghana, since the grinding sector is subsidized at the cost of smallholders because of high electricity prices. The expansion of the grinding sector thus has more potential in Côte d'Ivoire due to lower electricity prices and policy space to make incentives conditional. Industrial policies should particularly target the creation of linkages between foreign and local firms.
- The growth of local and regional demand for chocolate and cocoa confectionary products has opened a **window of opportunity to promote 'origin manufacturing'**. The growth of local chocolate manufacturing will likely depend on functional upgrading of Ivorian and Ghanaian grinders (who should thus be targeted via industrial policies) and is constraint by the growth of local and regional demand for chocolate and cocoa confectionary products. In contrast to regional markets, large-scale exportation of ready-to-eat chocolate products to key consumer markets is economically unviable. **Exports of niche chocolate products** with own brands and cooperative involvement also to Asian emerging countries should however be promoted in order to increase local value addition.
- **Expanding regional cooperation** can benefit Côte d'Ivoire and Ghana in various instances, including knowledge transfer on the governmental and private sector level as well as with regard to the strategic development of backward linkages and the joint formulation of policies. Côte d'Ivoire and Ghana should also try to exert market power and influence export prices as mentioned above.
- **Promote social upgrading and environmental sustainability**, particularly with regard to the main challenges of smallholders and workers as well as deforestation issues.
- **Use development cooperation in strategic policy areas** such as the promotion of good agricultural practices and income diversification of smallholders, support government initiatives to coordinate private and public initiatives targeting the cocoa sectors as well as strengthen regional cooperation and assist governments in implementing their respective industrial policies targeting the processing sectors.

### **3. ECONOMIC UPGRADING IN THE MANGO SECTORS IN CÔTE D'IVOIRE AND GHANA**

#### **3.1. The global mango value chain: Overview**

The global mango market has been expanding for the past thirty years. The world production of mango was about 45 million tons in 2014 up from 30 million tons ten years earlier (FAOSTAT 2017). India remains the first world producer with over 18 million tons of mangoes produced every year. In Asia, China, Thailand and Indonesia follow with together 10.5 million tons. In the Americas, Mexico and Brazil occupy the first and second places with 1.8 and 1.1 million tons, respectively. Peru, which has become so important for EU-imports of fresh mangoes, is the Number Three in the Americas with 380,000 tons. West Africa (ECOWAS member states) produces 1.6 million tons.

However, only a small share of the harvested fruits are traded internationally. In part this is explained by significant post-harvest losses (up to 40% reported for some West African countries). Another factor is that in important mango producing countries where mangoes have been grown traditionally, such as India, Pakistan, Bangladesh and Nigeria, the varieties of the often non-grafted and unpruned trees are non-tradeable and much is consumed locally. In addition, especially in African countries like Nigeria, Sudan, Tanzania, Democratic Republic of Congo and Madagascar, which all produce above 300,000 tons p.a., the infrastructure necessary to export fresh mangoes or aggregate the fruits to feed large processing facilities are lacking as are specialised inputs and advisory as well as certification services which are indispensable for quality production.

The main three importing markets are the EU (530,000 tons in 2016), US and Canada (520,000 tons) and the Middle East (240,000 tons). All these markets have steadily grown over the past 10 years: The EU market increased by 6.5% annually, the demand in the US and Canada by 4.9% and the Middle Eastern market by 6.1% (ITC 2017). An underlying reason for this development is the increased use of sea freight for the transport of mangoes with resulting lower consumer prices. This led to a trade characterised by a volume market. The impressive growth explains the attention which policy makers, especially in the area of trade and development cooperation, give to the mango value chain.

Selected mango producing countries are currently taking advantage of the growing markets for fresh and processed mangoes. In countries such as Peru, Guyana, Indonesia, Malaysia, Spain, Portugal and Australia, investments are being made into new orchards, pack houses as well as fruit drying, fresh cut and pulp producing facilities. In Africa, Egypt, Côte d'Ivoire, Mali, Burkina Faso, Ghana and Kenya have recently launched considerable investments in response to global demand leading to a sharp increase in the export of fresh and processed mangoes from these countries. These African countries all target the markets in Europe and the Middle East with Côte d'Ivoire becoming the continent's Number One supplier for the European market (although some fresh mango exports from Mali and Burkina Faso may also be hiding in the export figures of Côte d'Ivoire through which port the neighbours usually ship their fruits to Europe).

Table 7: Volumes of imported mangoes (thousand tons)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
World	1,060	951	1,175	1,309	1,414	1,447	1,576	1,535	1,551	1,747
US, Canada	350	215	337	379	436	432	496	444	462	522
EU 28	318	337	260	342	380	371	395	446	464	527
Middle East	150	137	95	113	130	208	212	231	213	242

Source: ITC 2017

Whereas Mexico is the major supplier of the US market (55% of the country's imports), Brazil and Peru supply primarily the European market. Among the Asian countries, only India and Pakistan play a role on the European market; however, India not with the export of fresh fruit, but only mango pulp for the fruit juice industry (about three quarters of India's exports to Europe). The country is the world largest exporter of mango pulp.

Table 8: Top Ten Exporters into EU 2016

	Exporters into the EU	Value of mangoes (fresh, dry, pulp) exported in 2016 (million EUR)
1	Brazil	124.842
2	Peru	110.428
3	Côte d'Ivoire	48.698
4	India	44.384
5	Israel	30.671
6	Dominican Republic	15.437
7	Pakistan	15.372
8	Burkina Faso	10.999
9	Senegal	8.099
10	United States of America	7.271

Source: ITC 2017

The main traded mango products are fresh mangoes, dried fruits (both air-dried and candied mangoes) as well mango pulp which is a raw material for mango juice. Of minor importance are fresh cuts, frozen cuts, NFC juice, fruit leather, fruit bars, mango jam, preserved fruits, mango pickles such as achar and chutney as well as the high-price specialty food items mango wine, mango vinegar and mango kernel oil (also for cosmetic use).

The European market requires **fresh mangoes** throughout the year and offers the best prices between November and January (FranceAgriMer 2017). The two major producers for the European market sell their fruits from October to December (Brazil) and January to April (Peru). The next season is the window for mangoes from West Africa (Côte d'Ivoire, Burkina Faso and Mali: April to May; Ghana and The Gambia: May to July; Senegal: June to September). During the months of August and September usually mangoes from the Dominican Republic, Pakistan, Israel and Spain dominate on the European market. In West Africa, only Ghana has fruits in January and February which is a minor season for producers in the South of the country. They are mostly air freighted to the Middle East. Many – particularly smaller – exporters from Ghana prefer to export to the Middle East since importers are ready to provide irrevocable letters of credit by their banks (which is not the case in the EU) and high quality mangos are more likely to fetch a premium in the Middle East. The EU fresh market, on the other hand, tends to be a volume market particularly suitable for exporters with large pack-house capacities.

Fresh mangos exported to the EU must fulfil public standards related to SPS issues, especially regarding pesticide residues and harmful organisms. The fruits must be accompanied by a phytosanitary certificate of the country of origin. In 2016, pest infested mangoes (mostly with fruit fly larvae) accounted for 11% of all fruits and vegetables intercepted at the EU border for reasons of harmful organisms while as many as 78% of these interceptions were from African origin (EUROPHYT 2017). Among the interceptions which occurred due to absent or incomplete phytosanitary certificates, 46% came from African countries. African exporters therefore exhibit a tremendous need to catch up.

Among the private and voluntary standard requirements, a certified quality management system (mainly GlobalG.A.P., but also IFS, BRC, ISO 22,000) is a precondition to access most markets in Europe and the US/Canada. Such certification is unavoidable for fruits sold in supermarket chains. However, those fruits traded in wholesale markets and retailed in corner stores may still come without certification. Yet, with mangoes becoming a product of the supermarket-driven volume market, the trend clearly goes towards short supply chains determined by large retailers who usually require multiple certifications. Exerting strong control over the entire chain, large retailers also often want to see different social and environmental standards audited which, however, do not reflect in a higher purchase price. Price margins for the producer, in contrast, can only be achieved with organic and fair trade certification. These requirements of large retailers have led to closer linkages and long-term relationships between producers and exporters in order to achieve and maintain consistent supply, quality and traceability.

The European market for **dried mango** is estimated at 3,500 to 4,000 tons p.a. (CBI 2014). The conversion rate from fresh to dry is about to 15:1. About 20% of the dried mango sold in European retailers is labelled 'organic'. In no other section of the mango market the demand for organic products is higher and much of the demand for organic air dried mango is currently not satisfied. According to major organic importers in Europe, 500 tons of additional organic dried mangoes could be sold in the short term.

Dried mango which is mostly eaten as a snack product, often mixed with nuts and other dried fruits, represents less than 0.5% of dried fruits sold in Europe. The main markets are the United Kingdom and Switzerland, where all major supermarkets sell one or more types of attractively packaged dried mango. The demand for dried mango as an intermediate product seems to be quite low. It is part of some varieties of muesli (tropical flavours), but these are only niche products. Air-dried mangoes are mostly destined for the European market. The American market long preferred candied mango which are made by osmotic dehydration: Soaked in a sucrose solution to extract moisture before drying, the texture and taste of candied mangoes are very different from air-dried mangoes. Candied mangoes from the Philippines and Thailand still account for about 35% of the European dried mango market. However, air-dried mangoes are on the rise, not only in Europe, but also on the American market. Recently, freeze dried mangoes have entered the market, first in the US, but now also arriving in European health food stores.

South Africa supplies about 50% of the European market for dried mango (while this figure also includes dried mango from West Africa traded by South African companies). As mango production is declining in South Africa, this provides opportunities for West African countries such as Burkina Faso, Ghana, Mali and Côte d'Ivoire. Yet, drying for the demanding European market requires quite some technology. The present product quality coming out of small and medium mango drying companies mostly in Burkina Faso with out-of-date technology ('Atesta-Dryers') cannot keep up with increasing quality demands

in Europe: Their product is often too brown, too dry, has lost its flavour and is too sticky. This last feature not only makes it difficult to eat, but also to mix with other nuts and fruits.

**Mango pulp** is a product of rather low value addition and processing depends on very inexpensive raw material. The conversion rate from fresh to pulp is roughly 2:1. About 65% of the production of mango pulp goes into making juices which are more available on the Middle Eastern and American markets and still less in Europe. However, the demand for mango pulp in Europe is growing steadily. European juice makers who have suffered from stagnating growth in recent years have lately started to introduce luxury products such as smoothies and health shakes to increase sales. These often contain exotic fruits such as mangoes. The dairy industry (yoghurt, ice cream, desserts) consumes 30% of the pulp and other industries (jam, jellies, sweets) use the remaining 5%. For mango pulp importers, the purchase decision is based not only upon the price, but also the certification of the product, its taste, acidity, sugar level (measured in Brix), microbiological guarantees for the product as well as the reliability of the supplier.

The pulp market is dominated by India, which accounts for about 60% of world production, followed by Latin American countries and Pakistan. The Alphonso variety of India is rich in sugar with a strong and unique taste. It is considered the best variety on the market and is unparalleled. India also produces a large amount of mango pulp from the Totapuri variety, which is, however, considered to be of low quality. Yet, in years of good Totapuri yields in India, it becomes difficult for other mango varieties to find a place on the market since the prices of Totapuri for the pulp industry are unbeatable. The strength of the mango pulp industry in India explains why the country is the first world producer of mangoes, but hardly plays a role in fresh exports.

Production build-ups for mango pulp will mainly target the European market because Middle Eastern countries who produce large quantities of mango juice tend to rather buy lower quality pulp from India. Some West African countries such as Mali have recently invested into pulp mills. Production capacities are still low, but might grow considerably also in the light of the difficulties in West Africa linked with fresh exports and the increasing number of interceptions of mangoes at European ports due to fruit fly infestation. The risk of trading unmarketable goods is much lower with mango pulp and dried mango than with fresh fruits. In addition, mango processors often do not require quality management certification from farmers as opposed to fresh fruit exporters. The market for organic mango pulp and fair trade certification seems to be very limited at present although some growth is expected for organic and fair trade pulp in the near future.

The production of mangoes is generally thought to have a great potential to increase the income of poor farmers in developing countries. However, in Africa at least, mangoes are not a poor man's crop. To establish an orchard requires finance and land tenure rights, which is particularly difficult for young adults and women. Only few of those farmers who have mango orchards are able to manage them in the way necessary to fulfil market requirements in overseas markets. Although the export market for fresh fruits (and fresh cuts) tends to yield the highest profits due to the most restrictive specifications, most farmers will only be able to serve the processing industry (with drying companies exerting still higher requirements than pulp mills). In a mango producing country of Africa, a processing diversity as large as possible which includes packing for the fresh market and producing fresh cuts, dried fruits and pulp is highly desirable. This will help to develop the mango industry by securing and increasing demand and giving the right stimulus for farmers to invest into production and quality management with a degree of flexibility for farmers in fulfilling different industry requirements.



## 3.2. The mango sector in Ghana and Côte d'Ivoire

Table 9: Comparison of the mango sector of Ghana and Côte d'Ivoire

	Ghana	Côte d'Ivoire
<b>Plantation area 2016 (ha)</b> (Expert estimation, FAOSTAT, Zakari 2012)	20,000	88,000
<b>Total production 2016 (tons)</b> (Expert estimation and Nugawela 2017)	110,000	120,000-150,000
<b>Fresh exports 2016 (tons)</b> (WATIH 2017)	845	32,628
<b>Share of fresh exports to total production</b>	1%	27%
<b>Farms with valid GlobalG.A.P. certificate 11/2017</b> (GlobalG.A.P.)	105	1,043
<b>Intercepted mango consignments 2016</b> (EUROPHYT)	1	10
<b>Intercepted mango consignments 2017 (until October)</b> (EUROPHYT)	0	32
<b>Dry mangoes export 2016 (tons)*</b> (Expert estimation and WATIH 2017)	900	75
<b>Fresh cut exports 2016 (tons)</b> (Expert estimation and Nugawela 2017)	1,700	0
<b>Mangos used for processing 2016 (tons)</b> (Expert estimation)	30,000	1,000
<b>Specialisation</b>	Processing for export	Fresh export

Note: \* for Côte d'Ivoire 2017; The estimation of total marketable production by experts working in the mango sectors in both countries is highly reliable whereas the estimation of plantation area only has limited comparability due to the fact that mango production in the two countries differs: plantations in Ghana are younger and have been set up generally as sole stands with hardly any intercropping. Apart from a few vast plantations, most mango trees in Côte d'Ivoire, however, are part of the "parkland agroforestry system" in which farmers have a number of mango trees (in addition to shea butter or locust bean trees) in midst of their fields used for annual cropping. The table therefore does not allow for a conclusion that fruit yields per tree are higher in Ghana than in Côte d'Ivoire. Nevertheless, the marketable yield per hectare is generally higher in Ghana as quality requirements in processing (focus of the Ghanaian mango industry) are lower than those for the fresh export market (focus of the Ivorian mango industry).

### 3.2.1. Introduction to the sector in Ghana

In **Ghana**, the mango industry is still very young and has a much lower economic significance for the agricultural GDP compared to Côte d'Ivoire (0.3% vs. 1.7%). The country has about 20,000 ha under mango production of which approximately 7,500 ha of fruiting orchards are commercially managed. In addition, about 3,400 ha have been newly established with the help of government subsidised loans mainly in the north of the country and will only come into production in the years to come. It is expected that until 2020 another 4,000 ha will be established in the north of Ghana (expert opinion and data provided by EDAIF). Total production may currently be as high as 110,000 tons (Nugawela 2017); however, very few fruits are exported fresh, and processing (dried fruits and fresh cuts) are the backbone of the mango industry in Ghana. With post-harvest losses of about 30% (MOAP 2016), the volumes available for processing are about 30,000 tons, while usually 40,000 tons are consumed fresh locally. Fresh exports move within the boundaries of only 800 to 2,000 tons per year.

About 8,000 farms in Ghana own mango orchards. However, the more commercially managed orchards belong to about 2,000 members of 17 mango farmers associations. Ghana has four main production zones, namely: A cluster around the town of Somanya, only a few dozens of kilometres northeast of the capital Accra (about 3,000 ha of orchards planted in the 1990s); the south and centre of the Volta Region; the middle belt mostly in the Brong Ahafo Region; as well as the very north of the country where commercial mango farms have only been developed after the year 2000. Ghana has the comparative



advantage over neighbouring countries of having two harvest seasons in the south of the country (a major season in June to July as well as a minor season in January and February). The middle belt and the north only have one season (the further north the earlier the season with April-May in the north and May-June in the middle belt). Having said so, with the help of pruning and chemical flower induction some commercial farms in the middle belt have also managed to target the minor season when mangoes are in high demand in Europe and the Middle East.

Mango is now becoming the fastest growing horticulture crop under large-scale production in Ghana after the recent decline of the pineapple industry. Whereas export revenues from pineapples have dropped dramatically since 2013, export revenues from mangoes (fresh, dried and fresh cut) have been growing slowly but steadily. However, they are still very low and insignificant compared to other tree crops such as cocoa and cashew.

*Table 10: Agricultural exports from Ghana 2016*

<b>Product</b>	<b>Export revenue (million USD)</b>	<b>%</b>	<b>Source</b>
<b>Total exports</b>	11,137	100.0%	Bank of Ghana
Cocoa	1,899	17.1%	ITC
Cashew	987	8.9%	ITC
Banana	65	0.6%	WTEEx
Pineapple (incl. dried and fresh cuts)	37	0.3%	WTEEx
Mango (incl. dried and fresh cuts)	20	0.2%	Expert estimation
Yam	16	0.1%	ITC
Shea butter	11	0.1%	ITC
Orange juice	3	0.0%	ITC

Note: Compilation of different sources according to author's data assessment

Compared to Côte d'Ivoire, the Ghanaian mango industry developed ten years later. Commercial farming of grafted mango varieties only began in the early 1990s, mainly due to a food security programme sponsored by USAID which was continued by value chain development as well as trade and investment projects supported by USAID and GIZ. Eventually, from 2012, the Export Development and Agricultural Investment Fund (EDAIF) of the Ghana Government took over and supported the establishment of new orchards especially in the north of the country. In the absence of a varietal strategy, 82% of trees are of one variety only (Keitt) with Kent accounting for another 11% (Evans 2014). These varieties are both very late which is the reason for relatively short seasons which then often produce bumper harvests. However, Keitt and Kent are much appreciated by the market.

In 1997, the currently largest offtaker for mangoes in Ghana, Blue Skies, a British investment, started its operations in Nsawam (Eastern Region). The company is mainly preparing fresh cuts of pineapples and mangoes for UK and Netherlands supermarket chains. It processes about 10-12,000 tons of mangoes a year and with 3,000 workers has become the largest single employer in the food industry of Ghana. In 2010, the Swiss company HPW built a state-of-the art drying factory in Adeiso (Eastern Region). Today, after two extensions, it processes 8,000 tons of mangoes a year. In 2016, it produced 670 tons of dried mangoes sourced from about 500 farmers. The company employs 700 workers. Other important mango processors are ITFC in Tamale (Northern Region) and Bomarts in Nsawam (Eastern Region) for dried mangoes as well as Peelco (Central Region) for fresh cuts made for the German market. Together, they process about 30,000 tons of the Ghanaian mango crop a year.

However, these companies also import mangoes for processing to Ghana because of the short Ghanaian mango season as well as a rather high competition for fruits within the season among the processing companies. As Ghanaian mangoes are relatively expensive (2016: 0.26 EUR/kg field edge price compared to only 0.18 EUR/kg in Côte d'Ivoire) mangoes are being imported from neighbouring countries even when also available in Ghana. Outside the mango season, the fruits are mainly sourced in Côte d'Ivoire and Burkina Faso (March and April) as well as Senegal (August to October). Organic certified mangoes are almost all from Burkina Faso. At times, Blue Skies and Peelco even airfreight mangoes from Brazil and Egypt to Ghana as they both need to honour contracts for year-round supply of fresh cuts to European supermarkets.

With 800-1,000 tons of dried mango exports, Ghana is second in West Africa to Burkina Faso which exports about 2,000 tons per year. However, fruit drying in Burkina Faso has been traditionally carried out by small and medium enterprises with out-of-date equipment such as the 'Atesta-Dryers'. The three large processors in Ghana use high class South African and European equipment. Together with the implementation of international quality management systems this results in a final product that can be sold at higher prices to European customers – although the Burkinabe competition exerts significant pressure on prices. Ghana produces dried fruits almost exclusively for the European market, although some of the trade is carried out by South African firms. Israel has also been an important export destination. Companies, however, now see the largest growth potentials in supplying the American dried fruit market.

In a normal year, Ghana imports more fresh mangoes than it exports. HPW alone sources more than 2,000 tons of mangoes from suppliers in Côte d'Ivoire. Fresh exports have not really taken off in Ghana despite government efforts in collaboration with the African Development Bank (AfDB), the US Millennium Challenge Corporation (MCC) and the World Bank to install two large mango packhouses (Volta and Eastern Region) as well as state-of-the-art export handling facilities for fresh fruit at the seaport in Tema and the airport in Accra. Organisational issues play a major role for the inability to use these facilities for fresh exports (see chapter 3.2.4), but also the inability of farmers to control the two mango diseases anthracnose and Bacterial Blackspot Disease (BBS). The only noteworthy well-established fresh mango export trade is for airfreighted fruits to Lebanon and the Middle East, mostly in the minor season (January, February), but also in the major season undertaken by a few very experienced actors such as Evelyn Farms with excellent quality management systems not only for their own production, but also imposed on their supplying farms.

GlobalG.A.P. certification for mango producing farms is required by the fresh cut companies in Ghana as well as most importers of fresh mangoes overseas. In November 2017, 105 out of about 8,000 producers in Ghana had a valid GlobalG.A.P. certificate (GlobalG.A.P. 2017).

The following trends can be currently observed in Ghana to further grow the mango sector:

- Interest of farmers in decentral mango drying facilities using South African technology as well as decentral, individually-run simple packing stations to pack for export
- Interest of processors to bind suppliers through input loans, extension and support in certification ('integrated business models')
- Higher density planting and more intensive management involving pruning as well as intensified crop protection to control fruit flies and BBS.

### 3.2.2. Introduction to the sector in Côte d'Ivoire

In **Côte d'Ivoire**, mango has become the third exported fruit after banana and pineapple. After a decline in the pineapple industry and a rapid growth of mango exports since 2012, the two crops are now nearly on a par. Côte d'Ivoire is today Europe's third important mango supplier after Brazil and Peru and ranks first among African suppliers. Grown on about 88,000 ha (FAOSTAT 2017) with an estimated 50,000 ha of commercial and semi-commercial production, the average production of Ivorian mangoes is estimated at 120,000-150,000 tons per year with an export potential of over 60,000 tons (WATIH 2017). Officially, 45,000 tons of fresh mangoes were exported in 2016, but as some fresh mango exports from Mali and Burkina Faso may also be hiding in the export figures of Côte d'Ivoire through which port the neighbours usually ship their fruits to Europe, WATIH estimates the Ivorian exported volumes at 32,628 tons in 2016. Export earnings were EUR 53 million in 2016 and the entire economic value of the mango industry generated in 2016 is estimated at about EUR 125 million (WATIH 2017). This translates to about 1.7% of the agricultural GDP generated by only 0.3% of the farming population (Ministère de l'Agriculture, Côte d'Ivoire 2015).

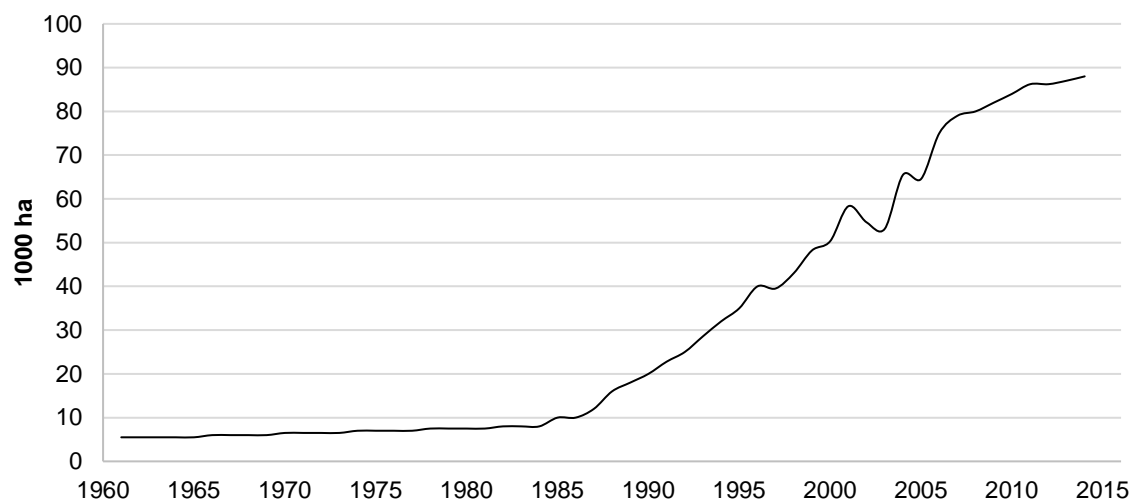
Fresh mango exports mostly come from about 21,000 ha of well managed orchards run by about 6,000 individual farms in the northern regions of Korhogo, Sinématiali and Ferkéssédougou. This is the centre of the Ivorian mango production. However, with climate change, areas in the middle belt of the country (Séguéla, Katiola, Mankono, Bouaké and Tiébissou) are becoming more and more suitable for mango cultivation and currently experience high growth rates. The GlobalG.A.P. database shows by November 2017 1,043 out of about 6,000 producers in Côte d'Ivoire with a valid GlobalG.A.P. certificate (GlobalG.A.P. 2017).

The Ivorian mango season usually stretches from about 15 April to 15-30 June, but never exceeds two months. It starts with the early Amélie variety (5% of fresh exports) and is then followed by the late variety of Kent (90%) and the very late variety of Keitt (5%). A fourth variety, Brooks, is hardly exported fresh, but traded locally and partly also used for drying.

The mango industry started off in the 1980s supported by government policies to diversify agriculture in the face of falling prices for agricultural commodities such as cocoa in the early 1980s. Commercial production started from the mid-1980s, and by 1990, mango exports already reached 1,000 tons and then grew to 7,000 tons in 1995 and 10,000 tons in 2000 (Sangho et al. 2010). Although the growth in area continued after 2000, the two civil wars of 2002 to 2007 and 2010 to 2011 had repercussions on the mango industry as mangoes are mostly produced in the then rebel-held north while being exported via the south, which was at war with the rebels. Since 2013 when Côte d'Ivoire was being rebuilt, exports have again grown continuously reaching more than 32,000 tons in 2016.

The main reason why Côte d'Ivoire made such a breakthrough in mango exports in the 1990s is that Ivorian exporters had understood well before their competitors the major market trends. Mangoes, just like bananas and pineapples some years before, were leaving the mere specialty market to become fruits that were in demand in European supermarket chains all year round. At an early stage, Côte d'Ivoire prepared its infrastructure (railway and seaport) to be able to sea freight mangoes as opposed to countries like Ghana and Mali which were still airfreighting at that stage.

Figure 6: Growth of the Ivorian mango area



Source: FAOSTAT 2017

Today 90% of mangoes are transported by train from Ferkéssédougou directly to the seaport of Abidjan. In Korhogo and Ferkéssédougou mangoes are conditioned, packed and cooled down in 40-foot reefer containers. The phytosanitary export inspection is done already in Ferkéssédougou before the containers are loaded onto the train. The fruits are then carried directly to the Abidjan seaport via the recently renovated railway. In the mango season, Sitarail makes available two railway engines and four trains transporting 11 reefer containers each. A container load is 21,760 kg of packed mangoes. Transport to port only takes 12 hours. Within 24 hours the containers are usually loaded onto vessels and reach Rotterdam or Antwerp after 12 days. Per week, 3-4 vessels of AEL and CMA CGM are available. In addition to the Netherlands and Belgium, the vessels also call at Dunkerque (France), Algeciras (Spain), Tilbury (UK) and Tangier (Morocco).

Prices along the supply chain are fixed by negotiations between the representatives of the different value chain segments at the start of each season. These prices are government enforced minimum prices, but usually they become the prices actually paid during the season. With 0.18 EUR/kg in 2017, field edge prices in Côte d'Ivoire are highly competitive (Mali: 0.15 EUR/kg; Ghana: 0.26 EUR/kg). For about 0.50 EUR/kg the packed and conditioned fruits are sold to the exporter (price: Ferkéssédougou). With only 0.25 EUR/kg for transport and handling from Ferkéssédougou to a port in Europe, mangoes can be offered for as low as 1.00 to 1.40 EUR/kg to importers in Europe. This is usually less than three quarters of the price to be paid for mangoes from Latin America.

The major challenge to fresh exports currently are fruit flies which are classified as quarantine pests in Europe. They contribute to extremely high post-harvest losses estimated at 40% of total production. Fruit flies have also caused 32 intercepted containers in the 2017 season alone. In some years the number of intercepted containers can be as low as 10 (2016), but also as high as 62 (2014) (EUROPHYT).

Mango processing is a fairly new phenomenon in Côte d'Ivoire. In 2016, only 600 tons of fruits were purchased by processors (Nugawela 2017). However, there is currently great enthusiasm among fresh fruit exporters to invest into drying facilities. As of 2017, eleven companies are currently equipped with drying facilities and have started production. In the 2017 season, already 1100 tons of fruits were processed to 75 tons of dried mangoes.

Other fresh mango exporters as well as companies from South Africa and Burkina Faso have expressed strong interest to invest into drying facilities. JAB Fruits (South Africa) has just started to install significant capacity (WATIH 2017, see Annex II (1) and Annex II (2)). The output in 2018 may therefore be more than 300 tons. Following the Ghanaian example, most use high class South African equipment as opposed to the out-of-date 'Atesta' technology used in Burkina Faso. This surge has brought South African marketers to Côte d'Ivoire (M-PAK and JAB Fruits) who sell dried fruits internationally. One facility to produce IQF mangoes and frozen pulp was completed in 2016 by the company MAPACI, but has not yet entered into operation. At present, there are no industrial-scale jams, pulp or single-strength juice operations in Côte d'Ivoire.

The following trends can be currently observed in Côte d'Ivoire to sustain growth and reduce vulnerability:

- Increased fruit drying activities
- Increased export of fruits to feed large processing operations in neighbouring Ghana
- Increased organic certification
- Intensified crop protection to control fruit flies and Bacterial Blackspot Disease (BBS)

### 3.2.3. Major actors and linkages

The strategic national firms in the mango value chain are generally processors: Not only companies who manufacture another product from fresh fruits such as dried fruits, fresh cuts or pulp, but also companies operating packhouses for conditioning of fruits to make them ready for the fresh market.

In **Ghana**, there is more concentration at the level of processing than in Côte d'Ivoire. The reason for this is that investments for drying and fresh cuts are much more capital intensive than for conditioning and packing of fresh fruits. The four strategic national firms in Ghana are: ►Blue Skies (fresh cuts) ►HPW (dried fruit) ►Bomarts (dried fruit) and ►Evelyn Farms (airfreighted fresh export). Peelco has just started to produce year round mango fresh cuts for German supermarkets in 2017. These companies which are all located near Accra in the south of the country are well established and reliable partners for farmers. They initiate innovation and improve common farming practice. Due to the large volumes they purchase they are also the ones who determine the field edge price.

In addition, several companies are 'on and off' often due to lacking market experiences, cash flow shortages or insufficient raw material. These include ITFC (drying facility and packhouse) and Tiberias (packhouse) in the Northern Region; Ohumpong Farms (drying facility), Kobiman Farms (airfreighted fresh export) and Sky-3 Farms (drying facility) in the Brong Ahafo Region, as well as Cotton Weblink (packhouse) in the Somanya cluster in the Eastern Region and Vegpro and Kingdom Fruits (packhouse) in the Volta Region. A third category of offtakers are the 'market women' from the informal sector who are generally buying directly from mango farms without any contract or long-term commitments and sell to the local market. They are commonly paying cash and in most cases slightly more than the large companies do.

However, commercial oriented farmers value the long-term relation they enjoy with the four strategic national firms. HPW, for example, has built up their own team of extension agents who are training farmers to follow an agreed cropping protocol and monitor adherence throughout the season. Suppliers who have honoured the contract agreement with the company for at least two years will get access to the company's input fund which provides chemicals on loan to be deducted from the price paid to farmers at delivery. HPW



also supports half a dozen of demonstration orchards showing innovative technology (e.g. high density planting and intensive pruning) and builds up decentral service gangs who offer pruning and spraying services to farmers. This benefits not only own suppliers, but the entire industry. HPW also partners with the government (MoFA) to test and multiply new mango varieties in order to reverse the dominance of the one variety (82% Keitt) and extend the mango harvesting season. Another example is Blue Skies assisting 12 outgrowers and 86 farmers of the Yilo Krobo Mango Farmers Association to maintain GlobalG.A.P. certification (GlobalG.A.P., November 2017). In addition to contract agreements with suppliers, some offtakers have to take additional measures to protect their supplies. These measures include payment advances and other perks such as paying of school fees for the suppliers' children.

Companies producing dried fruits are a bit more flexible with their sales than fresh cut companies who have to strictly honour contracts with EU importers and supermarkets – a relationship which is not at eyes' level due to the significant market power of large retailers in the EU. Fresh cut companies cannot afford not to deliver in time. More than anyone else they therefore depend on resilient business relationships with their supplying farms.

Although some supply chains in Ghana start to vertically integrate, the sector as a whole is much less well organised than in Côte d'Ivoire and other francophone countries in West Africa such as Mali and Burkina Faso. In Ghana, a National Mango Roundtable, including producer associations, national strategic firms, input dealers and representatives of the Ministry of Agriculture as well as development projects, is meeting about four times a year with all relevant stakeholders. It was initiated by GIZ and is now convened by the apex organisation FAGE. The Roundtable discusses technical issues of concern to the entire industry for instance measures to overcome the low varietal diversity, campaigns for fruit fly and BBS control as well as the testing of innovation such as high density planting and chemical flower induction. Trade related issues discussed concern the removal of bureaucratic barriers for exporters at the airport. Positions are formulated and brought to the attention of government – however only with mixed success. The Roundtable also organised the National Mango Week in July 2017. Several attempts to form a National Mango Association have failed mostly due to strong competition among strategic national firms. Endeavours to unite small and medium-scale farmers into an association without the participation of major strategic national firms have shown not to be able to bring about the necessary change for the industry. It seems that the Roundtable is currently the most appropriate format in Ghana to network and coordinate efforts of industry-wide interest.

Unlike Côte d'Ivoire, certification does not play a big role in Ghana, where currently only 105 farms are GlobalG.A.P. certified (vs. 1043 in Côte d'Ivoire). Only one farm bears a valid organic certificate (vs. 7 outgrower systems in Côte d'Ivoire that are organic certified). The necessary infrastructure for certification (consulting services assisting in establishing quality management systems, farmers trained in internal inspection and audit as well as international auditing firms with in-country staff) is available in Ghana; yet, the markets do not currently reward certification – mostly because the European customers of dried fruits do not yet require certification. Before more producers in Ghana become certified according to one of the sustainability standards, two things need to happen: firstly, market channels need to be developed that oblige producers to be certified (or, better, that provide price incentives for producers to become certified), and, secondly, the costs of certification and preparing for certification need to decrease. Development cooperation has in the past decade laid the foundation for the development of a certification industry. However, by continuing to pay for preparation and certification in lieu of producers, the service costs have been kept artificially high. They will only be reduced if development cooperation discontinues to bear these costs.



The organisation of the mango industry in **Côte d'Ivoire** is very different. All segments of the value chain are horizontally integrated into a number of farmer cooperatives and associations of harvesters and aggregators (pisteurs). Exporters are represented by three associations: Organisation Centrale des Producteurs-Exportateurs d'Ananas, Bananes et Mangues (OCAB), Association Régionale des Producteurs et Exportateurs de Mangues de RCI (AREXMA), and Organisation des Producteurs et Exportateurs de Bananes, Ananas, Mangues et autres fruits de Côte d'Ivoire (OBAMCI). There is no inter-professional association in Côte d'Ivoire. However, different stakeholders (exporter, pisteur and farmer associations) meet at the beginning of each season to regulate the industry and fix minimum prices for different levels of the supply chain.

Some of the farmer cooperatives have grown to become indispensable partners in the supply chain. The big names among the farmer cooperatives are: ►COMAKO (Korhogo) ►UCONAKO (Korhogo) ►COFRUIBO (Bonoua/Korhogo) ►Gninnangnon Cooperative (Korhogo) ►COPROMASI (Sinématiali) ►Wopinin-Wognon Cooperative (Ferkéssédougou) ►Cooperative Fruitière de la Bagoué (Boundiali) and ►Koto-Wobin Cooperative (Tengrela). The first three run own packhouses in Korhogo. The latter five have started in 2017 to process excess mangoes to dried fruits.

Large mango exporters with considerable own production are ►Nembel Invest ►Ranch du Koba and ►Vidal Kaha. In addition, there are about 60 exporting companies which depend on supplies from smallholder farmers. The major 15 companies are listed in Annex II (5). The five companies which purchase most mangoes from smallholder producers are shown in the below table:

*Table 11: Five most important offtakers of mangoes from small-scale farms 2017*

	<b>Company</b>	<b>Volume of fruits purchased (tons)</b>
1	Sodipex	2,420
2	Ivoire Agréage	2,420
3	Tropic Mango	2,310
4	Vidal Kaha CI	2,200
5	SPEM	1,760

Source: WATIH 2017

These five exporters alone contribute one third of the mango exports of Côte d'Ivoire in 2017. In addition to providing market for farmers, they also provide services to smallholders either directly or via the harvesting agents (pisteurs): They pay the school fees of the children of their suppliers before harvest, finance inputs and support the agents of the state extension service ANADER to provide technical support. For agreed plant protection programmes, they usually supply the necessary equipment. Furthermore, they support group formation and subsequent preparation for certification with the establishment of internal control systems. The most important certifications which farmers are assisted in are: GlobalG.A.P. Option 2 (27 farmer groups have valid GlobalG.A.P. Option 2 certificates, GlobalG.A.P., November 2017), Rainforest Alliance, Fair for Life as well as Organic (EU).

The following exporters have gained organic certification for their own operation as well as that of their suppliers: Ivoire Organics (BCS), Agronorm (Ecocert), COPABO (Ecocert), Les Jardins de Koba (Ecocert), Ranch du Koba (Ecocert), SCE Bandama (Ecocert) as well as COPAL (Certisys) according to the List of Operators of Control Bodies registered for Côte d'Ivoire (November, 2017). Through organic certification, a very close relationship between farmers and offtakers evolves: Offtakers need to train their contract farmers on

organic principles and sensitise them for contamination risks. Organic production also requires special inputs such as bio-pesticides and some fertilisers most of which would not be available if not supplied by the off-takers. On the other side of the supply chain, organic trade also leads to very stable relationships with European importers as reliability and traceability are of utmost importance in the organic food sector. The German organic importer, Biotropic, for example, has heavily invested into Ivoire Organics to enable the cooperative to better serve its members.

As a result of the flourishing fresh fruit export, Côte d'Ivoire has developed an industry of supporting firms which also offer their products and services in neighbouring countries: Groupe Bolloré, EOLIS and SAGA are logistic companies without which the rapid and efficient transportation of fruits from the packhouse to the port would not be possible. Eight international certification firms offer auditing services in relation with the EU Organic Standard (Organic Farming Information System) and four companies are on the ground for GlobalG.A.P. audits: TÜV Nord / Integra, BNA, Control Union and Ecocert. An entire industry of tree nurseries, input dealers as well as manufacturers of plastic crates and packaging material (cartons, pallets) depends on the prosperity of the mango industry.

### 3.2.4. Industrial policies and institutions

Industrial policies and the strategies which the sectors have given themselves need to be brought to a match: In a GIZ sponsored mango value chain workshop on 23-24 March 2017, the Ghanaian mango industry decided on the following vision (see Annex II (6), Eiligmann 2017): To become 'a competitive mango value chain adequately meeting market needs'. Targets to be reached by 2022 have been defined as: Doubling production, tripling export and quadrupling farmers compliant with Good Agricultural Practices. The approach is to improve quality and productivity in a sustainable manner.

In a strategic planning workshop of the Ivorian mango industry in 2014 organised by FIRCA in collaboration with ANADER to determine the strategy of the sector 2015-2020, the stakeholders decided on a dual strategy: i) Focus on quality in production and processing (with regards to fruit fly and BBS control as well as certification) and ii) Professionalising sector organisation (assisting cooperatives to process fruits, linking them with research and extension as well as forming an inter-professional body).

However, both workshops did not provide a clear orientation for the industry. At least both strategic papers focused on quality and therefore on upgrading of the sector. A better differentiation from main competitors would have helped to identify own strengths onto which to build the industry. If Ghana pursued plans to grow in sea-freighted fresh exports, it would probably in most years be outperformed by Côte d'Ivoire, Mali and Senegal. At the same time, if Côte d'Ivoire continued to capitalise on the market opportunity for dried fruits only, strong competition from Burkina Faso and Ghana would put much pressure on the price leaving only the larger, competitive companies to survive.

Government policy to support the mango sector in **Ghana** is much weaker than in Côte d'Ivoire. The main policy documents governing the agricultural and processing sector hardly ever mention mangoes. In the policy documents that were still formulated under the old NDC government (ousted in 2016), mango was only one of many crops to be promoted. The policy framework GSGDA II of 2014 vaguely said: 'The prospect for accelerated agriculture transformation could be identified in selected food crops for food security, import substitution, agro-industrial raw materials and export. These are rice and maize, with other selected cash crops and horticultural products, including cocoa, oil palm, cotton, sugarcane, mango, pawpaw, citrus and pineapple.' The implementation plan METASIP II of 2015 wanted to develop 'nine pilot commodity value chains comprising sorghum, rice,

oil palm, maize, mango, pineapple, soya beans, cassava, citrus and guinea fowls'. However, no real action followed.

The largest impact of government policy to support the mango industry in the last ten years came from the Mango Plantation Development Project of the Export Development and Agricultural Investment Fund (EDAIF) from 2009 to 2016 during which about 3,400 ha of mangoes were planted, mostly in the north of the country, albeit with mixed success. None of the packhouses and drying facilities built with EDAIF, MCC or AfDB funds are fully operational, simply because the government decided not to co-fund upgrading investments of existing businesses who have been on the market successfully over a number of years. Government rather supported start-ups or built facilities which after five years of completion are still in the books of the government (example Vakpo mango packhouse) or awarded ownership of a facility to a number of associations with all resulting infighting one can imagine. In short, the four strategic national firms in Ghana have not benefited directly from the public targeted investments into the mango sector despite being the major value creators but only from non-targeted investments (roads, health and education).

The policy measures which have helped most in the past 25 years to develop a thriving processing industry in Ghana were the Ghana Investment Promotion Centre (GIPC) Act of 1994 and the Ghana Free Zones Board (GFZB) Act of 1995. Investors registered with GIPC enjoy tax incentives, free transferability of capital and profits and some protection against non-commercial risks. Companies registered with GFZB enjoy tax exemptions for the first 10 years; an income tax rate after 10 years limited to a maximum of 8%; no tax on dividends for shareholders; possibility of holding up to a maximum of 100% of shares in a free zone enterprise for both domestic and foreign investors; and equal legal status of domestic and foreign investors in free zone enterprises. For investments that are neither in a free zone area nor in agriculture, an income tax rate of 25% is generally applied with hardly any exemptions. Until today, these two acts have provided major incentives for the establishment of processing companies that are driving an increased agricultural production to feed the factories.

The new NPP government in Ghana, in power since 2017, was fast to initiate popular programmes which, however, are not likely to stimulate investments into the mango value chain. The flagship programme 'Planting for Food and Jobs' is not much more than a plan to distribute subsidised seeds and fertiliser for staple crops with the revival of the National Buffer Stock Company which carries out government purchases of farm produce. It will cost EUR 140 million for 2018 (2018 Budget Speech).

Other government programmes might be more suitable to strengthen the mango sector. The One-District-One-Factory (1D1F) programme aims to promote Ghana's industrial development in all districts, based primarily on private investment. The majority of investment funds will come from Chinese and Indian sources with – in the case of China – the financier (the Chinese National Building Materials and Equipment Import and Export Corporation) also building and equipping the factory. China has promised USD 2 billion for this programme. According to the Ministry of Trade and Industry about half of the investments are foreseen for agricultural processing. As a contribution to the 1D1F Programme, the National Entrepreneurship and Innovation Plan (NEIP) was launched in June 2017 to support start-ups and small business owners. It pays special attention to agriculture and agricultural processing. Financing for young entrepreneurs will be provided by the Ghana Exim Bank. The 2018 budget makes provisions of EUR 10 million for this. Another programme, 'Planting for Jobs and Investment' explicitly mentions mangoes in addition to other six cash crops (cashew, shea, citrus, cocoa, rubber and oil palm). The

programme aims to support 10,000 to 20,000 farmers in cultivating an average of 10 acres of cash crops within a period of four to ten years.

All these programmes are to integrate into the 'Akufo-Addo Programme for Economic Transformation' from 2018 (2018 Budget Speech) which, among others, is supposed to:

- Ramp up investments under the Planting for Food and Jobs Programme
- Provide a EUR 80 million fund for agriculture financing and crop insurances
- Implement a grant funding facility for agribusiness start-ups
- Provide technical assistance and tax incentives for agro-processing and market access

It is to be seen to which extent the lead companies in the mango sector will indirectly benefit from this programme – or whether it helps to get further strategic national firms established. All in all, the Ghana government is under pressure to take action as companies such as Blue Skies (largest mango processor) already warned government to relocate to Côte d'Ivoire should Ghana's competitiveness not improve.

**Côte d'Ivoire's** government has shown much more direct support to the mango industry. After a decade of socio-political and economic crisis the country returned to stability and economic development in 2012 with annual growth rates of around 8% until now. These results are due to different industrial and institutional policies in the agricultural sector. The fundamental concerns of the government are to maintain the economy on its growth path and make growth more inclusive. The two major policy elements in the mango sector have been a i) focus on quality in production and processing and, ii) the establishment and support of institutions governing the mango industry.

- (i) *Focus on quality in production and processing:* In fresh mango exports, Côte d'Ivoire suffers, as the other West African fresh mango exporters, too, from wide spread fruit fly infestation, especially towards the second half of the season. Fruit flies can be easily controlled with bait sprays some of which are even permitted in organic agriculture (such as GF 120). In 2015, the Ivoirian government invested EUR 2.5 million to subsidise bait products (GF 120) against fruit flies increasing mango exports from 22,769 tons in 2015 to 32,628 tons in 2016. To get mango processing started in the country, the government used funds available from a World Bank funded West African agricultural productivity programme in 2015 and 2016 to equip six farmer cooperatives with state-of-the-art South African mango dryers. This has led to further investments by the private sector and attracted international dried fruit buying companies to Côte d'Ivoire (see Annex II (3)). Ghana, on the contrary, had decided not to include mango into the commodities supported by the said World Bank assisted programme.
- (ii) *Establishment and support of institutions governing the mango industry:* The state has put in place an institutional policy to respond efficiently to the demand for support from actors in the mango sector. The multi-institutional system includes:
  - The Chamber of Commerce and Industry of Côte d'Ivoire (**CCI-CI**) and the Export Promotion Agency of Côte d'Ivoire (**APEX-CI**) facilitating international trade opportunities and promoting national economic potentials. For the mango sector, CCI-CI and APEX-CI strongly promoted dried mangoes and the fruit's other by-products.
  - **Private sector companies** for input supply. By using established companies for the importation and distribution of subsidised inputs, private sector companies were strengthened and not exposed to unfair competition from state operations.

- The Interprofessional Fund for Agricultural Development (**FIRCA**) as a funding agency for the agriculture sector. FIRCA which is an agency of the Ministry of Agriculture plays an active role in fostering the processing of mangoes and pineapples produced in Côte d'Ivoire. It aggregated small cooperatives of mango growers into larger groupings, trained them in processing and management techniques and then equipped them with fruit-drying equipment and linked them with international buyers.
- The National Agency for Rural Development (**ANADER**) – privatised since 1999 – providing extension services. In collaboration with the Directorate of Plant Protection, Control and Quarantine (**DPVCQ**) and the National Centre for Crop Research (**CNRA**), ANADER rolled out an extension programme with a focus laid on controlling diseases and pests affecting mangoes as well as safe use of pesticides.
- Government enforcement of a minimum farm gate price set by a meeting of mango stakeholders. The Food Commodities Marketing Office (**OCPV**), which is responsible for collecting information on the marketing of food products, is running this price control service for fresh mangoes.

The Ministry of Agriculture and Rural Development is providing the overall policy support and public funds to ANADER for extension which need to be complemented by payment from producers. The ministry is guided by the National Agricultural Investment Programme (**PNIA**) with its four pillars: Food security; sustainable management of cash and export crops; private sector engagement; and agricultural sector reforms including the restructuring of agricultural professional organisations and the implementation of the land law.

### 3.2.5. Development cooperation programs and strategies

The mango sector in Côte d'Ivoire has not enjoyed targeted donor support like Ghana due to historically higher income levels as well as political conflicts and two civil wars. Especially US and German Development Cooperation (DC) supported and still support the mango sectors in Ghana and Côte d'Ivoire. In the 1990s, **Ghana** started to diversify its export base and both, US and German DC started to support non-traditional exports (cashew, pineapples, mangoes, pawpaw and handicraft). Since 1996 and with funds from a USAID Food Security Project, the church-based NGO ADRA supported 2000 farmers to establish 1,000 ha of mango plantations in the Somanya cluster (Eastern Region) intercropped with staple food crops. This was a very successful investment as Somanya has today become the heartland of commercial mango production in Ghana.

It then took some years until 2005 when USAID decided to launch a Trade and Investment Program for Competitive Export (TIPCEE) to reinforce the fresh produce sector – no longer under the aspect of food security, but trade facilitation. TIPCEE supported not only mango production, but also other crops with export potential as pineapples, papaya, horticultural products and cashew nuts. The USD 30 million project (2004-2009) supported or initiated institutions such as three mango producer associations in the Somanya cluster, the National Horticultural Taskforce (NHTF) as well as the Federation of Associations of Ghanaian Exporters (FAGE). It assisted smallholders to obtain certification (EuropGAP at that time), helped to organise the first Ghana Mango Week (together with the German Development Cooperation) and presented a new face of Ghana's horticulture industry at the Fruit Logistica fresh fruit trade fair in Germany in February 2006. Since then, Ghana has been at Fruit Logistica every year with an own stand organised by FAGE and almost always funded by the Ghanaian Export Development and Agricultural Investment Fund



(EDAIF). TIPCEE's successor project ADVANCE only had a couple of years to follow-up on many of the export promotion activities, before USAID decided to concentrate all its development cooperation in agriculture in the north of Ghana in order to place a greater emphasis on poverty reduction.

The German funded Market Oriented Agriculture Programme (MOAP) which had started to work with mango farmers in the Brong Ahafo Region in 2004 took over and became the main interlocutor of the Ghanaian fresh produce industry from 2010. MOAP was using a value chain approach and concentrated on pineapples, mangoes, citrus and chilli. It was not purely export focused, but also supported small juice makers producing for the local market through their association FPMAG. MOAP did not provide any financing, but only capacity building. MOAP's main achievements in the mango value chain was to:

- Develop an entire training curriculum including extension films on crop protection, orchard establishment and pruning as well as harvesting and post-harvest handling together with the fruit drying company HPW
- Facilitate the establishment of farm service providers in the area of spraying and pruning services
- Train GlobalG.A.P. Farm Assurers, internal inspectors and auditors on GlobalG.A.P., help establish an auditing firm for GlobalG.A.P. (SmartCert) and support farmer associations to become prepared for certification
- Support varietal diversification by facilitating the import and testing of suitable scions as well as multiplication by MoFA and HPW
- Advise mango processors in matters relating to technology, investment planning, certification and management

A Development Partnership between GIZ and HPW alongside MOAP was particularly successful. This project helped the company to build up an own extension service and a revolving fund to provide needed inputs to supplying farmers. Relevant extension messages were developed for the entire industry and piloted with selected farmers.

TIPCEE's and MOAP's technical assistance measures were complemented by three projects with considerable resources – all implemented by the Government of Ghana: The World Bank financed Horticultural Export Industry Initiative (HEII), the Export Marketing and Quality Awareness Project (EMQAP) financed by the African Development Bank (AfDB) and the Agriculture Project of the US Millennium Challenge Corporation (MCC). HEII (2004-2006) constructed a fruit terminal in the port of Tema (Shed 9) which was inaugurated with two years delay in 2008. The facility which was mainly built for the export of bananas and pineapples has cold storage to cool down fruits as well as facilities to plug-in full reefer containers and keep them cool while waiting for the vessel. EMQAP constructed an oversized packhouse in Vakpo (Volta Region) for mangoes and pineapples which was completed in 2013, but has never been operational since then. This "White Elephant" is still (2017) on the books of the Ministry of Agriculture (MoFA) although it should have been transferred to the private sector since long.

The MCC is an instrument of the US Congress available to selected countries with 'good policies'. The MCC Agriculture Project carried out by the Millennium Development Authority of the Republic of Ghana (MiDA) was endowed with USD 189 million to boost agribusiness between 2007 and 2012. Three public packhouses were constructed – two for pineapples and one for mangoes in the Somanya cluster – to serve the needs of smallholder farmers. As it turned out later, however, this was not a good approach as public packhouses seem to be difficult to manage or will at the end not serve the interest



of small producers. Smaller, simpler and more privately owned packhouses would have done a better job.

The construction of the Perishable Cargo Centre (PCC) at Kotoka International Airport by MiDA was a very useful investment which improved logistics and helped to maintain the quality of exported fruits and vegetables much better than the existing open structures. However, the success factor was the willingness of a consortium of private companies (the cargo handling firm Airghana and the vegetable producer Vegpro) to invest another USD 1.5 million to compensate for faults and defects caused by poor construction of the facility which had costed USD 3.2 million and was supposed to be turnkey (Arndt 2013).

From 2014-2017, another USAID technical assistance project, the West Africa Trade and Investment Hub (WATIH), started its activities in Ghana and Côte d'Ivoire in the area of mango trade promotion. Value chain actors in Ghana mainly benefitted from networking activities with peers from other West African countries. In Côte d'Ivoire, the first-ever mango symposium was organised in Korhogo in April 2017.

Donor projects seem to be more successful if they can broker partnerships with strategic national companies in the mango sector. The challenge is to identify those companies willing to co-invest as opposed to the common attitude of expecting public grants for private businesses. GIZ was able to forge such a collaboration with HPW in Ghana. In Côte d'Ivoire, both GIZ and WATIH entered into Development Partnerships with Nembel Invest, a 340 ha mango farm in Ferkéssédougou. In the cooperation with GIZ, 50 lead farmers (trainers) and 500 smallholder mango producers were trained to be able to supply fruits to Nembel. Moreover, best management practices especially in the area of pruning as a key factor for improving yields were developed and piloted. The partnership also helped Nembel to offer a health programme for employees and outgrowers to benefit from regular consultations with doctors and from disease preventing materials, such as mosquito nets. WATIH partnered with Nembel for the certification of farmers to meet food safety standards.

Targeted donor support in combination with strong government institutions and ongoing private investments have made the Ivorian mango sector the best-organised and most modern in the region. The government of Côte d'Ivoire – in many cases through FIRCA – used development bank loans in a targeted manner to establish necessary infrastructure which has led to the sharp rise in fresh exports – including the railway transport of reefer containers and port facilities. As opposed to Ghana, infrastructure was not created to be first in government ownership and only later transferred into private hands for management, but it was planned and designed with the private sector in public-private partnerships. An example is the well-functioning and cost efficient railway transport operated by Sitarail, a concession of Bolloré Railways managing the railways linking Côte d'Ivoire and Burkina Faso and moving 900,000 tons of freight a year. FIRCA recently was also instrumental in the use of funds of the World Bank financed West Africa Agricultural Productivity Programme (WAAPP) to equip six farmer cooperatives with state-of-the-art mango dryers, each unit costing only EUR 40,000 – an investment not too large to be managed by a farmer cooperative, but creating strong impact in the mango value chain.

EU cooperation both in Côte d'Ivoire and Ghana was mainly targeting phytosanitary issues in view of the high number of mango interceptions at the EU borders. The EU-funded COLEACP offers support on demand to individual exporters and farmer groups for training and certification in food safety along the mango value chain. The Competent Authorities are also supported to better implement SPS standards. In addition, EU is supporting the regional 'Fruit Flies Monitoring and Control' project in West Africa implemented by the Regional Agency for Agriculture and Food of ECOWAS. The project is deployed in eight

countries of ECOWAS and has helped to create awareness of the fruit fly problem and solutions such as bait spray.

### **3.2.6. Social and ecological sustainability issues**

Mango production and processing have significant potential to create both income and employment for the rural poor and an ecological barrier against the effects of climate change and thereby contributing to soil and water conservation. Mangoes grow well in the sub-humid and semiarid zones of Ghana and Côte d'Ivoire – areas which are prone to soil degradation especially with climate change leading to more severe drought spells and heavier rainfall with increasing incidences of flooding. Tree crops have certain properties which contribute to ecological sustainability in these circumstances:

- They shade the soil in the dry season and in this way maintain soil moisture and thereby also soil life.
- Their branches and leaves reduce wind velocity and in this way keep soils from drying up and eroding.
- Their roots hold the soil against flood erosion and recover leached nutrients from lower soil levels.
- Their roots also increase infiltration rates of run-off water leading to higher groundwater tables which in turn benefit rural communities who depend on well water.
- Trees also provide shelter for insects and birds and thereby reduce vulnerability against pest outbreaks.

Planted trees replace the forest or bush fallow of the traditional, sustainable slash-and-burn agriculture. With an increased pressure on land, fallow periods become shorter and eventually disappear. In this situation, mango orchards can very well substitute for the positive effects of forest or bush fallow and avoid land degradation which occurs if land in the sub-humid and semi-arid tropics with their long and pronounced dry seasons are not lastingly covered. Mango tree plantations also have functions in water conservation as shown above. These positive environmental effects outweigh all potential negative impacts which derive mainly from chemical crop protection. In some areas, the use of non-selective insecticides has drastically reduced beneficial insects and led to pest outbreaks (e.g. infestation of trees with mango mealybugs). However, good agricultural practices allow to forego the use of such insecticides. The major mango pest, the mango fruit fly, is best controlled with a bait which attracts and kills fruit flies selectively. Diseases like BBS are best restricted by shelterbelts planted around mango orchards. These shelterbelts made of a variety of bush and tree species also improve biodiversity and yield fruits and firewood. In South Africa shelterbelts are common practice for commercial orchards and exposure of mango farmers to the South African experience has made shelterbelts one of the topical issues in the mango farming community.

Especially farmers with limited land try to integrate annual crops with tree crops. Tuber crops such as yam, cocoyam and ginger, for example, grow well in combination with a mangoes as can be observed in some areas of Ghana. Other farmers use their mango orchards as a pasture for sheep and poultry or as bee food. As mango can very well be integrated with tuber crops, mango production hardly competes with staple food cultivation. The factors keeping farmers from planting mangoes are not related to food security considerations, but are simply a lack of capital and secured access to land. During establishment, mango orchards require investments into weeding and bushfire control as well as pruning and crop protection while revenues are only expected five years after establishment. A reliable cash flow for the first five years therefore need to be made

available – either through affordable loans or government grants. The government programmes so far supporting the establishment of mango plantations have not been very successful as they limited support only to the year of establishment leading to a number of abandoned orchards destroyed by bushfire and grazing animals or with poor weeding, pruning and BBS infection. In addition, government programmes tend to support preferably “absentee farmers”, i.e. usually well-off individuals residing in towns, instead of those who live close by their orchards in rural communities.

The establishment of mango orchards requires not only considerable finance, but also land tenure rights which – except for the matrilineal communities in the middle belt of Ghana and the east of Côte d’Ivoire – often only men of a certain age have, limiting the opportunities for women or young adults. As shown above, the number of farms growing mangoes commercially is only 2,000 in Ghana and 6,000 in Côte d’Ivoire and therefore a very small minority among the farming population.

Large orchards per se do not jeopardise social and ecological sustainability. On the contrary, to be effective in soil and water conservation, orchards require a certain size. In addition, large orchards theoretically create employment, reduce the costs of applying good agricultural practices and ease access to market by reducing transaction costs. However, the reality shows that many large orchards of ‘absentee farmers’ are ill maintained and that smallholders investing their time in the management of their close-by orchard are usually among the best performers. Larger well-managed orchards are rare (e.g. Bomart Farms and Alphonse Farms in Ghana as well as Nembel Invest, Ranch du Koba and Vidal Kaha in Côte d’Ivoire); however, they could have a positive effect on technology transfer to smallholder farmers as well as on the livelihoods for the farm workers if the public sector and development cooperation leverage them for developmental purposes. The development partnership between GIZ and Nembel Invest serves as an example. ‘Land grabbing’ by large commercial farms has not been an issue so far and is also unlikely to be in the future due to the relatively intensive management requirements for mango orchards in order to be successful (pruning, flower induction, spraying, weeding, irrigating, harvesting, etc.). Unlike oil palm, rubber and jatropha, mango is therefore not a typical plantation crop into which large foreign farming companies invest in.

As trees are so important in sub-humid and semi-arid West Africa, the question is how mango compares with other tree crops that could also be grown, such as cashew, shea and moringa. Which tree crop is currently contributing more towards soil and water conservation (or has the potential to) and at the same time brings about income and employment to rural communities? Ghana has four times more area under cashew than mango. In Côte d’Ivoire, where the crop is grown by 250,000 farmers (Kone 2010), the area under cashew is fifteen times higher (FAOSTAT 2017; CCA 2017). Cashew is therefore much more significant for ecological sustainability than mango. The same is true for sheanut trees. Moringa has a great potential, especially in Ghana where a number of processors have emerged, but is still insignificant in terms of area.

All these tree crops are also important for rural incomes and employment and have the potential to have an even larger impact. However, as shown above, it is often not the agricultural production of these crops which creates incomes. Social benefits rather arise from the upstream and downstream side of the value chain where many businesses support tree crop farms. These businesses are often fairly labour intensive: Tree nurseries, farm services, harvesters, aggregators, packhouses as well as processing facilities many of which need a huge workforce. Most of the value in the mango value chain is generated in rural areas, at least until the product exits the country. This is money that is very likely

to be also spent in rural areas supporting the rural production of all kinds of goods and services.

The Blue Skies factory in Ghana, for example, employs 3,000 staff to produce only 1,700 tons of fresh cuts per year and HPW has 700 workers for 670 tons of dried mangoes per year. As opposed to Ghana with processing facilities in the wealthier South of the country, the emerging mango drying facilities in Côte d'Ivoire are established in the mango belt in the northern part of the country which has a higher poverty incidence (52% to 73%) than the rest of the country (46% national average, République de Côte d'Ivoire, 2015). When the three cooperatives of Korhogo, Boundiali and Ferké started to produce dried mangoes in 2016, 200 employments were created (for an output of only 16 t) 80% of which were for women (WATIH 2017).

In Côte d'Ivoire, the social benefits of mango processing are, however, outstripped by cashew processing due to higher output levels: According to the Cotton and Cashew Board of Côte d'Ivoire (CCA), despite over 90% of the nuts being exported as raw cashew, the remaining 40,000 tons processed in the country have created 4,900 factory jobs and another 4,000 jobs elsewhere in the sector. In Ghana, the gathering of shea nuts and their decentralised processing create far more jobs than the mango value chain: The Shea Network Ghana (SNG) estimates that several hundred thousands of women in the rural communities collect and process shea nuts.

The impact of the mango sector on employment is put into perspective since as not all jobs created are permanent and formal, i.e. subject to social security benefits. The Ghana Labour Act of 2003 makes it very difficult to lay off workers because of decline in orders. Companies therefore try avoiding the employment of workers for more than 6 months which is the period requiring a written work contract that entitles workers to protection under the Labour Act. This, however, excludes workers also from social security benefits. As long as the Labour Act does not allow for the termination of employment due to the order-book situation, companies will continue to avoid formal work contracts.

### **3.2.7. Impact of the EPAs**

In August 2016, Ghana ratified the bilateral iEPA with the EU, which was subsequently approved by the European Parliament in December 2016. The iEPA with Côte d'Ivoire has been in force since September 2016 after it was approved by the European Parliament and ratified by Côte d'Ivoire. The EPAs provide DFQF access to the EU market for an unlimited period for all imports originating in Ghana and Côte d'Ivoire. In return, Ghana and Côte d'Ivoire liberalise tariffs on selected goods of the EU over a period of up to 20 years, which also includes inputs used in agriculture and processing as well as machinery. The elimination of import tariffs are supposed to reduce production costs for local producers in Ghana and Côte d'Ivoire, both in agriculture as well as in processing. However, the impact of the EPAs on reducing input costs for farms, farm service providers, packhouses and food manufacturers is minimal. Insecticides, fungicides and herbicides (HS 3808), fertiliser (3101-3105) and farm machinery imports (8701, 8432, 8433, 8436) were already duty free without the EPAs. On the other side, some inputs for processing, such as sugar (170112) have been excluded from liberalisation and still bear a 20% import duty after the commencement of the EPAs. The same is true for PE packaging material (392310). Therefore, in general, input costs for agriculture and processing will hardly be affected by the EPAs.

One area where the EPAs might help mango processors is the abolishment of duties on glass jars and bottles (7010). Both, Ghana and Côte d'Ivoire do not have any glass industry. Companies producing juice for the local market mostly use recycled bottles as

the importation of glass bottles is expensive and entailed a 10% duty which has fallen with the EPAs. Companies could now also try to process mangoes into achar, jam or preserved fruits filled into jars both for export as well as domestic markets. The tariff reductions could nonetheless also impede the establishment of a domestic glass industry.

On the output side, the effect of the EPA is also limited (Table 12). Fresh and dried mangoes, the major current mango export products from Ghana and Côte d'Ivoire, have enjoyed DFQF access to the EU market without the EPA as well (the EU-MFN-tariff for these products is set to zero). The major benefit of the EPA would therefore not be the elimination of tariffs, but the EPAs' development chapters on SPS measures to assist Ghanaian and Ivorian exporters to comply with international standards.

Some few products, however, for which a duty was imposed by the EU common market before the EPA, can now be exported to the EU duty free. Consequently, a rise in the production of such products (mango pulp, juice and concentrate as well as frozen mangoes, preserved mangoes, jam and achar) is possible. As mango pulp from India, however, may still be cheaper in Europe due to its high competitiveness, it is more likely to see Ghana and Côte d'Ivoire produce more specialty products such as not-from-concentrate juice, mango jam and mango achar, preserved mangoes as well as frozen mangoes destined for the EU market.

Table 12: Tariff rates to access the European market (with and without EPA)

Product	Tariff Code	Duty under EPA	Duty under GSP
Fresh mangoes	0804500010	0%	0%
Dried mangoes	0804500010	0%	0%
Osmotically dried mangoes	2008975190	0%	7.5%
Frozen mangoes	0811908500	0%	3.1%
Frozen mangoes with sugar	0811901100	0%	9.5% + 5.30 EUR/100 kg
Mango pulp	2007999310	0%	11.5%
Mango juice	2009899799	0%	7.5%
Mango juice concentrate	2009893470	0%	17.5% + 12.90 EUR/100 kg
Mango vinegar	22090091	0%	3.50 EUR/hl
Mango jam	2007993943	0%	20.5% + 23.00 EUR/100 kg
Mango chutney	20019010	0%	0%
Mango achar	2001909221	0%	6.5%
Preserved mangoes (e.g. in pineapple juice)	20089776	0%	8.4%
Fruit bars with mango	2008979790	0%	8%

Note: Without EPA = Generalised Scheme of Preferences, GSP  
Source: TARIC 2017

The only mango product playing a role on the domestic markets in Ghana and Côte d'Ivoire, mango juice and juice mixes with mango (20098 and 20099), are excluded from liberalisation and still bear 20% import duty. This favours domestic juice producers over juice imports.



### **3.3. SWOT analysis**

#### **3.3.1. Strengths**

- The demand for both conventional and organic fresh and dried mangoes is still increasing. West Africa's markets, the EU and the Middle East, continue to grow by more than 5% annually. West African mangoes are appreciated for their flavour, which is partly due to the close proximity allowing for slightly later harvesting. Several exporters still get more orders from clients than they can supply.
- The dominant varieties (Keitt in Ghana and Kent in Côte d'Ivoire) are both suitable varieties for longer sea transportation. In addition, fruits of these varieties are large and with low fibre and therefore much appreciated by the fresh cut industry. They are ready for the market just after Peruvian mangoes providing an opening to export mangoes to the EU market.
- Land is available for increased production, in both countries especially in the middle belt and in Ghana due to the absence of cotton production also in the North. Water sources for potential irrigation are also accessible: Mostly ground water, but also the Bandama River in Côte d'Ivoire and the Black Volta in Ghana.
- Both countries have had strong recent investments into state-of-the art European and South African technology for their processing facilities: Packhouses, port handling facilities, drying facilities and fresh cut factories – meeting the requirements of international food safety management standards.

#### **Ghana's specific strengths**

- 25 years of political stability throughout the country have attracted foreign investment and secured trade agreements. As a result, large processing companies with access to foreign capital and expertise have emerged: Blue Skies, HPW, Bomarts, ITFC and Peelco.
- The mango production zone in the south is close to other fruit production sites (pineapples, bananas, coconuts, papaya, passion fruits) allowing for a good capacity utilisation of stationary processing facilities and making investments more profitable.
- Contrary to its neighbours, Ghana's south has a unique second mango season in January and February in addition to its main season (April-May in the north, May-June in the middle belt and June to July in the south) allowing not only for the export of high-value airfreighted mangoes, but also an extended supply of fruits to the processing companies.

#### **Côte d'Ivoire's specific strengths**

- Côte d'Ivoire has abundant supply of Kent, the most appreciated variety on the French market. Kent is also the dominant variety grown in Peru and therefore complements well Peruvian supplies.
- In Côte d'Ivoire, a number of important exporters also manage own large and modern plantations (Nembel Invest, Ranch du Koba, Vidal Kaha, SPEM / Vergers du Nord). This facilitates the transfer of improved technology to smallholder farmers from whom they source.
- About 60 exporters are well established in Côte d'Ivoire with strong experience in exporting fresh produce making them also important actors in Senegal's fresh export. They enjoy an organised supply network with producers to whom they provide



services. This secures export volumes during the season. 25 packhouses are operational in Côte d'Ivoire out of which 12 are very large with Spanish equipment. Most key exporters have invested into their own packhouse facilities.

- Transportation of packed mangoes to the port of Abidjan is via road and rail, 240 km of the road link being a 4-lane motorway. The road between Korhogo and Bouaké is currently being upgraded to be completed before the mango season 2018.
- From 2015-2017, a number of key fresh exporters as well as companies from South Africa (JAB Fruits) and Burkina Faso (Timini/Fruitex) have made major investments into drying of fruits.
- Together with Burkina Faso and Mali, Côte d'Ivoire's mango industry is the best-organised in the region. A minimum price is fixed before the start of the season and enforced by government. This reduces transaction costs along the supply chain and assures a stable revenue for the farmer. Other forms of government support have been subsidies in 2015 and 2016 for the supply of agro chemicals to all producers. FIRCA as a public sector organisation has invested into dryers and attracted buyers. ANADER provides agricultural extension for mango producers financed by government, donor agencies and private sector.

### **3.3.2. Weaknesses**

- Estimated post-harvest losses are 30-40%, mainly due to fruit fly contamination and the limited local market for low-grade mangoes.
- Access to finance is inadequate at all levels of the value chain. Banks are not involved in financing small and medium scale production and processing. Affordable investment loan products are not available.
- Even if sufficient land is available for new orchards, it can hardly be accessed by young adults and women both for financial and cultural reasons. In addition, land tenure is not secure and any time can be challenged by local families. Land registration is still ongoing in Ghana and Côte d'Ivoire.
- Ghana and Côte d'Ivoire both lack an inter-professional organisation or a national mango association as a single national voice of the mango value chain

### **Ghana's specific weaknesses**

- The price of mangoes in Ghana is expensive and in the long run not competitive due to relatively high labour costs, high competition among offtakers as well as small orchard sizes, low yields and recent losses due to BBS disease.
- The dominance of Keitt (82%), which is a very late variety, leads to poor utilisation of processing capacity on one hand and oversupply of fruits during a short period on the other.
- Ongoing urbanisation around Accra is now reaching the mango cluster of Somanya preventing expansion and leading to land conflicts among the different owners of family land under mango cultivation.
- Labour is relatively expensive especially in the processing belt close to Accra. In addition, the labour legislation makes it difficult for companies to lay off staff leading to a situation where large parts of the workforce are replaced every six months to avoid permanent employment.

- Development funds have not been wisely invested in the past resulting in oversized packhouses which are partly far from the areas of production. Apart from these investments, there is very limited government attention to the mango sector (input subsidies in the government programme 'Planting for Food and Jobs' only for staple crops).

### **Côte d'Ivoire's specific weaknesses**

- An overreliance on government for the provision of agrochemicals to control fruit flies has led to an upsurge of fruit fly infestation in 2017 as the products were delivered late which is not uncommon where agricultural producers rely on public funding.
- With 33 interceptions in the EU in the 2017 season, Côte d'Ivoire experiences serious phytosanitary problems. Interceptions directly impact on the image of Ivorian mangoes among importers. In addition, together with earlier rains which affect the quality of mangoes, fruit fly infestation has shortened the harvesting season. Large areas of untreated local mangoes which mature earlier and favour pest multiplication make fruit fly control difficult.
- Aging orchards could reduce volumes available for export. Competition for land in the north with cotton and cashew limits the possibilities to establish new orchards.
- All mango factories are located in the mango belt in the north of the country. Qualified work force cannot be maintained outside the mango season due to the absence of diversification strategies. Staff has to be laid off and retrained every year again.
- Though logistics for transportation to the port have been optimised, there is too low storage capacity at consolidation (Ferkéssédougou) and port (Abidjan) for plugging filled reefer containers.

### **3.3.3. Opportunities and threats**

- There are still opportunities to invest into new orchards in order to expand (Ghana) and rejuvenate (Côte d'Ivoire) production. However, care must be taken to select varieties which can compete in the decades to come as varieties are subject to trends in the importing markets. For fresh exports, a recent trend especially on the UK market away from Kent and Keitt to Thai, Pakistani and Indian varieties may be considered. Peruvian producers are currently replacing their Kent orchards with Rapoza which was found to have an excellent taste, good drying properties and matures earlier than Kent and Keitt.
- Irrigation is a major factor limiting yields and new orchards should be equipped with irrigation. However, investments into pumping (e.g. solar pumping) and drip irrigation will only pay back if low-cost investment loans can be made available.
- High post-harvest losses provide opportunity for processing of second grade crop into pulp. This is best done with the help of mobile pulping facilities available in 40' containers on trailers (with pasteurisation and aseptic packing). A threat to this opportunity are low prices in years of good yields in India which would make pulp nearly unsellable internationally and limit the sales to West African markets. Again, this can be seen as an opportunity since mango juice in glass bottles or Tetra Paks is considered to be the most suited mango product to help the domestic demand for mangoes grow. Competition, however, may come from Mali and Burkina Faso who have already invested into pulp making.

- Another form of diversification is drying. Here, again, mobile drying facilities with units each consisting of a 40' and a 20' container can be used which allow for moving between locations with different harvesting seasons. The demand for dried mangoes, especially organic, is fast growing and especially the US market offers good opportunities for West African exporters. Average prices for Mexican dried mangoes in excess of 10 USD/kg indicate that West Africa could be competitive in this market. Prices in Ferkéssédougou delivered to exporters can be as low as 6 USD/kg providing an attractive margin for exporters. However, with increased drying, competition for affordable raw material will become an issue soon as a consequence of limited supply.
- Post-harvest losses are best reduced through diverse processing using even mangoes that cannot be dried or transformed into pulp. Mango vinegar, kernel oil or achar from green, fallen fruits are mango products hardly known in West Africa. Other specialty products are not-from-concentrate juice, mango jam, preserved mangoes and frozen mangoes destined for the European market and enjoying duty free access with the EPAs in force in Ghana and Côte d'Ivoire. The production of such products would mean for industrial development that firms in Ghana and Côte d'Ivoire learn broader and higher value added functions in the value chain.
- Significant potential also lie in the increase of regional trade both in fresh and processed mangoes. Processors from Senegal to Nigeria buy not only fresh, but also processed mangoes (dried fruits and pulp). The advantage of regional markets is that they usually pay cash, are less critical on quality and not nearly as complicated in terms of logistics. These advantages often compensate for the lower prices obtained. However, borders in the ECOWAS zone are unpredictable and even if products are supposed to move freely under the Trade Liberalisation Scheme, unjustified fees must often still be paid to customs officers.
- Organic and Fair Trade certification along the value chain, even for dried mangoes and mango pulp, allow for higher prices. Other standards like GlobalG.A.P. including GRASP, Rainforest Alliance, Tesco Nurture, etc. just provide market access without any effect on price. The opportunity for certification is impeded by often excessive costs for preparing farmer groups as well as auditing them since most value chain actors are unaware of the multitude of suppliers for these services.

### **Specific opportunities in Ghana and their threats**

- Ghana's prime opportunities lie in further strengthening the processing sector and diversifying the product range for export: Drying, freeze-drying, fresh cuts, preserved fruits, achar, jam and fruit bars. A great potential lies in capturing the US market, especially with organic dried mangoes as well as freeze-dried fruits. To better utilise processing capacity, more mangoes should be sourced from other West African countries (Côte d'Ivoire, Togo, Burkina Faso and Senegal) where the crop is cheaper and matures in different seasons.
- However, the opportunity to expand fresh airfreighted exports from December till February (minor season) when mangoes are in high demand in Europe and the Middle East should still be seized – also by using technology and variety to extend the season. The minor season can also be targeted in the middle belt with the help of pruning and chemical flower induction as recent pilots have shown.
- Ghana is the only country in the region with a dominance of Keitt. The fresh market as well as processing companies could make good use of organic Keitt as the variety produces particularly large and fibreless fruits. Organic technology adapted to Keitt

should be developed by pioneers. A threat to organic certified production is contamination from drift in areas with a high mango density.

### **Specific opportunities in Côte d'Ivoire and their threats**

- Côte d'Ivoire's foremost opportunity lies in the expansion of fresh exports to satisfy growing markets in Europe and the Middle East. Multiple certification demands of retailers (different social and environmental standards not reflected in a higher purchase price) can put a threat to this opportunity. Another threat is posed by the interception of fruits in the importing countries due to harmful organisms which may spoil the reputation of mangoes from Côte d'Ivoire or, in the worst case, lead to an import ban.
- The development of new orchards in the middle belt and as far south as Yamoussoukro provides opportunities to be closer to the pineapple processing factories and packhouses in the south of the country and improve their capacity utilisation. Vice versa, opportunities exist to bring banana and pineapple production to the north into the mango zone in order to better use existing processing and packaging facilities. Fresh bananas and pineapples are in high demand in Mali and Burkina Faso. Pineapples can also be processed in the recently established drying facilities.
- Actors in Côte d'Ivoire have invested heavily into fruit drying, and the 2018 output may be as high as 300 tons. On one hand this provides opportunities for the Amelie and Brooks varieties which are difficult to export fresh, but make good dried fruits. On the other hand, with Burkina Faso and Ghana being very strong in drying, there is a threat of oversupply and consequently falling prices. Investments into processing in the traditional mango belt of Côte d'Ivoire may also be threatened by the still fragile political situation and the increasing number of armed robberies in the north.
- The establishment of an inter-professional organisation should make it possible to draw up the political compass of the sector and facilitate the achievement of the objectives set by the sector. However, not all exporters are interested in coordinating and sharing market information with farmers or other exporters. This may jeopardise attempts to form a national inter-professional body for mango.

## **3.4. Sector development strategies and policy recommendations**

### **Strengthen mango-specific industrial policies**

Ghana has not singled out mango or another crop in its agricultural policy (Chapter 3.2.4) while Côte d'Ivoire has identified the mango value chain as one of FIRCA's focal support targets. A sectoral focus on the mango sector might very well be justified in both countries due to the economic as well as social and ecological benefits of the sector (Chapter 3.2.6). For a sound industrial policy, government needs to work on all the '5 Is': Inputs (raw material, land, labour, capital), Infrastructure (physical, technology, quality), Institutions (associations, training and extension institutes, government agencies), Incentives (taxes and duties) as well as Investments (local investment and FDI promotion). The mango sector in both countries would have to grow both by expanding production area as well as by upgrading processing to be able to absorb more grades of the crop, e.g. through pulping. Selective interventions should specifically focus at those segments of the value chain for which the potential is not fully developed restricting the development of other segments. In an industrial policy for the mango sector, factor markets need to be improved, but at the same time also the domestic market for mango juice and other mango-related products as well as the export of fresh and processed mangoes. A precondition for

successful government industrial policies is a good monitoring system to avoid corruption. In their policy documents to support the mango value chain, Ghana and Côte d'Ivoire should set expected milestones of public benefits to be achieved in terms of export revenue, tax yield, jobs created and social and environmental sustainability. These benefits need to be benchmarked with other value chains such as cotton, bananas, pineapples, cashew and sheanuts, and data has to be recorded annually to determine whether the intended benefits are realised.

This study has revealed important weaknesses in the current industrial policy setup. Physical infrastructure that has been erected for the mango industry does not necessarily meet demand as was shown for the example of Ghana. Training institutions have hardly any relations with private firms for whom they prepare staff. Companies benefit little from R&D institutions and standards bodies. Government investment into the sector has helped little to keep the producer price of mangoes at a competitive level. Private investments into the sector happen incidentally and are not steered by government. With weak support policies, the entire burden of adjusting to world market conditions is placed onto firms that often lack the knowledge, resources and skills to upgrade to international levels. Improving the industrial policy setup is therefore clearly necessary for the mango sector. However, the 'rules of the game' set by the IMF, World Bank, WTO and the EPA<sup>34</sup> with the EU are set against most forms of government intervention to promote industry. Protectionism and continuous subsidies are no longer accepted. On the other side, free market forces are not conducive to costly learning processes, and simply exposing a developing economy to trade and investment may not take it much beyond the export of its natural resources as well as the exploitation of static skills and low wages.

### **Foster policy coherence**

The present policy framework in Ghana and Côte d'Ivoire to support industrial development in the mango sector is characterised by a lack of coherence between the different policies for competitiveness, physical infrastructure, education, agriculture, research, fiscal incentives and export promotion. Decisions affecting industrial development and competitiveness are scattered over an array of ministries and institutions: Trade and industry, agriculture, labour, education, science and technology as well as finance. These often have different objectives and communicate poorly with each other. However, a strategy for an industrial policy needs to cut across competing interests and use the resources of each ministry to further national aims. In order to tackle this issue, mango specific decision-making competences could be centralized and entail an inclusive stakeholder process. The strategy must therefore be steered by the head of government.

### **Focus on country specific strengths**

An important conclusion from the SWOT analysis would be to diversify processing and move more into specialty products. At the same time, the two countries should expand the activities they are strong in. Ghana's prime strengths lies in high quality processing for premium markets and hence in further strengthening the processing sector and diversifying the product range for export in terms of drying, freeze-drying, fresh cuts, preserved fruits, achar, jam and fruit bars. A great potential also lies in capturing the US market, especially with organic dried mangoes as well as freeze-dried fruits. Côte d'Ivoire's

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<sup>34</sup> Possible options still available include: Ghana and Côte d'Ivoire have both excluded a number of agricultural goods and non-agricultural processed goods from liberalization, mainly to ensure the protection of sensitive agricultural markets and industries but also to maintain fiscal revenues. For example frozen chicken and other meats, onions, sugar, tobacco, beer, most clothes are excluded in both countries from liberalization. Options ruled out include: both countries have to liberalize 80% of their imports from the EU over a period of 15 years. Duties cannot be reintroduced.



foremost strengths lies in the expansion of sea freighted fresh exports to satisfy growing markets in Europe and the Middle East. The further expansion of processing activities should nonetheless be continued to increase value addition in Côte d'Ivoire while Ghana should also continue exporting fresh mangoes.

### **Improve export promotion activities**

Export promotion agencies (GEPA in Ghana and APEX-CI in Côte d'Ivoire) need to revise and reformulate their respective export strategies to generally increase exports and particularly concretise the strategic diversification of non-traditional exports. Instead of implementing export promotion activities themselves, they should rather support the private sector to do so. In Ghana, for example, GEPA and the private sector exporters association FAGE are both competing for the same public export development funds (EDAIF, now Exim Bank) to support participation in trade fairs. The most important international fair for fresh mango trade is Fruit Logistica (Berlin) and for processed mango Food Ingredients (different locations), Biofach (Nuremberg), Anuga (Cologne) and SIAL (Paris). Since 2006, Ghana has been represented at Fruit Logistica every year with an own stand organised by FAGE and funded by EDAIF. However, due to the absence of a clear strategy, funding came late and was discontinued so that the Ghana stand at the fair was reduced to a few strong companies. International trade fairs are a hub for international networking and information sharing. Solo exhibitions, carried out by GEPA, do not have the same effect as sector-wide stands. Well performing export promotion agencies would help to secure a common stand at international trade fairs and support firms to access information on foreign markets. An example of a well-performing export promotion agency is set by the Hong Kong Trade Development Council which is highly regarded for its matchmaking between foreign buyers and exporters.

### **Support end market diversification**

Côte d'Ivoire and Ghana should go beyond the development of traditional export opportunities and strengthen new global markets as well as regional markets and the domestic market. Export promotion would have an important role in this regard. New global markets include for example the US, Russia and Israel.

To increase domestic and regional demand, mango juice is considered to be the most suited mango product as other fruits are often preferred in West Africa for fresh consumption such as bananas, water melon and oranges. Governments could fund sensitisation campaigns to promote locally made juice to consumers. In addition, access to technology to be able to compete with imported juices should be supported for domestic firms with the help of specially designed loan products supported by EDAIF (now Exim Bank) in Ghana and FIRCA in Côte d'Ivoire. This would particularly support the growing sector of fruit processing SMEs producing only for the domestic and regional market. Production of more mango juice or mixed juice with pineapples and passion fruits offered in safe packaging (glass or Tetra Pak) would also help to develop pulping and would enhance interregional trade of mango pulp to feed local juice makers in the region with raw material. Further, backward linkage potential to bottling sector could be developed (see below).

In processing, a number of by-products can be made from waste or second grade fruits (e.g. fruit leathers, fruit bars, vinegar, kernel oil). Promoting markets for these by-products will also improve the competitiveness of the main product as it can then be offered at a lower price. Some of those by-products are currently tailor-made for specific markets (e.g.



fruit leather rolls for Israel, fruit bars for the US market, mango-coconut balls from small pieces of dried fruits for the domestic market)

### **Improve the provision of inputs for mango production and processing**

Various key inputs for mango production and processing, including pesticides, are imported in Côte d'Ivoire and Ghana. All major inputs into farming and processing to date are duty free (except for sugar and, in Ghana, fresh mango imports for processors). However, government could further lower the costs of certain inputs through subsidies or government procurement (e.g. fruit fly control chemicals or fungicides to control BBS). Côte d'Ivoire did this with fruit fly control chemicals. This has helped to get GF 120 which is the preferred, fully biological bait spray well-known among producers. On the other side, producers may become reliant on government aid and delays in delivery in 2017 had the adverse effect of letting fruit fly infestation erupt. Input subsidies therefore need to be time bound and conditions well communicated. They should bring about market development for importers and distributors who should continue to offer the subsidised inputs at competitive prices even after the end of the subsidy programme. Government procurement always takes longer than anticipated, but agricultural activities are time sensitive and cannot be delayed. Governments should therefore rather work with vouchers and let the actual trade be carried out competitively by existing, successful input providers. In the medium term, certain inputs could be also produced locally which would not only increase competitiveness but also local value added and backward linkages (see below).

New mango varieties are brought in, e.g. from the world largest collection in Florida, either by processors or government institutions. In any case, government needs to facilitate genetic adaptation to market trends by awarding import permits and funding variety testing. However, experience from Ghana and Côte d'Ivoire has shown that nurseries and variety plots are best managed by private companies who have a genuine interest in what they are doing: Processors may like to see new varieties established to improve their competitiveness and private nurseries may want to be the first ones in the market offering seedlings of a promising new variety.

### **Improve access to finance**

The government also has a role to play to counteract the present failure of financial markets for agriculture production and processing. In part this can be done with refinancing mechanisms for bank lending, especially with regards to investment loans. The government will have to collaborate with international development banks in this regard. Smallholders' access to finance could also be improved by supporting farmer based organizations as well as expanding extension services and contract farming arrangements.

During establishment, mango orchards require investments into weeding and bushfire control as well as pruning and crop protection while revenues are only expected five years after establishment. A reliable cash flow for the first five years therefore need to be made available – either through affordable loans or government grants. The government programmes so far supporting the establishment of mango plantations have not been very successful as they limited support only to the year of establishment leading to a number of abandoned orchards destroyed by bushfire and grazing animals or with poor weeding, pruning and BBS infection. In addition, government programmes tend to support preferably 'absentee farmers', i.e. usually well-off individuals residing in towns, instead of those who live close by their orchards in rural communities.

## **Foster skill development**

At low levels of industrial development, such as in Ghana and Côte d'Ivoire, already the quantity and quality of primary schooling and basic vocational education has great impact on the performance of the mango sector. In addition, firm training for own staff as well as interns from vocational schools and universities need to be encouraged. The cost of training trainers in private firms should be partly borne by government. Alternatively, such costs need to become tax deductible.

Agricultural extension services are necessary for the support of small and medium sized farms. In mango cultivation, farmer training and extension is required in areas of pest and disease control, flower induction, pruning, orchard floor management and the establishment of windbreaks as well as issues of safe harvesting and post-harvest handling. In Côte d'Ivoire extension services have been privatised. In Ghana, the privatisation of public extension is long overdue as the current system is badly staffed, resourced and managed. The provision of extension services do not need to be provided by private businesses. Extension organisations may register as foundations or other non-profit organisations. Most extension work in the area of fresh produce is currently carried out by NGOs and offtakers. As a consequence, enterprises have little regard for public sector knowledge institutions. Nevertheless, the need for good knowledge infrastructure is undeniable. Universities may have a role here to act as knowledge repositories for the different actors in agricultural extension.

Extension services should not receive public support if working in isolation. They should collaborate closely with offtakers (exporters and processors) in order to deliver services in a demand-oriented way. Besides technical extension, advisory services should engage in farmer group formation, facilitation of savings groups and the development of internal control systems for smallholder farmers. Universities could be commissioned to regularly train extension staff in methodology (e.g. competency based training) and technology. To reduce the costs of extension delivery, services must make widespread use of IT. Experiences show that WhatsApp groups today if well moderated are an effective means of communication to reach large numbers of mango farmers, also with pictures and short (animated) films. Simple smart phones are already available for 35 EUR throughout West Africa. Offtakers and universities should assist in creating content.

## **Support quality control systems and R&D of firms**

Technology and quality infrastructure consists of R&D, metrology, calibration, testing, certification and standards. It is doubtful whether more money for technology and quality institutions – if government run – will improve the quality of provided services. Research bodies in Ghana and Côte d'Ivoire are generally delinked from the sector they are to serve, doing basic research of poor quality and no practical use. Many are out of touch with international trends, have outdated equipment and libraries and employ underpaid, badly managed and unmotivated personnel. R&D, metrology, calibration, testing and certification can be better provided by private companies which may be licenced and contracted by the state. In recent years government institutions have been obliged to generate revenue ('internally generated funds') to reduce the burden on the state budget. However, this had led to overpriced services where government institutions have a monopoly position while services, e.g. in calibration or lab analyses, provided by private firms are generally cheaper and more reliable. It should therefore rather be the job of the government to attract renowned international technology and quality infrastructure into the country and encourage competition.

Also R&D to some extent can be very well carried out by – at least larger – private sector companies in the value chain and R&D expenditures of private firms should become tax-deductible. Smaller companies in the value chain which by their nature do not so much compete for markets as larger companies should be best supported to establish innovation networks which can be encouraged to test new technologies and share experiences. The standards authorities in Ghana and Côte d'Ivoire have an important role to play especially in preventing low quality imports disadvantaging local producers. However, experience shows that they hardly control the quality of imports permitting, for example, substandard fertilisers and agrochemicals entering the market.

### **Support physical infrastructure development**

The development of land for industrial parks, roads from these parks or major processors to the port (or train station in the case of Côte d'Ivoire) as well as storage areas for reefer containers at port and consolidation points are the most important examples of necessary public physical infrastructure which government needs to continuously improve and sustain for the mango industry. In addition, sufficient power generation and the extension of the grid to areas of commercial farming and processing are important. Processing infrastructure even if established with public development funds must be built for, and managed by, an experienced strong private sector company (strategic national firm) to be run effectively and serve its purpose. Where it is still under government control (example: Vakpo packhouse in Ghana) it needs to be leased out to a company having a certain track record in processing, but not without precautionary measures to revoke lease agreements in case of the private company not meeting its obligations.

### **Promote investments and technological spillovers**

Investment promotion by Ghana and Côte d'Ivoire has for the most part been attracting FDI for the fresh produce sector as in a young industry foreign investors tend to face fewer failures. While some FDI was attracted into farming, more impact to the development of the sector is generated from FDI into processing and manufacturing. Incentives provided by the government must therefore depend on the extent of value adding technologies proposed by foreign investors. The conditions for FDI (full foreign ownership possible, repatriation of profits, no minimum investment, low corruption) are currently better met in Côte d'Ivoire than in Ghana. In a highly competitive market for foreign investment, Ghana may lose out if the above conditions are not improved. It is expected that FDI also brings along technology improvements to the sector. The awaited spillover effects of technology brought in by FDI to the sector will however depend on the interest of foreign firms to develop relations with local firms (either as input providers or through subcontracting arrangements) or hire or train local workers to the levels of technological and management staff. Hence, the focus of strategic FDI attraction should be on foreign firms that have this interest and are hence more locally rooted or embedded. Further, linkages and spillovers between foreign and local firms will only happen if there is a strong domestic enterprise base. Strengthening this base by stimulating local investment and upgrading of local firms, for example in the context of the industrialisation programmes such as the One-District-One-Factory (1D1F) programme in Ghana, therefore is of crucial importance in addition to strategic FDI attraction. Well managed Shared Use Facilities (see Chapter 3.4) are for example a good instrument for start-up companies who want to develop their own new products and start commercial production. Further, to support the growth of local firms in mango processing, subsidized investment capital facilities are needed. Presently, with Blue Skies, HPW, ITFC and Vegpro, most processing capacity in Ghana is still foreign owned.

Fiscal incentives for investments have had a strong impact in the past. In Côte d'Ivoire, the country is now divided into three zones for different schemes of tax exemptions. In general, the further the investment from the capital Abidjan, the higher the incentives provided by CEPICI. Also in Ghana, corporate tax is lowest outside Accra and regional capitals. Corporate tax for agricultural activities is 0% and non-traditional exports (i.e. fruits and fruit products) 8% only. Agro-processing companies enjoy 0% corporate tax in the first five years, and 0% beyond this period if outside regional capitals (PwC 2017). The incentives for companies registered with the Free Zone Board have already been discussed. Today, a number of very important free-zone processing companies are located in rural areas of the country where they are near to their raw material base. Strategic industrial policy would also link incentives to certain activities by firms such as investments in training and R&D or linkages to local firms or a certain share of locals employed in technical and/or management positions.

### **Support the development of backward linkages**

The development of backward linkages should have high priority in the industrial policy design. The potential for backward linkages exist particularly with regard to the bottling and sugar industries for mango processing as well as the cardboard industry for fresh exports. Copper fungicides also have potential for local production. Local investments in these sectors could be supported through the establishment of a subsidized investment capital facility. For more technological advanced sectors, strategic FDI attraction could be important to increase the local provision of inputs and hence backward linkages and local value addition.

### **Ensure social and environmental sustainability**

Mango production and processing have significant potential to create both income and employment for the rural poor and an ecological barrier against the effects of climate change and thereby contributing to soil and water conservation (Chapter 3.2.6). Mangoes grow well in the sub-humid and semiarid zones of Ghana and Côte d'Ivoire – areas which are prone to soil degradation especially with climate change leading to more severe drought spells and heavier rainfall with increasing incidences of flooding. Tree crops have properties that contribute to ecological sustainability in these circumstances.

It would be in the interest of producers to communicate these environmental benefits to both their national governments as well as overseas consumers. Certification is able to boost sales in Europe and the US (as Fair Trade and organic turnover figures indicate). However, the degree to which farmers benefit from these certification scheme are debatable in view of the high costs involved and the necessary level of skills required to maintain a formal quality management system. Farmers would prefer channels of direct communication with consumers, e.g. with the help of messages and codes on product packaging.<sup>35</sup> Unfortunately, it is often the retailer in Europe or the US wanting to maintain their flexibility which oppose the de-anonymization of supply chains. Development cooperation could take a lobbying role for smallholder farmers here.

When designing a communication strategy, three concerns which consumers may have need to be addressed: Application of chemicals, food security and land grabbing. Good agricultural practices often allow to forego the use of chemicals (e.g. by planting shelterbelts against BBS or providing baits against fruit flies). Food security considerations do not keep farmers from planting mangoes as especially small farmers with limited land

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<sup>35</sup> [www.natureandmore.com](http://www.natureandmore.com) and [www.xtrapay.info](http://www.xtrapay.info) are just two examples of how 'good practice' communication between producers and consumers could look like – despite integration into global value chains.

try to integrate annual crops with tree crops, while others use their mango orchards as a pasture for sheep and poultry or as bee food. Large orchards per se do not jeopardise social and ecological sustainability. On the contrary, to be effective in soil and water conservation, orchards require a certain size. In addition, large orchards theoretically create employment, reduce the costs of applying good agricultural practices and ease access to market by reducing transaction costs. However, the reality shows that many large orchards of 'absentee farmers' are ill maintained and that smallholders investing their time in the management of their close-by orchard are usually among the best performers. Larger well-managed orchards could nonetheless have a positive effect on technology transfer to smallholder farmers as well as on the livelihoods for the farm workers if the public sector and development cooperation leverage them for developmental purposes. 'Land grabbing' by large commercial farms has not been an issue so far and is also unlikely to be in the future due to the relatively intensive management requirements for mango orchards in order to be successful (pruning, flower induction, spraying, weeding, irrigating, harvesting, etc.). Unlike oil palm, rubber and jatropha, mango is therefore not a typical plantation crop into which large foreign farming companies invest in.

### **Improve efforts and effectiveness of development cooperation projects**

Development Cooperation (DC) needs to above all support defined elements of the partner countries' industrial development policies. This in turn will also improve control over, and ownership of, donor projects by government partners so that activities initiated by development partners are better sustained and the knowledge generated is not lost.

The most important industrial policy recommendations for the mango value chain have been described above. Development partners could play a specifically important role in:

- Supporting the establishment of new mango orchards to lower the price for mangoes to a competitive level and widen the varietal base
- Easing market entry or (if possible) the local production of crucial agricultural inputs such as crop protection products by supporting trials and the production of training material as well as investments in these areas
- Advising government institutions in tailoring fiscal incentives for agricultural processors and in linking them to certain activities such as investment in training and R&A and share of locals in technical or management positions
- Providing refinancing mechanisms for banks lending to agriculture production and processing activities, especially with regards to investment loans for local firms
- Offering state loans for physical infrastructure like industrial parks, roads and facilities at consolidation points and ports as well as for energy generation and grid extension
- Providing R&D funds for private sector led research and enabling private companies to provide metrology, calibration, testing and certification services licenced by the state
- Supporting smaller companies to establish innovation networks to test new technologies and share experiences
- Providing capacity building for companies to carry out training for their own staff as well as for interns from vocational schools and universities
- Supporting privatised agricultural extension services with 'seed capital' and training of extension staff
- Supporting universities to offer training of extension staff and manage knowledge with the help of ICT



- Assisting export and investment promotion agencies to formulate a clear strategy for their mango sector support
- Preparing Ghanaian and Ivorian companies to exhibit at international fairs and assisting export promotion agencies in individual matchmaking between buyers and exporters
- Funding sensitisation campaigns to promote locally and regionally produced mango juice as well as technology for local fruit processing SMEs to be able to compete against imported juice
- Facilitating regional trade in the frame of the ECOWAS Trade Liberalisation Scheme by helping processors to understand necessary procedures and requirements
- Supporting governments' industrialisation programmes (such as the One-District-One-Factory programme in Ghana) with consulting, technology and investment loans – especially in the area of processing and initiating backward linkages which hence support entire value chains (e.g. manufacturing of sugar, glass jars and bottles, cardboard boxes, copper fungicides)
- Ensure social and environmental sustainability by promoting good agricultural practices and improving the access to finance of marginalised social groups.

Supporting government policies and strengthening government institutions does not mean that these institutions should themselves implement support activities for the sector. This has not worked in West Africa and DC should not perpetuate past failures. Government institutions should rather be supported to communicate and build ties with the private sector, to contract or co-fund private sector services and to start playing a coordination role with an oversight function for the sector. For a better sector organisation, DC should on one hand strengthen the capacities of decision-support systems (such as agricultural statistics) and on the other, bolster professional organisations in agriculture and processing such as industry and export associations. Ghana can provide a successful example of private-public dialogue for the mango sector initiated by GIZ and now convened by the apex organisation FAGE.

However, to get the buy-in of relevant private sector companies to take part in private-public dialogue and assume their assigned roles in value chain development, DC has to develop a closer proximity to the private sector. A development instrument that has proven tremendously successful in commercial agriculture development is the so-called 'Development Partnership' with a private sector company (DPP). Examples have been shown in Chapter 3.2.5 above. Projects that get smallholder farmers integrated into value chains are best carried out by private companies who are themselves part of the value chain. DPPs do not only create win-wins for both the company and contracted outgrowers (e.g. through better organised input supply), but also generate knowledge and innovation that boost the entire sector. For DPPs, the private company must at least contribute 50% of the costs, and it is not without reason that DPPs are restricted to strong (and often lead) companies with a minimum turnover and experience. There could be additional programmes to support start-ups and SMEs, e.g. via business incubators or the establishment of commercially managed Shared Use Facilities.

The principle of matched financing should, however, not only be limited to DPPs. Private companies, even if from the SME sector, are enterprises who have to take risk in order to reap benefits. The distribution of free equipment should be a thing of the past. On the other side, the fear of donor agencies to make capital investments and limit support to studies and strategy papers has also not brought about the necessary technological transformation. Even start-ups should be able to receive investment loans or grants if



matched by private venture capital for selected, strategically important activities to widen value chain bottlenecks or pilot processing innovations for further replication.

Another imperative for development partners to sign up to is to refrain from distorting the market through free service delivery. Sustainable service delivery systems which can be afforded by smallholder farmers and SMEs are not being built when NGOs offer free services. Therefore support should very much be limited to either investments or capacity building to manage the investments. Operating and recurrent costs should not be subsidised (or at least only within a short time frame) in order to stimulate necessary productivity gains.

To achieve this, development partners have to better pull together. Donor coordination has considerably improved at policy level. However, donor collaboration at operational level needs to follow. In the worst case, donors are competing for partners from government or private sector to work with. In the best case, however, donors may complement each other's activities according to their respective strengths and stand unified to achieve a maximum of local partners' own contributions for each and every activity implemented to strengthen the sector.

### 3.5. Conclusions<sup>36</sup>

The growth of the non-traditional mango sectors in Côte d'Ivoire and Ghana are successful examples of improving the livelihood of farmers in the context of agricultural-based export diversification strategies as well as of upgrading to processing to diversify export products and increase local value addition. Côte d'Ivoire's key strength is exporting fresh mangoes to the EU and increasingly the Middle East, however, investments in processing capacities particularly in fruit drying have expanded. Ghana has struggled to compete in exporting fresh produce given their limited price-competitiveness. But it has a well-developed processing sector and has its key strengths in exporting dried and fresh cut mangoes to the EU. The economic, social and ecological benefits of the mango sector justify strategic industrial policies to support the expansion, productivity and quality of mango production as well as the development of further processing activities for exports and the domestic market. The **key policy recommendations** of the report can be summarized as follows:

- **Strengthen mango-specific industrial policies** in order to support upgrading processes in the production and processing segments of the value chain.
- **Foster policy coherence**, e.g. by centralizing decision-making power and implementing inclusive stakeholder processes.
- **Focus on country specific strengths**, which is sea freighted fresh exports for Côte d'Ivoire and a larger diversity of processed mangoes for Ghana while still supporting processing in the former and fresh mango exports in the latter country.
- **Support end market diversification** to new global markets such as the US, Russia or Israel as well as the regional markets and the domestic market.
- **Increase productivity and quality** in mango production via the promotion of farmer based organizations as well as improved input provision, targeted training and skill development, access to extension services and finance, certification and contract farming as well as quality control systems and R&D.

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<sup>36</sup> This section has been written by Christoph Arndt and adapted by the main authors' of the study.

- **Promote investment and technological spillovers** by supporting local investments and attracting strategic more embedded FDI and incentivizing linkages and spillovers between foreign and local.
- **Support the development of backward linkages**, particularly in bottling, sugar and cardboard industries as well as copper fungicides by supporting local firms as well as attracting FDI for more technological advanced activities.
- **Ensure social and environmental sustainability** by improving access to finance by marginalised social groups as well as promote good agricultural practices in order to counteract the potential negative effect of pesticides.
- **Improve efforts and effectiveness of development cooperation** by supporting defined elements of the partner countries' industrial development policies.

## 4. ECONOMIC UPGRADING IN THE TUNISIAN TEXTILE AND APPAREL INDUSTRY<sup>37</sup>

### 4.1. Global and European Textile and Apparel Value Chains

The textile and apparel industry has received substantial attention in the research and policy work on global value chains. This reflects that the sector was one of the first industries to experience the geographical dispersion of production that entailed the rise of global value chains as an organizational structure for managing global production and trade. The fact that the garments part of the textile and apparel chain has relatively low capital investments requirements and is highly sensitive to labor costs gave developing countries an advantage in the industry driving the relocation of large parts of the industry to developing countries. The map of this relocation was affected by a number of factors. In addition to the importance of labor costs, important segments of the market are highly sensitive to proximity to final markets. This is due to the importance of reacting quickly to shifts in consumer demands and to the rise of 'fast fashion' as a key segment in the market. In addition to labor costs and time-to-market, trade policy plays an important role in shaping the map of the industry. Historically, this took place through the multi-fiber arrangement (MFA) that allocated quotas to the markets of the advanced economies. Today, the role of trade policy continues through tariffs that are still substantial on some garments items giving a strong advantage to countries that enjoy duty-free access to major markets and also through rules of origin (RoOs) that influence the sourcing of fabrics and other inputs such as accessories for garments producers.

As one of the key global textile and garments markets, these transformations can be seen in the European garments industry. Over the last few decades, total European imports of apparel products increased dramatically reflecting the growing share of imported products in the European market. Between 2000 and 2015, total EU-15 imports of apparel products increased from EUR 78 billion to EUR 136.5 billion (Eurostat 2017).

These shifts in apparel exporters to the EU are directly linked to shifts in production and trade in textile production. Contrary to apparel manufacturing, textiles is a more capital-intensive sector with stronger advantages driven from economies of scale. A number of advanced economies maintain strong textile industries and are more reluctant to fully liberalize trade in the textile industry. This resulted in a close link between the two parts of the industry. In the case of the EU, this was originally maintained through the so-called 'outward-processing trade (OPT)' arrangements that allowed EU-based firms to temporarily export inputs for processing to an OPT-partner country and re-import products under preferential conditions, i.e., only paying duty on the minimal value-added (labor) taking place in the neighboring country (Pellegrin 2001). Later on, such arrangement became important parts of the EU trade agenda through rules of origin (RoOs) requirements in free trade agreements. RoOs are a crucial factor in shaping the map of production and trade in textile and garments. The liberalization of trade in textile and garments through free trade agreements was controlled through RoO that provided a degree of protection for the domestic textiles industry.

This led to two distinct global value chains serving the European market. The first can be thought off as the regional supplier network in which garments production is relocated to geographically close countries but a substantial share of the textiles and accessories used

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<sup>37</sup> This section was written by Shamel Azmeh.

in production come from EU countries. The exporting countries in this network enjoy secure and predictable preferential access to the European market through free trade agreements. The other network is more geographically distant and does not include the use of European fabrics and accessories. Some of the major exporting countries in this network, China for instance, do not enjoy duty-free access to the EU market removing the need to comply with European RoO while others, such as Bangladesh, enjoy preferential access to the EU although through unilateral preferences regimes such as the generalized system of preferences (GSP) which are less stable and secure than FTAs. While regional suppliers in North Africa, Eastern Europe, and Turkey, enjoyed substantial market share in the 1980s and 1990s, more recent developments in the industry including the phasing out of the MFA in 2005 and the resulting liberalization in trade in garments were reflected in the growing share of Asian producers in recent years. As can be seen in Table 13, market shares of key Asian producers, particularly China and Bangladesh, have increased rapidly over the last two decades while shares of most regional suppliers in North Africa and Eastern Europe have declined.

Table 13: Top 15 apparel exporting countries to the EU-15

	in million EUR							in %						
	1995	2000	2004	2008	2011	2013	2015	95	00	04	08	11	13	15
<b>World</b>	<b>50,377</b>	<b>78,117</b>	<b>85,518</b>	<b>103,829</b>	<b>116,378</b>	<b>114,306</b>	<b>136,469</b>							
<b>EU-15 (Intra)</b>	21,838	30,511	32,765	38,873	41,008	41,967	49,615	43.3	39.0	38.2	37.4	35.2	36.6	36.4
China	3,542	7,450	11,038	24,331	29,440	25,716	28,771	7.0	9.5	12.9	23.4	25.3	22.4	21.1
Bangladesh	967	2,567	3,689	4,667	7,802	9,506	13,288	1.9	3.3	4.3	4.5	6.7	8.3	9.7
Turkey	3,189	5,322	7,520	7,612	8,241	8,364	8,868	6.3	6.8	8.8	7.3	7.1	7.3	6.5
India	1,588	2,005	2,434	3,826	4,651	4,058	4,986	3.2	2.6	2.8	3.7	4.0	3.5	3.7
Poland	1,604	1,826	1,153	1,421	1,976	2,117	2,922	3.2	2.3	1.3	1.4	1.7	1.8	2.1
Cambodia	43	282	517	554	1,075	1,747	2,903	0.1	0.4	0.6	0.5	0.9	1.5	2.1
Vietnam	271	732	610	1,201	1,660	1,772	2,745	0.5	0.9	0.7	1.2	1.4	1.5	2.0
Romania	972	2,558	3,679	2,349	2,292	2,192	2,330	1.9	3.3	4.3	2.3	2.0	1.9	1.7
Morocco	1,631	2,356	2,417	2,386	2,194	2,092	2,303	3.2	3.0	2.8	2.3	1.9	1.8	1.7
Pakistan	434	595	906	865	1,269	1,366	2,224	0.9	0.8	1.1	0.8	1.1	1.2	1.6
<b>Tunisia</b>	<b>1,729</b>	<b>2,567</b>	<b>2,586</b>	<b>2,580</b>	<b>2,404</b>	<b>2,047</b>	<b>1,979</b>	<b>3.4</b>	<b>3.3</b>	<b>3.0</b>	<b>2.5</b>	<b>2.1</b>	<b>1.8</b>	<b>1.4</b>
Sri Lanka	424	831	806	1,113	1,284	1,268	1,547	0.8	1.1	0.9	1.1	1.1	1.1	1.1
Indonesia	908	1,800	1,320	1,114	1,311	1,179	1,273	1.8	2.3	1.5	1.1	1.1	1.0	0.9
Bulgaria	252	772	1,046	1,132	1,127	1,086	1,115	0.5	1.0	1.2	1.1	1.0	0.9	0.8
Czech Republic	436	528	711	609	602	570	751	0.9	0.7	0.8	0.6	0.5	0.5	0.6
Reg. suppliers*	<b>12,745</b>	<b>20,490</b>	<b>23,330</b>	<b>22,142</b>	<b>22,561</b>	<b>21,943</b>	<b>24,050</b>	<b>25.3</b>	<b>26.2</b>	<b>27.2</b>	<b>21.3</b>	<b>19.4</b>	<b>19.1</b>	<b>17.6</b>
CEE-20**	6,048	9,946	10,460	9,079	9,258	9,055	10,477	12.0	12.7	12.2	8.7	8.0	7.9	7.7
MENA-4***	3,508	5,222	5,351	5,451	5,061	4,525	4,706	7.0	6.7	6.2	5.2	4.3	3.9	3.4

Notes: \* Regional suppliers: MENA-4, CEE, and Turkey.

\*\*CEE: Romania, Poland, Bulgaria, Czech Republic, Hungary, Slovakia, Slovenia, Estonia, Latvia, Lithuania, FYR Macedonia, Croatia, Serbia, Montenegro, Albania, Bosnia and Herzegovina, Moldova, Ukraine, Belarus, and Russia.

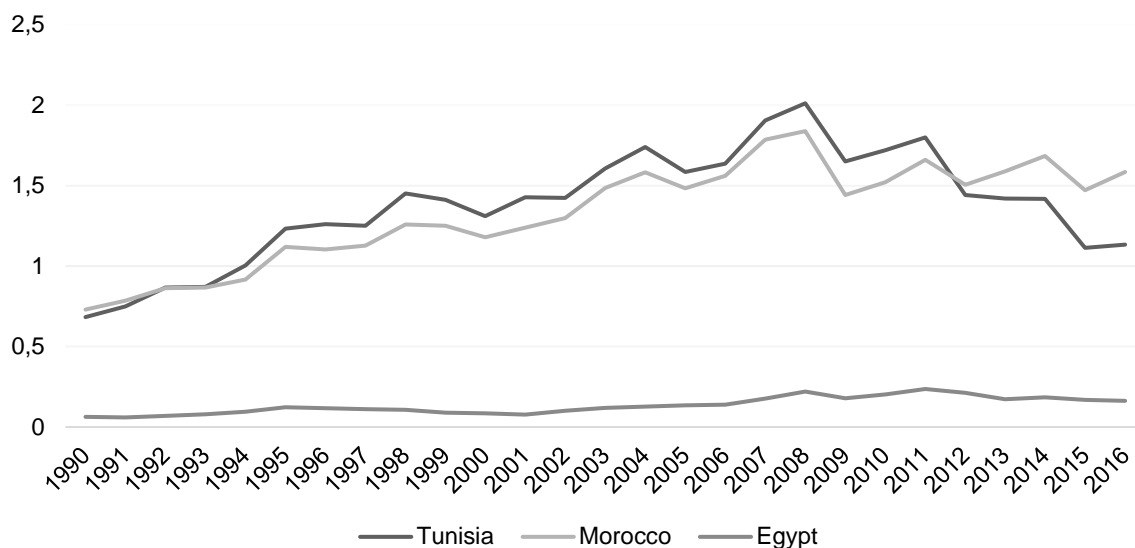
\*\*\* MENA-4: Egypt, Jordan, Morocco, and Tunisia.

Source: Eurostat 2017: Comext – Apparel represents HS61+62; World value represents the sum of EU-15 intra and extra trade

The North Africa region, particularly Morocco and Tunisia, represented key locations of the regional network as fabrics and other accessories can be shipped cheaply and rapidly from countries such as Italy, France, and Spain, for the fabrics to be processed in North Africa, and then shipped back to the EU. Geographical proximity was a key factor in facilitating this division of labor as shipping costs and times can be kept low at both stages of the process. Following rapid growth in trade through this division of production in the

1990s and early 2000s that was reflected in growing EU textile exports to many of the regional apparel suppliers, the importance of such networks started to decline as the share of Asian apparel exporters into the EU market increased (Figure 7).

Figure 7: EU exports of textile yarn and fabrics (SITC 65) to North Africa, US\$ billion



Source: UN COMTRADE

## 4.2. The textile and apparel sector in Tunisia

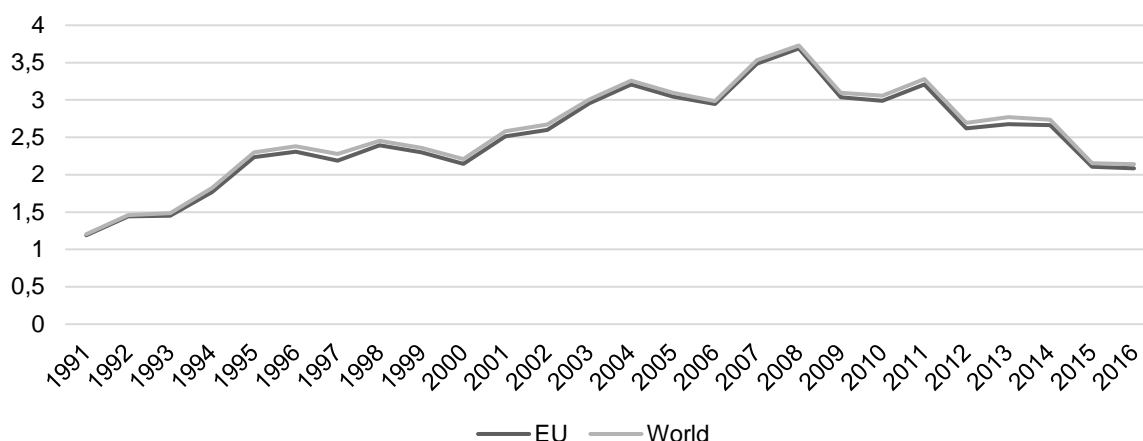
### 4.2.1. Development of the Tunisian apparel export industry

Within this changing map of production and trade in textile and apparel, Tunisia developed an apparel export industry that is almost entirely dependent on the EU market. While Tunisia has a long history in the industry and of trading in textile and garments with a number of European countries, the roots of the current export-oriented industry can be traced to the 1970s and 1980s when the Tunisian government adopted a semi-liberal economic policy and pursued deeper integration with the European economy as a way to achieve economic development. This close relationship with the EU was translated in the association agreement and the free trade agreement with the EU that entered into force in 1998 and offered Tunisia preferential access to the EU market.

The promotion of the export sector with a focus on the EU became a key focus of Tunisian industrial policy. This strategy was logical considering the geographical proximity to Europe, the preferential access to its market, and the large consumer market the EU offered. As such, the Tunisian government offered a range of tax and financial incentives to what is in Tunisia called the offshore sector which includes in addition to apparel industries such as electronics and electrical equipment. This was translated into growing exports of apparel mainly to the EU (Figure 8) and growing imports of fabrics from the EU (Figure 7) in the 1990s and first half of the 2000s. Today, Tunisia has a relatively large apparel industry consisting of around 1,000 firms of different sizes employing around 160,000 workers and accounting for more than 15% of total Tunisian exports in 2016.



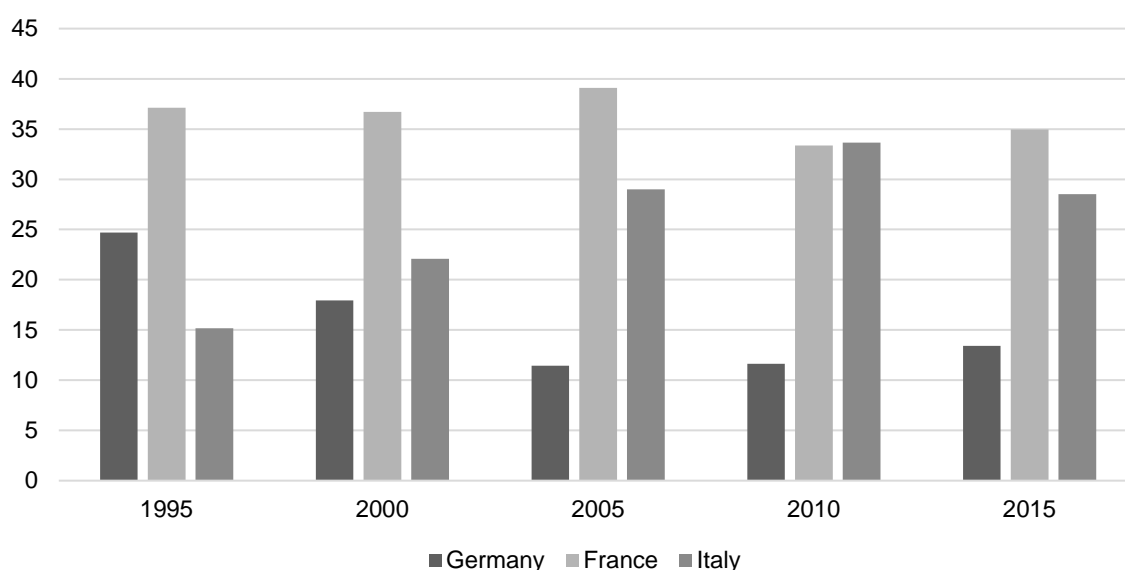
Figure 8: Tunisia's exports of apparel (HS61+HS62), US\$ billion



Source: UN COMTRADE

The Tunisian apparel industry, however, is not only dependent on the EU market but on a small number of countries within the EU with the main markets being France, Italy, and Germany. Over time, the share of Germany in Tunisian apparel exports declined while the share of Italy increased (Figure 9). In 2015, France and Italy accounted for more than 60% of Tunisian garment exports.

Figure 9: Key export markets for Tunisian apparel, % in total Tunisian exports to the EU



Source: UN COMTRADE

In terms of products, woven apparel accounts for a larger share of Tunisian exports to the EU. In 2015, woven products accounted for 71% of Tunisian exports compared to 29% for knitted products. Men's trousers are the main export item from Tunisia to the EU accounting for 21.3% of total apparel exports in 2015 followed by women trousers that accounted for 11% (Table 14).

Table 14: Top 10 EU-28 apparel imports from Tunisia in 2015

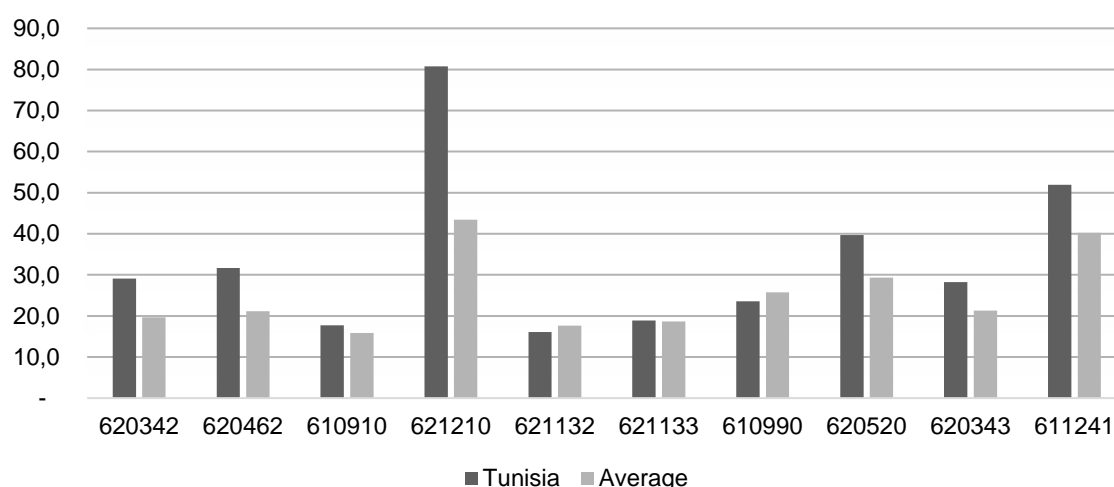
HS code	Product	Value (EUR million)	Share (%)
620342	Men's trousers, cotton, excl. knitted	424	21.3
620462	Women's trousers, cotton, excl. knitted	219	11.0
610910	T-Shirts, knitted	87	4.3
621210	Brassieres, incl. knitted	80	4.0
621132	Tracksuits of cotton, excl. knitted	65	3.3
621133	Tracksuits of man-made fibres, excl. knitted	65	3.2
610990	T-Shirts, knitted, excl. cotton	62	3.1
620520	Men's Shirts, cotton, excl. knitted	60	3.0
620343	Men's trousers, synthetic fibres, excl. knitted	42	2.1
611241	Women's Swimwear	41	2.0

Note: Share indicates share of total Tunisian apparel exports to the EU-28.

Source: Eurostat 2017

Within these products, Tunisia occupies a generally higher than average position in regard to unit value of its exports compared to all EU imports. As (Figure 10) shows, in eight products out of the top ten products Tunisia exports to the EU, the country has a higher than average unit value including the top two products Tunisia exports (HS 620342 and HS 620462).

Figure 10: Unit Value of Tunisian Top exported products to the EU, EUR/kg



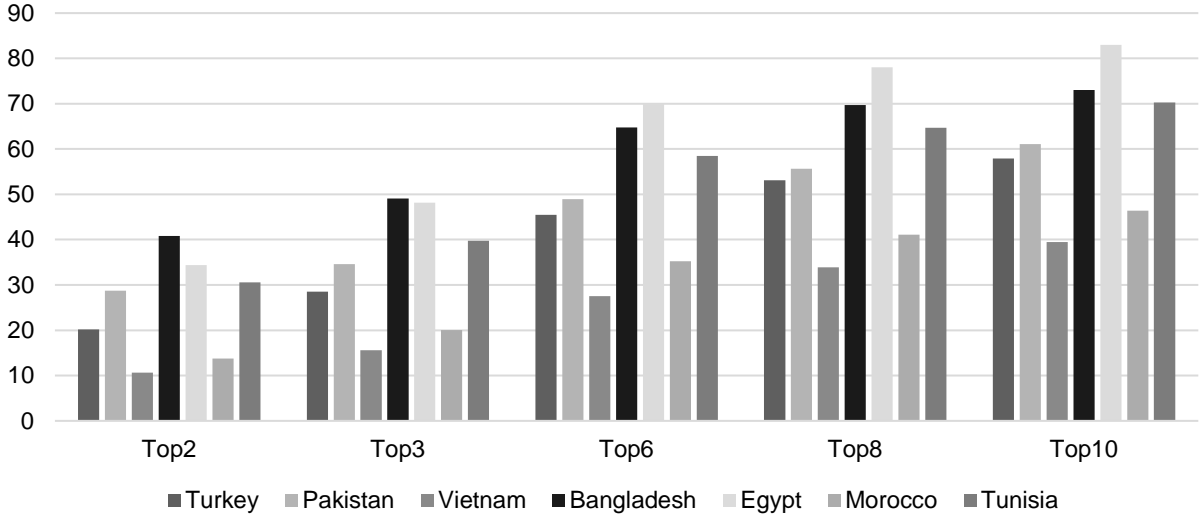
Note: Average indicates average unit value of all imports of the specific apparel product to the EU-28.

Source: Eurostat 2017

In terms of product diversification, Tunisia has a relatively undiversified export composition in comparison to other regional and global apparel exporting countries. Figure 11 shows the share of top products in Tunisian apparel exports compared to the share of top products in the total exports of a number of regional and global competitors. Overall, Tunisia, alongside Egypt and Bangladesh have higher concentration in their exports than Morocco, Turkey, Vietnam, and Pakistan. The comparison with Morocco is particularly interesting as the two countries are highly dependent on European value chains. While the top two six digits products in the case of Morocco account for around 14%, the top two

products in Tunisia account for 30%. For the top six products, the share in Morocco is 35% while in Tunisia it is 58% and for the top ten products, the share in Morocco is 46% while in Tunisia it is 70%.

Figure 11: Share of top products exported from selected countries, 2015, HS 6 digits

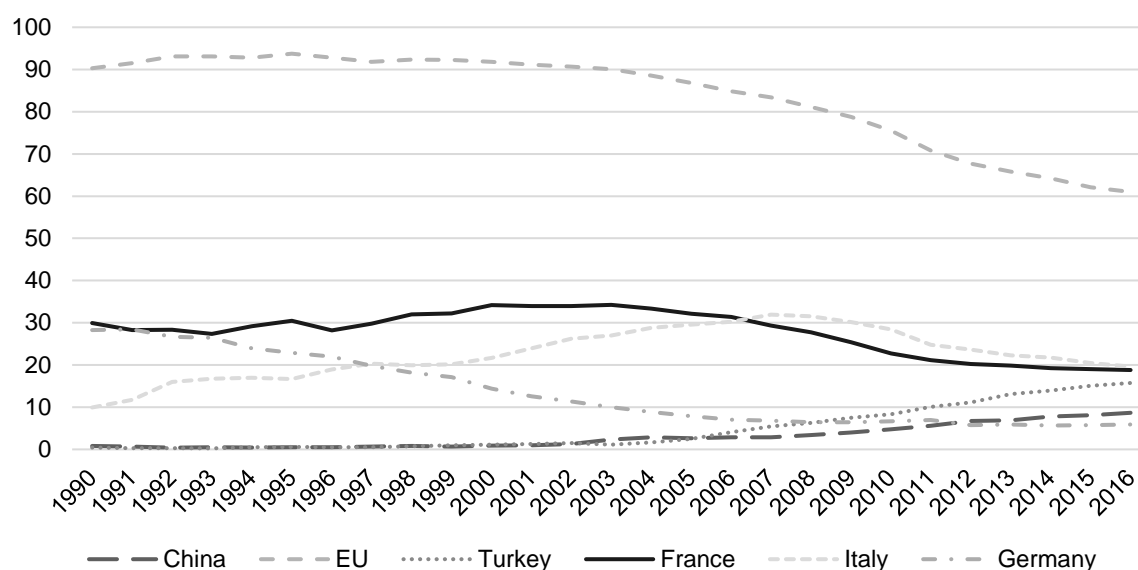


Source: UN Comtrade

In contrast to apparel, Tunisia has limited textile production capacities. As EU FTAs generally stipulate double transformation RoO<sup>38</sup>, this means that for exporters to benefit from duty-free access to the European market, they need to use fabrics produced either in the EU or in other countries within the Euro-med region. As discussed earlier, this led to a network in which fabrics are shipped from Europe to Tunisia to be processed and exported back. Today, the EU remains the main supplier of fabrics to Tunisia. Nonetheless, the share of the EU in total Tunisian imports of fabrics has been declining consistently. In 1990, the EU accounted for 90% of total Tunisian imports of fabrics with this share declining to around 60% in 2015 (Figure 12). The share of France dropped substantially moving from around 30% in the 1990s and early 2000s to around 19% in 2015 while the share of Italy increased rapidly in the 1990s and early 2000s reaching 31% in 2008 before dropping to 20% by 2015. Imports from Germany, however, experienced the largest shift with a large drop from almost 30% in 1990, to 14% by 2000, to less than 6% by 2015. The overall drop in the share of the EU in Tunisian fabric imports was taken over by Turkey and China. The share of Turkey increased from around 1% in early 2000 to around 15% in 2015 while the share of China increased from around 1% in early 2000 to 8.7% in 2015. The use of Turkish fabrics meets the European RoO to enjoy duty-free access to the EU. The use of Chinese fabrics, however, disqualify final products from duty-free access suggesting either that these Chinese fabrics are being used for the domestic market or that for some exporters and for some products the savings they could achieve by using cheaper Chinese fabrics outweighs the savings they make through exporting duty-free.

<sup>38</sup> Single transformation means that only the sewing stage has to be conducted in the beneficiary country to access preferential market access; all inputs can be imported. Double transformation, in contrast, means that a least two production stages have to be conducted in the beneficiary country which includes for example sewing and fabric production. Triple transformation demands three production stages in the beneficiary country which includes for example sewing, fabric production and yarn production.

Figure 12: Tunisian imports of textile yarn and fabrics (SITC 65), %



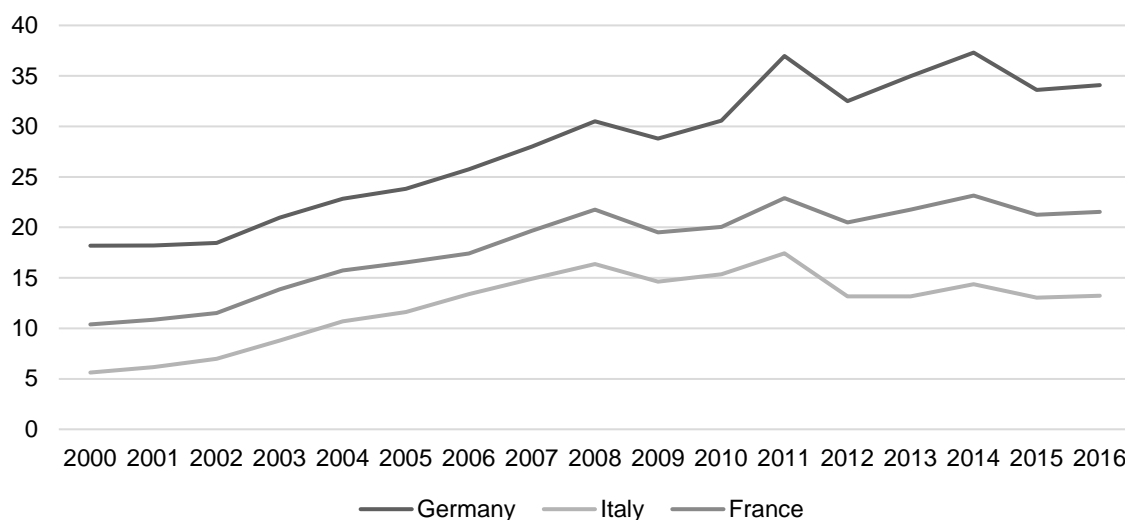
Source: UN Comtrade

The above discussion shows an important long-term trend in the Tunisian apparel industry. While the key trading and production partners of Tunisia were initially Italy, France, and Germany, Tunisia has been losing its position as a production and trade partner with Germany. Both Tunisian apparel exports to Germany and German textile exports to Tunisia have been declining consistently over the last two decades with a faster decline in German textile exports to Tunisia suggesting that some of the apparel exports to Germany are now made from fabrics supplied by other countries such as Turkey or China. This is partially driven by the dramatic increase in the share of Asian exporters to Germany in this period with the joint share of China and Bangladesh increasing from 14% in 2000 to 40% in 2015.

These findings are consistent with the data collected through interviews with firms and sector experts in Tunisia for this study. Interviewees highlighted the decline in the use of European fabrics and the growing use of Turkish fabrics and also the decline in exports to Germany which was attributed to Asian and Eastern European competition. This, they argued, left the industry too dependent on France and Italy as export markets with these two markets experiencing stronger impacts of the economic crisis of 2008 compared to Germany (Figure 13).

The outcome of these dynamics has been the decline in Tunisian apparel exports and Tunisian market share in the EU discussed earlier. In addition to market shifts in the three major European markets (France, Italy, and Germany), the phasing out of the MFA, the economic crisis in 2008 and the Arab spring contributed to this decline. The latter is discussed in detail below.

Figure 13: Total apparel imports of Italy, France, and Germany, US\$ billion



Source: UN Comtrade

#### 4.2.2. Overview of the Tunisian apparel export industry

The Tunisian industry is diverse in terms of size, location, ownership, and in terms of functions performed. While some government statistics do exist, these numbers do not capture the number or size of active firms in the industry. As such, the discussion here will be based on the interviews conducted in Tunisia. In terms of size, the industry consists of around 1,000 actively exporting companies. The majority of these companies (around 80%) are small and medium enterprises with around 10-100 workers while the remaining firms are split between companies that employ few hundred workers each and the few firms that are considered the largest that employ thousand workers and more with the largest estimated to employ around 4,000 workers. The number of firms that employ thousands of workers is around six to ten firms. Geographically, the industry is generally dispersed with firms located along the Tunisian coastline. Some of the important hubs of the industry are Monstair, Soussa, and Grand Tunis.

The ownership pattern of the industry is mixed. It is estimated that around 50% of the industry are wholly or partially foreign-owned with European investors being the main group of foreign investors. However, other key exporting firms in the country are fully Tunisian including some of the largest in the country. Startex for instance, located in Kasr Hellal near Monstair is one of the largest five exporting firms in the country and is fully Tunisian in terms of ownership and staff. Furthermore, there are foreign-Tunisian joint ventures and some of them have very little or in some cases no foreign presence in managerial positions. The general manager of a German-Tunisian joint venture interviewed as part of this study highlighted how in the past, European managers or skilled workers were present in the firm but that now the staff is completely Tunisian. Another major exporter interviewed stated that the company has around 2-3 European members of staff out of a total labor force of around 3,000 workers. As such, it will be wrong to think of the industry as a foreign-owned island concentrated in an industrial zone or two with little linkages with the domestic economy beyond local employment at the low-skilled level. Tunisian capital, managers, and skilled workers are very active in the sector.

In terms of the activities performed, it is estimated that around 80% of the industry performs cut-make-trim (CMT) activities while 20% produce on a FOB system in which they handle

sourcing of inputs and logistics. The FOB firms are the large firms, Tunisian and foreign, while SMEs tend to export on a CMT basis due to lack of capabilities and also limited access to working capital. Proximity to Europe played a role historically in encouraging CMT as it is easy and quick for European firms to send their fabrics and accessories to Tunisia, get them produced, and then send back in a short period of time. With the growing share of non-European fabrics and accessories, most Tunisian firms are still provided with a specific supplier of fabric in Turkey for instance on a CMT basis. This, however, creates a lead time problem for Tunisian firms. One of the main advantages these firms have are proximity to Europe and ability to get products on the shelves of European stores in a very short period. This, however, required quick access to fabrics and accessories. Small firms, however, have not enough financial capital to invest in storage of fabrics. One of the resulting arrangements is the growing subcontracting within the Tunisian industry as the large firms with FOB capabilities invest in sourcing fabrics and in storing them and then distribute them to small producers within Tunisia that produce the garments that are exported through the larger firms.

In terms of buyers, Tunisian firms generally sell to high-end brands in the European market. In the jeans industry, a very important part of the industry, buyers include brands such as Guess, Hugo Boss, Lacoste, Levi Strauss, and Benetton. The large Tunisian firms are conscious on keeping a diversified profile of buyers and in some case turned down orders for larger volumes from one buyer as that will make them too dependent on a single buyer. Many of these large producers, however, argue that exporting to such high-end brands is not necessarily better than exporting to mid-range brands. Although, they argue, the unit price they receive could be slightly higher (although this is not always the case), the volume of orders tends to be smaller which affects their productivity and hence overall profitability in addition to employment in the industry. A senior executive at a major Tunisian exporting firm interviewed for this study, for instance, argued that the negative impact of the last decade on the industry was mainly due to Tunisia being pushed out of the mid-range segments of the European market and that a key objective will be to re-enter those segments.

The industry is also keen on diversifying its markets. Over the last few years, key firms in the industry have been pushing in both Tunisia and the United States to secure duty-free access to the American market although this effort does not seem to be successful for now. Other markets the industry and Tunisian support institutions are targeting are the African market, the market of the Gulf Cooperation Council (GCC), in addition to the Scandinavian market.

#### **4.2.3. Challenges in the context of the Arab spring**

Over the last few years, the Tunisian textile and apparel industry experienced a very challenging period both domestically and in its main export markets.

Domestically, the Tunisian revolution in 2011 represented a major challenge to the political, economic, and social underpinnings of the 'offshore sector' in general and the garments industry in particular. The revolution and the few years that followed had important implications for the industry in a number of ways. First, the revolution led to growing social unrest in the country including a far more active labor movement. This was manifested in the growing number of strikes whether at factories or at ports in the last few years in addition to more involvement of trade unions in collective bargaining at the firm level and at the national level. This was also translated into growing demands for wage increases especially considering the rising inflation in the country. These rising production



costs were an important factor in the decision to devalue the currency in 2017 in order to regain competitiveness in export markets.

The revolution and the security situation that followed also had an impact on the relationship between Tunisian firms and their European buyers. The geographical proximity of Tunisia to Europe provided the country with an important advantage as it was easy for the staff of the European buyer to visit the producing factory in Tunisia on a regular basis. This has changed, however, in the aftermath of 2011 as a number of buyers restricted the travelling by their staff to Tunisia. The shifts in the European market on the one hand and the more difficult production environment and higher production costs on the other hand placed the industry in a difficult position in the aftermath of the revolution. In 2017, for instance, when the Tunisian Confederation of Industry, Trade and Handicrafts (UTICA) agreed to increase wages in a collective bargaining agreement with the Tunisian trade union, exporters of apparel argued that they cannot meet this new wage level and decided to establish a new association for apparel exporters; the Tunisian Federation of Textiles and Clothing (FTTH).

The political crisis following the revolution was particularly a challenge to small firms in the industry. As European buyers and their representatives stopped visiting Tunisia and became skeptical of the ability of Tunisian firms to meet their orders, Tunisian firms struggled to provide assurances to their buyers. Small firms in particular struggled to maintain their position and came under more pressure than the larger firms in the country. Instead of visits by European designers for instance in the past, some of the large companies began to send their own staff to Europe with the samples of the products for inspection and approval. Whilst the trend for buyers to prefer to rely on a smaller number of supplier is more global, the situation in Tunisia provided additional impetus for this shift which drove growing subcontracting within the Tunisian industry. While no specific figures exist, all firms and experts interviewed in Tunisia agreed that a growing share of Tunisian exports are taking place through subcontracting by the handful of the large Tunisian firms rather than by direct links between small firms and European buyers. Increasingly, European buyers are dealing with few FOB firms who outsource production to CMT firms within the country. A small firm interviewed for this study, for instance, explained that prior to 2011, he used to export directly to European buyers but now he mostly exports through a large Tunisian firm. While this, according to him, has resulted in a decline in the price he gets for his orders, the alternative, he argues, would have probably been the complete withdrawal of European buyers from Tunisia in the aftermath of 2011.

Navigating the complex political and economic situation in Tunisia on the one hand and the increasingly competitive European apparel market on the other hand is a main challenge facing the industry. Domestically, the industry has not only experienced a shift in its labor relations but also in the political support it receives from the Tunisian government. Within economic and political decision-making circles in Tunisia, there is a sense that the offshore sector especially apparel has enjoyed many advantages prior to 2011 without delivering wider economic benefits to the country. The industry is countering this narrative by stronger organization through FTTH for instance and by highlighting its role in employment and exports.

Externally, the competition in the European market continues to intensify. If the foundations of Tunisia's position in the European market were three key elements (cost, trade preferences, and proximity), the industry is increasingly reliant on proximity as a competitive advantage as the trade policy advantages continue to erode as other suppliers enjoy similar preferences in some cases (Bangladesh and Pakistan for instance) with simpler RoO. The lack of textile production, however, alongside the small size of Tunisian

firms and their lack of sourcing capabilities make it difficult for most Tunisian firms to exploit this proximity advantage fully as explained earlier.

#### **4.2.4. Main upgrading dimensions and linkages**

From the above discussion, it is clear that the Tunisian apparel industry can be thought of as two distinct groups of firms. The first is a small group of firms (around ten firms) that employ few thousand workers each and operate on FOB basis and the rest of the industry that consist of SMEs that operate on CMT basis. These SMEs export part of their production to European buyers directly but a growing share of their production is being exported through the Tunisian FOB firms. In terms of upgrading, the two parts of the industry perform differently.

In terms of process upgrading, large Tunisian firms had to go through major process upgrading in order to maintain their position in the European market. This was not driven by the attempt to capture more value but more the need to survive in the context of the pressure of the industry. In different stages of manufacturing and in logistics, Tunisian firms had to adopt best global practices to improve productivity and also to shorten lead time of production. This can be seen in the case of the large FOB firms that have developed extensive production, labor, and logistics processes in order to meet the price and time demands of their buyers. While it is difficult to provide an overall assessment of process upgrading in smaller firms, the available indicators and discussions with firms and experts in Tunisia indicate that those firms had to also improve their production processes to increase productivity and to survive in the difficult period the industry experienced. In terms of process upgrading, the larger firms sometimes play a role in promoting process upgrading at their subcontractors through the conditions they require from firms to become their suppliers and also through the specific time, quality and productivity requirements CMT firms have to meet in order to become suppliers for the FOB firms.

As can be seen from the discussion above, the same distinction is important when thinking about functional upgrading. The FOB firms had to go through a process of functional upgrading in order to handle the entire production and logistics process. These firms have accumulated logistics, sourcing, inventory management, and quality assurance capacities with this upgrading becoming more crucial to survive in the post-2011 environment. Some of these firms also have designers that collaborate with European buyers although they cannot be considered to operate on original design manufacturing (ODM) basis. This degree of functional upgrading in the large FOB firms, however, differs from the majority of firms in Tunisia that operate through CMT. Those firms have not expanded the functions they perform and they have little capacities in areas such as sourcing and logistics. Generally speaking, this has not changed in recent years which makes it difficult for these firms to move beyond the CMT model and makes them dependent on subcontracting through the large FOB firms or finding buyers that accept working with CMT firms that has become difficult.

In terms of product upgrading, Tunisia exports to high end buyers in the European market including products that require high skills of production. Hence, the large FOB as well as the CMT firms have production capabilities required for producing more complex and higher value products. The benefits of exporting to this segment, however, are not very clear. According to some of the firms interviewed, exporting to high end brands does not necessarily lead to a higher share of the value-added and in some cases it leads to a lower share in the value-added. The smaller quantities too lead to less ability for firms to benefit from large scale orders even with a low margin. As such, some firms argue that Tunisia should focus on re-entering the larger mid-range segment of the market in the coming years.

In terms of backward linkages, as stated earlier, the apparel industry is largely dependent on European, Turkish, and Asian fabrics and accessories. Although some textile companies exist in Tunisia (SITEX in the Monstair area for example), their output is often exported as fabric rather than used in the domestic apparel sector. This is partially an issue of scale of production as domestic textile production will not be enough to meet the needs of the apparel industry but also an issue of price, linkages, requirements of buyers, and ability of CMT firms to source their own fabrics. We will return to this issue later in the report.

#### **4.2.5. Social and ecological sustainability issues**

As a labor-intensive sector, access to and stability of the labor force is a key issue for apparel firms. Traditionally, the Tunisian industry has relied on workers from the coastal area where most factories are located but also internal migrants from the internal parts of the country. Similar to other apparel exporting countries, the labor force consists mainly of women workers with their percentage in the labor force higher than 90% in many of the large exporting factories. Overall, however, and in comparison to low and middle-income countries, Tunisia has a lower rate of female participation in the labor force (World Development Indicators). In recent years, the flow of migrants from the internal part of the country to the coastal part has slowed down leading to some factories facing labor supply issues. Some of the large companies are trying to deal with this by offering subsidized training in the industry. SARTEX, for instance, one of the largest exporting companies in Tunisia, launched a training center in its main production area in Kasr Helal in the Monastir region. The center offers two years training for new workers with increasing salaries during this period and free accommodation in dormitories owned by the company near the factory. The sustainability of such private initiatives, however, will depend on the number of trainees and on how many of them opt to work in the factory afterwards.

As mentioned earlier, the key social underpinnings of the apparel industry in Tunisia has been tested in the last few years. Following the Tunisian revolution, the labor movement in the country and within the industry became more active. This was illustrated in 2017 in the debates around wages in the industry. In 2016, the Tunisian Confederation of Industry, Trade and Handicrafts (UTICA) reached an agreement with the Tunisian General Labor Union (UGTT) to raise wages for workers in the private sector by 6%. This agreement, however, was not ratified in the case of the textile and apparel industry. The Tunisian trade union planned a strike in the industry on 19<sup>th</sup> and 20<sup>th</sup> of July 2017 to demand the implementation of the agreement in the sector. This strike was cancelled after the sectoral agreement was signed although this triggered the creation of the new association for exporters FTTH as mentioned earlier. In the context of high inflation and currency devaluation, low wages are one of the important symptoms of the crisis that the industry has faced in the last few years. There are, however, other concerns related to working conditions in the country. Although the extreme working conditions common in the apparel industry are relatively rare in Tunisia, over the last ten years, the industry experienced a deterioration in stability of work with growing use of precarious work in the industry. Various forms of atypical and precarious work are on the rise in parallel to the expansion of the informal economy and subcontracting. Collective bargaining at the factory level still differs between different factories as some factories have active trade unions while others do not.

In terms of environmental issues, the Tunisian textile and apparel industry faces serious environmental issues particularly in regard to water pollution. The Monastir Gulf, for example, near a major production area especially of denim products, has experienced serious environmental damage due to the disposal of chemicals and washing water into

the sea. The area has water treatment facilities but their capacity and technology is not adequate.

#### 4.2.6. Industrial policies and institutions

As mentioned earlier, the export-oriented industrial policy Tunisia implemented for decades was a key foundation of the growth in the apparel industry and the upgrading trajectory in parts of the industry. The industry was provided with a range of incentives that were offered to the offshore sector generally. This includes tax holidays for a number of years after establishment and an exemption from custom duties on imports of inputs and on machinery. The apparel industry has, however, limited access to the domestic market with export firms allowed to sell only 30% of their output in Tunisia after following a number of administrative procedures companies argue as being too burdensome.

In addition to the general incentives provided to the offshore industry, there are specific institutions and policies that support the apparel industry in terms of export markets, training, and upgrading. A number of the key agencies are briefly discussed below:

- **The Centre Technique du Textile (CETEX):** Established in 1991, CETEX is in charge of developing technical capacities and training in the textile and apparel industry. The center provides support and training to companies in areas such as testing and quality control, styling and design, feasibility, and production processes.
- **Centre de Promotion des Exportations (CEPEX):** Established in 1973, CEPEX has a mandate to promote Tunisian exports in foreign markets. The center has offices in a number of important markets and organizes trips and participation in industry exhibitions in foreign markets with the textile and apparel industry being one of its main focus areas. CEPEX subsidizes the cost of participation in industry exhibitions for firms. CEPEX also runs the Export Promotion Fund (FOPRODEX) which provides grants and subsidies for export promoting activities. CEPEX also contributed to the World Bank-funded 'Fund for Competitiveness and Export Development (TASDIR+)' which provides funding, technical assistance, and advisory services to Tunisian firms to export (across the economy). Currently, CEPEX is focusing on promoting exports to new markets with a focus on a number of Northern European markets, Sub-Saharan Africa, and the Gulf Cooperation Council (GCC) market.
- **The Ministry of Industry:** The Ministry of Industry plays an important role in industrial policy. Within the ministry, the Agency for the Promotion of Industry and Innovation (API) was established in 1972 to provide support to encourage industrial upgrading and development. API operates through sectoral units and textile and garments is a key focus area of its work. API receives upgrading plans from a firm and, if approved, provides financial support to the implementation of these plans (10% to 20% of the cost). The Ministry of Industry also managed the Competitiveness Development Fund (FODEC) which is funded through a 1% tax on all goods manufactured in Tunisia and offers financial support to exporting Tunisian firms.
- **The Tunisian Agency for Technical/Vocational Formation (AFTP):** AFTP is a specialized agency within the Tunisian Ministry for Technical/Vocational Formation. AFTP was established in 1993 with the mandate to help develop capacities in different sectors. The AFTP is organized in different sectoral units that offer training programs in different industrial sectors. Textile and apparel is one of the area in which the AFTP operates training centers in different parts of the country where the industry is concentrated.

While it is difficult to assess the effectiveness of these tools, there is a high degree of skepticism in the industry toward these programs. In the area of technical and vocational training, the AFTP centers are criticized for not updating their training programs and for largely producing graduates that do not match the needs of the industry in terms of skills leading some companies to start their own training centers as is in the case of SARTEX mentioned earlier. CEPEX is similarly criticized for weak communication with the industry. Companies, for instance, complain how industry exhibitions are chosen with little input from the industry often leading to participation in exhibitions focused on markets where Tunisia has little opportunity to export to. More broadly, a number of available tools tend to be focused on individual firms and are largely firm-driven which limit the overall strategic direction of upgrading, particularly if they are not designed in a way that ensures a pilot character and replication and scaling up.

The overall industrial policy, however, is being rethought by the Tunisian government. The incentives that were offered to the offshore sector came under attack for being too generous to these industries without providing economic and social benefits to the economy. As such, recent legislations were passed in the last two years. This includes a new investment law (No. 71 for the year 2016), a new government decision (No. 389 for the year 2017) regarding investment incentives, and a new taxation law (No. 8 for the year 2017). While these are applicable to the entire economy, in June 2017, the Tunisian government adopted a range of measures (23 in total) to support the textile and apparel industry in specific. Some of these measures are related to restructuring of debt and contribution to pensions but others have more industrial policy nature. Some of the new provisions are:

- Setting-up a financial fund to help companies that are experiencing economic difficulties in terms of debt or in terms of working capital.
- Measures to help CETEX in providing training and skills formation in the industry.
- Allocate an additional 2.2 million Tunisian Dinar to the textile and apparel budget at API for the period 2017-2019 in order to organize events to promote investments in the sector, organize a textile and apparel week, and to organize meetings with global brands to encourage them to invest in Tunisia.
- Allocate an additional 4.5 million Tunisian Dinar to the budget of CEPEX for the period 2017-2019 to intensify export promotion activities especially in new promising markets.
- Speeding up the establishment of the joint water treatment facilities at the Monastir region.
- Adding the issue of tariff duties on jeans trouser to the agenda of the Tunisian-American committee in order to improve market access to the US market.

In terms of international development cooperation, an important industrial upgrading project that is taking place in the sector is being managed by the International Trade Center (ITC) with funding from SwissAid. The phase one of the project, called ComTexha (after its French name, Appui à la Compétitivité de la chaîne de valeur du secteur **textile** et habillement), was concluded in 2017 (2015-17) focused on forty apparel companies of different sizes with the aim to help move these companies from CMT to FOB. The companies were in four segments in the industry: swimwear and lingerie, denim, technical textile, and ready to wear. The project was focused on three core areas: Sourcing, skills and labor supply, and market diversification. On sourcing, the focus was on training sourcing managers for these firms, establishing new sourcing networks (with a trip



organized to Egypt as part of the project), and encouraging joint sourcing. In terms of skills, the program focused on developing specific skills that are important for FOB production such as production engineers who oversee the entire production process in the factory. The project also aimed at helping in market diversification for these forty firms with focus on Scandinavian countries (Sweden and Denmark), Russia, Africa, Gulf states, Spain and the Netherlands. ITC is now working on the second phase of this project which will be from 2018 to 2022 and is a global project called the 'Global textile and clothing program' and include Tunisia, Morocco, Egypt, Tajikistan, and Kyrgyzstan.

#### **4.2.7. Impact of the DCFTA**

Negotiations on the DCFTA have started in October 2015. So far, only one negotiation round in April 2016 has taken place, and, as of July 2017, no schedule for the negotiations has been agreed upon. Similar to other recent EU trade agreements, the DCFTA is a 'deep and comprehensive' trade agreement. The currently published textual proposals for the DCFTA (June 2017) suggest 11 chapters, including a trade in agricultural and fisheries products chapter and topics directly affecting trade flows (e.g. TBT, SPS, ROO, etc.) as well as chapters on services, investment, government procurement, competition, intellectual property rights and sustainability. Given the substantial trade flows between Tunisia and the EU and the latter's role as a source of FDI to the country, the DCFTA will have an important role for the future development of the Tunisian economy.

As seen in the discussion above, the roots and the current position of the Tunisian apparel industry in the global value chain is largely driven by the trade relationship between the EU and Tunisia. While the FTA (and the OPT arrangements earlier) provided a key impetus for the rise of Tunisia as an apparel exporter to the EU, these agreements also had important impacts on the division of tasks between the EU and Tunisian and with third countries as well. As discussed in the previous section, RoO and the requirements for double transformation have major impacts on Tunisia's position in the European market especially due to the limited textile production capacities in Tunisia. This issue of RoO is perhaps the main issue raised by Tunisian firms as the challenge they face to maintain their market share in the European market. The requirements to do 'double transformation' forces these firms to use European or Turkish fabrics that are substantially more expensive than Asian fabrics especially, according to some firms, when requesting a certificate of origin from the supplier. Such rules, they argue, made sense when Europe was the main supplier of fabrics and when few other producers had preferential access to the European market. Today, however, the share of Europe in supply of fabrics is declining and Tunisia is at a disadvantageous position as competitors such as Bangladesh can export to the European market duty-free with 'single transformation'.

From the perspective of Tunisian firms and key sector experts, the DCFTA with the EU is unlikely to have major implications on the sector. Today, the Association Agreement signed in 1995 between Tunisia and the EU grants DFQF access for apparel products. The DCFTA thus yields no potential in terms of tariff reductions for the T&A sector. Instead, the Tunisian T&A sector is increasingly confronted with preference erosion due to the EU's expansion of free trade agreements, which also includes competitive apparel exporting countries such as Vietnam. The EU will very probably not change its general stance on double transformation in its FTAs; the EU only offers single transformation to least developed countries in the context of Everything But Arms (EBA) and the Economic Partnership Agreements (EPAs) with ACP countries. In terms of investments, while the DCFTA might encourage more European investments into the Tunisian economy, it is difficult to see a large share of these investments going into the textile and apparel industry unless the overall competitive challenges facing the industry and driving its decline in the



European market are reversed. As such, there seems to be little interest in the DCFTA by Tunisian apparel firms.

### **4.3. SWOT analysis**

#### **4.3.1. Strengths**

- Despite recent difficulties, Tunisia remains an important producer and exporters of apparel products with strong and historical trade, business, and cultural linkages with its main European export market. The country also has a reputation with its buyers in some European markets as a traditional supplier of apparel products to those markets.
- Tunisia has a domestic entrepreneurial and managerial class working in the industry. While foreign firms are active in Tunisia, the industry is embedded in the local economy even in most foreign firms as senior managerial and technical staff are Tunisian. In addition, some of the large firms in the industry are owned by Tunisian capital which provides a degree of protection to the industry in the face of economic crisis as illustrated to a degree in the post-2011 period.
- Tunisia has preferential access to the European market through its FTA with the EU. Despite many of Tunisia's competitors having similar access, this remains an important comparative advantage vis-à-vis potential competitors.
- Tunisia produces generally more complex and higher value products compared to other main apparel supplier countries. This can be seen in the above average unit values of eight of its top ten export products in the EU market.
- A number of Tunisian firms have upgraded their operations in terms of moving to FOB activities and also to contribute to design. Through this, these firms have built capacities in logistics, sourcing, design, and other areas that are important for the upgrading of the Tunisian industry.
- Tunisia has a thick and well-developed institutional support framework for the industry. While work is needed to improve its effectiveness, basic elements of the support regime for industrial upgrading are in place.
- Although there are issues related to working conditions in Tunisian factories, working conditions in Tunisian factories remain relatively good in comparison to some competitors. This provides Tunisia with an advantage in the context of growing concerns around working conditions in apparel factories.

#### **4.3.2. Weaknesses**

- The Tunisian apparel industry is not only dependent on the EU market but on a small number of markets within this market. Rather than diversifying within the EU, Tunisia has lost significant market share especially in Germany leading to dependency on Italy and France.
- The Tunisian apparel industry is highly concentrated on the export of few products. This represents a weakness to the industry as it makes the sector subject to shift in a small number of products.
- Tunisia has a small textile and accessories industry. This is a major weakness of the sector as it complicates the supply chain and limits the ability of local firms, especially small and medium enterprises, to exploit geographical proximity to market and makes them dependent either on buyers or large domestic firms with ability to import and store fabrics in large quantities.

- The majority of Tunisian firms lack sourcing capacities which leads to high dependency on suppliers nominated by buyers or, to meet RoOs, Turkish fabric suppliers. This increases the cost of production in Tunisia as prices in Europe or Turkey tend to be higher relative to other potential regional suppliers that would fulfill the double transformation RoO. The lack of sourcing capacities limits the ability to explore and build connections with those alternative suppliers.
- As an 'off shore industry', the apparel industry has very limited sales to the domestic market. Although the Tunisian market is small, selling in the domestic market could provide a degree of protection in addition to an opportunity for learning in areas such as design, branding and retail.

#### **4.3.3. Opportunities**

- While competition is intensifying in the European market, Tunisia's proximity to the EU provides a strategic potential advantage in the market. Proximity to market is an important source of competitiveness in the apparel industry as segments of the sector require quick lead time. This proximity to Europe, and good transportation connections to Europe, will provide Tunisia with an advantage in the market.
- Tunisia has an established position as an exporter to the EU with generally high quality and high value products. The possibility of moving into FOB production and of focusing on developing design services provides the industry with an opportunity to upgrade and to boost its contribution to the national economy.
- While dependency on a small number of European markets is a weakness for the Tunisian industry, it also provides an opportunity for the industry to expand and upgrade. With focused efforts to diversify markets within Europe and outside Europe, the Tunisian industry could increase its total exports and could also focus on capturing higher value-added products and segments.
- There is an opportunity to develop from stronger linkages in the industry within the North Africa region. This can be in areas of production and sourcing with countries such as Egypt and Morocco but also in terms of expanding exports to the regional market.
- The absence of a domestic textile and accessories sector on the one hand and the demand for fabric and accessories on the other hand indicate that there is an opportunity to achieve higher economic value added, create employment, and boost linkages within the Tunisian industry by encouraging the development of national textiles and accessories industry. This will have positive implications on major issues faced by the industry, particularly small and medium enterprises, such as lead time and working capital financing.

#### **4.3.4. Threats**

- Tunisia is still passing through a difficult political period. Being a labor-intensive industry, the apparel industry is sensitive to social and political unrest. This is especially the case considering that buyers are risk-averse and make their sourcing decisions early. Hence, they tend to drop countries where they suspect production or transportation might be interrupted. Tunisian firms experienced this in the years following the 2011 revolution and ongoing or future political and social developments could lead to a similar experience.

- Production costs in Tunisia have increased in recent years especially due to inflation and labor cost. The government has dealt with this through devaluation of the Dinar. Devaluation, however, is a factor in higher import prices driving social unrest and also driving up the prices of inputs for the industry. If production costs continue to increase, Tunisian firms might struggle to maintain their position in the European market.
- Tunisia faces the gradual erosion of its trade preferences to the EU as more countries sign FTAs with the EU. This means that one of the core factors in Tunisia becoming an apparel exporter to the EU will continue to decline forcing Tunisia to only compete on factors such as quality, cost, and time-to-market.
- The labor supply issues parts of the industry are facing could intensify with further demographic and internal migration shifts. The industry is reliant on women workers for more than 90% of the labor force in most firms and women participation in the labor force in Tunisia is relatively low. The industry is also reliant on young workers. With Tunisia going through demographic transition processes, the share of young people in the overall population has declined. In the period 1998 to 2016, the percentage of women in the age groups 15 to 29 has declined from 28.4% to 23.3% (from all women population) while the share of men in the same age group declined from 28.3% to 24.2%. While some of these trends could be temporary (the population growth in Tunisia declined in the late 1990s/early 2000s before increasing again in the second half of the 2000s and in the 2010s), issues around age structure, labor market participation, and internal migration will have important implications for labor supply and wages in a labor-intensive industry such as apparel.

#### **4.4. Sector development strategies and policy recommendations**

##### **Develop a framework for strategic industrial strategy**

The challenges facing the Tunisian apparel industry are complex and have contributed to the overall decline in the industry in recent years. A key part in this decline is the lack of a coherent effective overall strategy for the sector. Despite the number of institutional actors in Tunisia working on different elements of industrial policy, the work of those actors seems fragmented without an overall coherent strategic direction. A number of the industrial policy tools are enterprise-driven which limits the overall strategic orientation of these tools and fails to address lack of information about new processes, new products, new markets, etc. at most of the domestic enterprises. While preferential trade access to the EU market in addition to proximity to this market have enabled the industry to survive and expand in previous decades, this lack of strategic direction and coherence is proving a more serious constraint in today's more competitive market.

There is a need to engage the different actors in Tunisia (the government, the firms, the workers, and the support institutions) in a process that aims to create a forum for strategic analysis and strategic industrial policy in the sector. While the specific format of this framework needs to be developed further and discussed between the relevant actors, there is a need for strategic industrial policy based on systemic analysis of shifts in global value chains. This requires capacity building in analysis of global value chains in the industry to feed into developing strategic industrial policy in the apparel industry.

##### **Leverage the subcontracting system in the industry for industrial upgrading**

The Tunisian industry is diverse in terms of size and capabilities and functions performed. An overall strategy should recognize that different firms have very different positions in global value chains and also have very different levels of capacities. Small firms operate

mostly on CMT basis with very limited capacities in logistics, supply chain management, or access to finance for working capital while some of the large firms are FOB producers with capacities in areas such as input sourcing, logistics, storage, design and product development. This means that programs to develop the industry need to focus on different areas for different types of firms. The fact that small firms export both directly and through large Tunisian firms creates the possibility for a dual strategy that targets small firms directly but also leverage the subcontracting system that is increasingly important in the industry to promote upgrading in large firms and small firms. While building FOB capacities at the hundreds of small firms is potentially possible, it might be found that a more realistic strategy is to develop FOB capacities at a larger number of medium and large firms while using the subcontracting system as an additional channel to improve capacities at the small firms. At the moment, to become a subcontractor to one of the large firms, small firms are often assessed in terms of productivity, quality, machinery, production processes, etc. by the large firms. It might be possible to think about policy tools that facilitate such networks to develop capacities at small firms and to improve issues of working conditions and environmental sustainability.

A multi-dimensional strategy and policies would be required that focus on a) large and medium firms, b) Small firms directly, and c) Small firms through subcontracting relationships with large firms. Each part of this strategy should focus on different capacities and different mechanisms of implementation relevant for the specific types of firms and their challenges.

### **Invest in design and branding capacities for large and medium firms**

Some of the large firms in Tunisia are collaborating with their buyers in areas of design and product development. This is an area where a more active strategy could be developed to build capacities and to encourage Tunisian firms to expand their role in this area. While a shift to complete ODM might be difficult in the context of existing buyers, the push toward market diversification and new markets could create space for selling on ODM basis by Tunisian firms creating a higher level of value-added.

In collaboration with firms and existing support organizations such as CETEX, strengthen capacity building in the areas of design and product development. Identify barriers to focus on this area in existing value chains and identify opportunities to move into these activities in new markets and value chains.

### **Invest in sourcing and supply chain management capacities at SMEs with a focus on regional sourcing**

One of the areas that Tunisian SMEs lack capacities is the area of sourcing and supply chain management capacities. This weakens the position of Tunisian firms as it leaves them dependent on their buyers or on suppliers nominated by the buyers with little ability to develop alternative sources of supply. This suggests the need to develop joint and individual capacities in this field. CEPEX for instance was working with some firms on joint sourcing from new sources and organized a trip to Egypt for this. Such joint efforts could be expanded to overcome the barriers created by the small size of most firms. Over the last three years, a project managed by the ITC attempted to build sourcing capacities at 40 Tunisian firms. Such efforts should be developed and expanded.

Explore ideas to develop sourcing capacities at small firms and also to examine the possibility of joint sourcing capacity building between a number of small firms possibility on a regional level. Support medium and large firms to develop new sourcing linkages

possible on a regional level. The decision by the Tunisian government earlier this year to provide financing for the industry should be followed.

### **Invest in CMT development at SMEs**

While the overall industrial strategy in Tunisia should focus on shifting the industry from CMT to FOB and even ODM, it should be discussed how realistic this is for small firms in the industry. As such, there should also be a focus on developing the position of small firms within the CMT model and not only to encourage their movement to FOB. This could include focus on process and product upgrading, diversifying the client base for CMT, and social and environmental upgrading.

Recognizing the different capacities, needs, and different upgrading potential for small firms, develop specific policies that aim at strengthening the position of such firms within their CMT networks focusing on client diversification, process and product upgrading, and social and environmental upgrading.

### **Invest in improving access to capital for the industry**

Access to finance is an important barrier facing the industry. This includes access to working capital financing which is needed for firms to move from CMT to FOB. It also includes access to investment capital with some interviewees reporting that the majority of commercial banks have stopped lending to the industry following the problems the industry faced in recent years. As discussed earlier, the Tunisian government has included issues around access to finance to the measures it adopted to support the industry in 2017. It is not very clear however how effective the implementation of these measures will be. This is particularly an important issue for SMEs in the sector.

Access to both investment and working capital for the industry needs to be improved. While policies to improve access to working capital should be part of the strategy from CMT to FOB, there is also a need to think of investment capital for expansion of firms, investments in new technology, and also moving into new segments within the industry.

### **Boost efforts for market diversification**

As long as the Tunisian apparel industry is dependent on a small number of markets within the European market, the industry will face threats posed by market or trade shifts. This could include shifts in the sourcing policies of leading buyers in those markets or growing competition from other suppliers. While it is natural for Tunisia to focus on the European market as its main market, there is a need to go beyond the Italian and the French markets and to target other markets within the EU. Furthermore, there should be serious efforts to open-up new export markets in the region, in Sub-Saharan Africa, and in other emerging markets. The barriers to selling in the domestic market should be removed and Tunisian firms should be encouraged to move into design, branding and retailing in the domestic market and new export markets.

Market diversification is a key focus area of the Tunisian government and industry at the moment with organization such as CEPEX focusing on new markets within the EU and markets outside the EU. The interviews in Tunisia, however, showed that there is weak coordination in these efforts and many in the industry feel they have little input in shaping the direction of these efforts. A more coordinated market diversification is needed that is based on a decision-making process that involves all actors and that is based on a comprehensive analysis of these potential markets. A specific focus should be given on regional and emerging country markets given their larger potential to upgrade to ODM and OBM production.



## **Support product diversification**

In addition to concentration in a small number of markets, Tunisian exports are also concentrated in a relatively small number of products. Although in some of these products Tunisia occupies a high value-added segment, this concentration remains a threat to the industry as it leaves it subject to shifts in markets and in sourcing decisions of buyers or to shifts in trade policy and preferences. Product diversification should thus be an important objective of the industry. The question about value versus volume needs to be part of the analysis. As discussed above, some firms in Tunisia interviewed for this study have highlighted how the decline in Tunisian market share was linked to the country losing its position in intermediate value products where the volume tends to be higher. In fact, two of the main exporting companies argued that there are limited benefits to supplying at the high end of the market as the combination of volume and margin factors make it better to operate also at the intermediate levels of the market. Such analysis needs to be expanded as part of preparing a strategy for the sector.

The strategy for the industry should not only focus on market diversification but also on product diversification in order to strengthen the position of the industry. This should include analysis of value and volume of different segments and overall benefits to the economy.

## **Support of a national textile and accessories industry**

The limited textile industry in the country is also an issue that should be examined in more details as it increases production costs and prolongs production lead time. Considering that most firms in Tunisia are small enterprises, the absence of domestic textile capacities make these firms more dependent on their buyers or on large Tunisian firms and also makes it difficult for such firms to fully exploit the advantage of proximity to market. A national textile industry would however not only address competitiveness and upgrading challenges of the industry but also increase the economic benefits of the apparel export sector in terms of broader linkages, value added, employment and skills.

This is particularly important in the context of the demands by the industry for the EU to change its RoOs with Tunisia and to offer single transformation. Single transformation will benefit the Tunisian apparel industry in terms of increasing flexibility to source competitive textiles in particular from China, Pakistan, India and other producer countries and will limit the reliance on Turkish textiles which the industry sees as damaging. Given the difficult external and internal situation of the industry, single transformation will be a useful short-term measure to support the industry. This notwithstanding, the potential impact of the single transformation rule, however, also depends on the EU buyers' sourcing requirements.

Nonetheless, given the fact that the EC has so far offered single transformation only to selected countries (e.g. least-developed countries within the framework of EBA or ACP countries within the EPAs), it cannot be taken for granted that a likewise offer will be extended to Tunisia. In fact, discussion in Tunisia with exporters show a general feeling that their request for single transformation will not be met.

The expansion of the textile sector should regain strategic importance in order to benefit from lower lead times, input costs and an expansion of value added activities. The reduction of lead times due to the availability of local fabrics could particularly benefit the fast fashion segment of Tunisia's apparel sector. Given limited state and industry capacities, developing the domestic textile sector will need to adopt a long-term and gradual trajectory. In a first phase, the focus should lie on developing a domestic industry



for finishing services and accessories firms, before more ambitious projects for the development of more technologically advanced textile production can be envisaged. Such a long-term strategy should be supported by EU development cooperation, both in terms of providing technical advice and financial support via e.g. the provisioning of investment credits for EU companies with an interest in setting up textile mills in Tunisia.

### **Boost efforts to promote regional value chains**

While arguments for regional integration especially in North Africa are frequently made, there is still little progress in achieving such integration. Issues related to political factors, logistics, and business networks, limit trade and joint production in the region. In the apparel sector, however, there is a space to promote cooperation and joint production between the three major exporting countries in the region (Morocco, Egypt, and Tunisia). As mentioned earlier, CEPEX for instance is assisting Tunisian firms in building sourcing networks in Egypt which has a larger textile industry than Tunisia. There is also space for learning in terms of market and product diversification. The ongoing efforts, however, seem largely ad-hoc and there is little institutional-level work in relationship to this. More ability to export regionally could also help firms to expand in a new market.

Boost the efforts to promote linkages with regional producers especially in Egypt and Morocco by analyzing regulatory and logistic factors that act as barriers to further cooperation and also by focusing on building business networks between the sectors. The need for an institutionalized framework of cooperation in the industry needs to be investigated.

### **Promote social upgrading and environmental sustainability**

While economic upgrading is very important for Tunisia overall, it is crucial not to ignore social and environmental factors in the industry. This is not only important from a development perspective but also from a competitiveness perspective, as many buyers have taken social and environmental compliance more seriously and developed their own codes of conducts in the context of pressures in consumer countries and the recent tragedies in Asian supplier countries. Buyers' codes of conducts or industry-wide certification schemes can have an important role to improve compliance, but impacts of such schemes depend on the extent to which the core sourcing policies of buyers in terms of prices, lead times, flexibility and short termism are aligned with demands in these schemes. Otherwise there is the danger that they add another layer of costs and responsibilities on the supplier firm without helping them to fulfill them through actual support or higher prices or less flexible and short-term sourcing relationships (see Plank et al. 2014).

The issue of water pollution in particular needs to be treated as an urgent issue with the negative impact of pollutions in areas such as the Monstair Gulf is having on agricultural, fisheries, and tourism which are important sectors for local livelihood and also for the Tunisian economy.

In terms of labor issues, and while recent political developments in Tunisia and especially growing labor unrest is often seen negatively by firms and buyers, it is important to see this as a positive development overall that should challenge the industry to upgrade economically but also to promote better social and labor relationships in Tunisian factories and to expand the social benefits of the industry.

Addressing the environmental damage of the industry needs to be one of the top priorities in the sector. Recent attention by the Tunisian government should be welcomed but more work and continuous attention to this issue is needed. Labor relations in the industry need

also more policy attention to encourage continuous dialogue between workers and firms and to design policies to promote wider social benefits.

### **Use development cooperation in strategic policy areas**

Particularly European development cooperation has played an important role in supporting the textile and apparel industry in Tunisia. Its role should be continued focusing on areas where we believe such assistance will be most useful:

- Developing an industrial strategy for the sector
- Market research for export diversification
- Feasibility of promoting the textiles and accessories industry
- Environmental sustainability
- Targeted training

Through targeted industrial policies in those areas, the Tunisian industry would be able to upgrade its operations and to increase its share in the total value-added which will have positive economic and social impacts on Tunisia and on European-Tunisian economic relations. An important overall area where development cooperation could make an important contribution is capacity building at the strategic level of industrial policy. While Tunisia has a number of dedicated industrial policy agencies, there is a need for stronger analysis of the position of Tunisian firms in global and regional value chains and on potential markets for diversification and paths for upgrading. Choices for market diversification, for instance, need to be based on a solid understanding of potential markets and global value chains and this understanding needs to be updated regularly through constant monitoring and analysis of market trends. This requires strategic analysis capacities in Tunisia and development cooperation could be an effective way to build such capacities. European assistance to Tunisia on diversification within the EU market could also be useful. European assistance could also be very useful in developing an industrial strategy for the sector that outlines in more details specific policies and implementation tools. In particular, there is a need to develop better understanding of the subcontracting system in Tunisia and what are its implications for issues such as value distribution, internal linkages, working conditions, and potential for upgrading. This report has highlighted the need to think of ways to use this system to promote economic and social upgrading in the industry. Environmental degradation is another area where there is a responsibility of European buyers to ensure better environmental standards in their sourcing locations including Tunisia. There is a need for stronger pressure from European policy-makers in this regard and need for European support in dealing with this issue.

## **4.5. Conclusions**

Tunisia has a long history and tradition in the textiles and apparel industry. The modern sector in the country has grown in the second half of the 20<sup>th</sup> century as a result of national industrial strategies on the one hand and important shifts in textile and apparel global and regional value chains on the other hand. In this context, Tunisia emerged as an important supplier to the EU benefitting from proximity to and from preferential market access to the European market. The industry grew as a result and became an important employer in the country and an important source of foreign exchange through exports. Starting in the mid-2000s, however, the industry began to feel the pressure of growing Asian competition in the European market and a downward trend in the market share of Tunisia in the European market began. These difficulties were intensified following the political revolution the

country witnessed in 2011 as economic and social pressures led to growing production costs and to more frequent labor unrest in the industry and in supporting sectors especially logistics.

From the European perspective, Tunisia is an important partner for the EU in the North Africa region. The country has long-standing cultural and economic ties with a number of European countries. Over the past few years, Tunisia was seen as a success case of political transition and as moving into a more democratic political system. The country, however, is facing serious economic difficulties especially in terms of rising domestic costs and growing competition in its traditional export markets. Providing support for the textile and apparel industry could be an important way to help develop the economy. While European development assistance agencies have provided such support in the past, there is a need to develop new programs and tools that address the current challenges facing the industry.

This study has highlighted a number of challenges facing the textile and apparel industry and policy recommendations to address them have been identified. The **key policy recommendations** developed in this study can be summarized as follows:

- **Develop an industrial strategy for the sector:** In the context of rapid economic and political shifts in Tunisia, there is a lack of strategic clarity on the role and the future prospects of the industry. Such clarity ultimately needs to come from the Tunisian political and economic decision-making processes but there is also a need to provide better strategic understanding of the future of the industry.
- **Leverage the subcontracting system for industrial upgrading:** Given that different firms have different positions in global value chains and different levels of capacities, programs need to focus on different areas for different types of firms – medium to large firms can be supported to functionally upgrade to FOB production as well as extend and improve design and branding capacities whereas smaller firms can be supported in process and product upgrading as well as in exporting directly to buyers but also in entering larger firms subcontracting networks as CMT suppliers.
- **Invest in improving access to capital:** Access to working and investment capital is an important barrier facing the industry. While policies to improve access to working capital should be part of the strategy from CMT to FOB, there is also a need to think of investment capital for expansion of firms, investments in new technology, and also moving into new segments within the industry.
- **Boost export and product diversification:** Market and product diversification should be a key objective of the industry. There is a need for this strategy to be designed based on a strong market analysis and deep understanding of the value chains serving targeted markets in and outside Europe as well as on an analysis of different products and segments in terms of value and volume and overall benefits to the economy.
- **Promote the textiles and accessories industry:** With single transformation RoOs unlikely to be granted, there is a need to develop the national textiles and accessories industry. A gradual trajectory would be useful – developing firstly a domestic industry for finishing services and accessories firms, before the development of the more technologically advanced textile production should be envisaged.
- **Ensure environmental sustainability:** This is an area that needs urgent attention and there is a need to work with Tunisian authorities, Tunisian producers, and European buyers on addressing the environmental damage the industry is causing in a number of key manufacturing locations.

- **Boost efforts to promote regional value chains:** Linkages with regional producers especially in Egypt and Morocco should be supported by analyzing regulatory and logistic factors that act as barriers to further cooperation and also by focusing on building business networks between the sectors. Further, the need for an institutionalized framework of cooperation in the industry needs to be investigated.

## 5. ECONOMIC UPGRADING IN THE TUNISIAN OLIVE OIL SECTOR

### 5.1. The global olive oil value chain

The production of olive oil is geographically concentrated in Mediterranean countries. EU countries are the most important producers with a global market share of more than 70% (IOC 2016). EU countries are also the major consumers of olive oil taking up more than 55% of total output in 2015/16 (ibid.). However, non-EU markets became more important over the last two decades, especially the US. The olive oil GVC has characteristics of a buyer-driven bi-polar value chain with lead firms in the manufacturing of bottled and branded olive oil as well as in the retailing segment (distributor brands) (cf. Coq-Huelva et al. 2011). Lead firms in core EU producer countries focus on high-value added activities, in particular bottling and branding and/or retailing, for which they combine olive oils from various producers and origins. Thus, they exert strong control over the value chain, which makes it difficult for producing countries and exporting companies outside the EU to achieve functional upgrading and promote higher value activities. With increasing demand for olive oil in non-traditional markets, however, exporting companies and brands outside the EU gain opportunities to increase the share of higher-value added product exports. Hence, the opportunities for functional upgrading have to be seen in the context of changes in the global olive oil value chain.

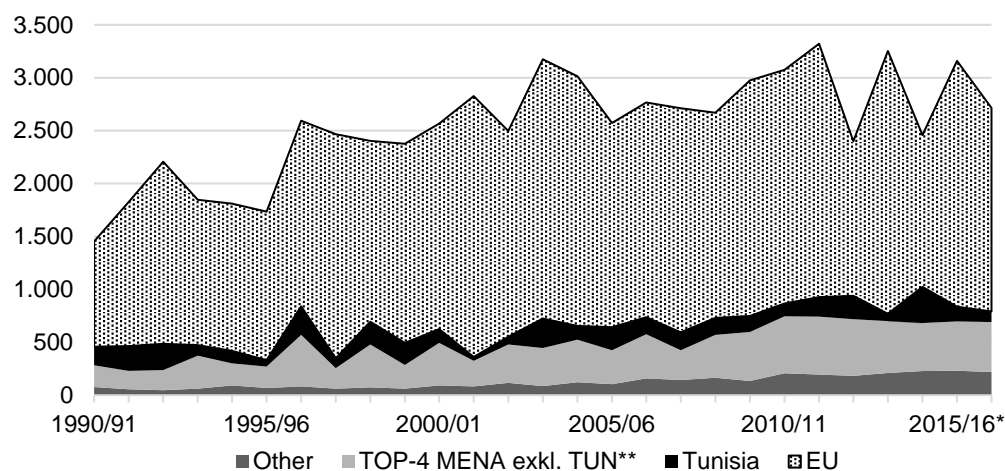
The development of the international olive oil market during the last three decades can be roughly divided into three phases (Lybbert/Elabed 2013). In the first phase until the early 1990s, the expansion of supply and demand has been relatively balanced due to increasing production in the major EU producing countries and increasing demand in non-traditional markets (in particular Northern Europe). In a second phase, starting in the mid-1990s, there has been significant production growth (Figure 14). Total output of olive oil expanded from 1.7 million tons in 1995/96 to 3 million tons in 2003/4 (IOC 2016). During the third phase, the spread of the Mediterranean diet to 'health-conscious' consumers worldwide has broadened olive oil markets and stimulated increasing market segmentation by price and quality. In particular, markets for high-value extra virgin oil and top-quality, single origin oils with unique flavor profiles emerged (Lybbert/Elabed 2013). The combination of increasing demand in non-traditional markets and the increasing importance of niche markets has created opportunities for non-EU exporting companies to increase production and diversify exports by destinations and grades.

The processing of olives to olive oil and further processing of oils largely determines the final quality of olive oil. Thus, the exact arrangement of the olive oil value chain depends on the defined olive oil grades<sup>39</sup>. The olive oil value chain can roughly be divided into five stages: (i) the supply of inputs for olive tree extension; (ii) the production of olives, including growing of the tree and harvesting of the fruit; (iii) the processing of the olives by mills and, depending on the grade, refineries; (iv) the packaging (and potentially blending); and (v) the distribution of olive oil, e.g. by large or niche retailers. The value chain might include various other actors, such as traders and other intermediaries, for example between olive oil producers and packagers/exporters.

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<sup>39</sup> The International Olive Council (IOC) differentiates virgin olive oils fit for consumption (extra virgin olive oil, virgin olive oil, ordinary virgin olive oil), virgin olive oil not fit for consumption (lampante virgin olive oil), refined olive oil, olive oil, olive pomace oil, crude olive pomace oil and refined olive pomace oil (IOC n.d.). (Extra) virgin olive oils comprise the highest quality. Refined olive oil is obtained by refining virgin olive oil. However, olive oil – next to virgin oils usually found in supermarkets – consists of a blend of refined olive oils and virgin olive oils (ibid.).

Figure 14: Olive oil production volume over time (thousand tons)



Notes: \* Provisional data; \*\* Algeria, Morocco, Syria, Turkey.  
Source: IOC 2016

As indicated above, the production of olive oil is regionally highly concentrated. The top six producers are located in the Mediterranean region and were accountable for 92.6% of the production in the crop year 2015/16 (Table 15). The EU – in particular Spain, Italy, Greece and Portugal – represents by far the largest share of global production (73.5%). It is also the largest exporting group of countries (73.5% of global exports, excl. intra EU trade). MENA-countries export only a small share of their production. Tunisia is the exception. The country exported around 100,000 tons out of 140,000 tons produced in 2015/16. Tunisia thus exported 71.4% of its production, which represents a global export share of 12.1% in 2015/16 (Table 15).

Table 15: Global olive oil production (crop year 2015/16) and exports (2015/16)

		Production volume (thousand tons)	Share of global production (%)	Export volume (thousand tons)	Share of global exports (%)
1 (1)	<b>EU-28</b>	2,322	73.5	610*	73.5
	<i>Spain</i>	1,401.6	44.0	326.1	39.3
	<i>Italy</i>	474.6	15.0	219.5	26.5
	<i>Greece</i>	320	10.0	10.2	1.2
	<i>Portugal</i>	109.1	3.0	47	5.7
2 (4)	<b>Turkey</b>	143	4.5	20	2.4
3 (2)	<b>Tunisia</b>	140	4.4	100	12.1
4 (5)	<b>Morocco</b>	130	4.1	16.5	2.0
5 (9)	<b>Syria</b>	110	3.5	5	0.6
6 (-)	<b>Algeria</b>	83.5	2.6	0	0
12 (3)	<b>Argentina</b>	19	0.6	30.5	3.7
	Other	212	6.7	47.5	5.7
	<b>Total</b>	<b>3,159.5</b>	<b>100</b>	<b>829.5</b>	<b>100</b>

Notes: Provisional data; Sums may differ due to rounding; \* Extra-EU trade only, including inward processing traffic  
Source: IOC 2016

The EU is by far the largest consumer of olive oil and meets its demand mainly via domestic production (Table 16). The EU is nonetheless still the second largest importer of olive oil following the US. The large majority of EU imports consist of bulk ware, which is processed further by EU buyers (blending, branding, bottling, etc.). Depending on the



country of origin, these imports are imported duty free or take place either under certain quota criteria or within inward-processing arrangements. The latter allow for duty-free imports from third countries under the condition that the equivalent oil quantity is exported outside the EU after processing. These arrangements strengthen the EU's position as major exporter of olive oil. The US and other non-traditional markets such as Japan, Brazil, Canada and China meet consumer demand mainly by imports and tend to have a large share of bottled and branded imports. The relatively high domestic consumption in the traditional producing countries of the MENA region is met by domestic production.

Quality standards and grades are of major importance in the olive oil sector. The International Olive Council (IOC) as an intergovernmental organization of stakeholders in producing and consuming countries in the olive oil and table olive sectors plays an important role in setting global standards, in particular concerning guidelines on quality and grading (IOC n.d.b). Its members comprise the leading international producers and exporters of olive oil with the EU holding 77% of voting rights. The IOC has no enforcement body. Therefore, standards still fall within the competence of the individual member countries. However, national olive oil standards are closely aligned to IOC's standards in order to be able to participate in international trade.

Table 16: Global olive oil consumption (crop year 2015/16) and imports (2015/16)

		Consumption volume (thousand tons)	Share of global consumption (%)	Import volume (thousand tons)	Share of global import (%)
1 (2)	<b>EU-28</b>	1,618.5	54.9	119*	14.5
	<i>Italy</i>	583.1	19.8	66	8.0
	<i>Spain</i>	502.5	17.1	45.8	5.6
	<i>Greece</i>	140	4.8	0	0
	<i>France</i>	102	3.5	4	0.4
2 (1)	<b>USA</b>	310	10.5	314	38.2
3 (-)	<b>Turkey</b>	124	4.2	0	0
4 (-)	<b>Morocco</b>	120	4.1	6.5	0.8
5 (-)	<b>Syria</b>	105	3.6	0	0
6 (-)	<b>Algeria</b>	81.5	2.8	0	0
7 (3)	<b>Japan</b>	53.5	1.8	53.5	6.5
8 (4)	<b>Brazil</b>	50	1.7	50	6.1
9 (5)	<b>Canada</b>	41	1.4	41	5
10 (6)	<b>China</b>	39	1.3	34	4.1
12 (-)	<b>Tunisia</b>	35	1.2	0	0
	<b>Other</b>	368	12.5	210.5	25,6
	<b>Total</b>	<b>2,945.5</b>	<b>100</b>	<b>822.5</b>	<b>100</b>

Notes: Provisional data; Sums may differ due to rounding; \*Extra-EU trade only, including inward processing traffic  
Source: IOC 2016

The production of high quality products, such as high quality extra-virgin olive oil or organic products is not a major challenge for non-EU producer countries given the long experience in production and processing and the existence of well-established milling and exporting companies. In the context of a buyer-driven value chain, the obstacle, however, is to upgrade to high value added activities such as bottling and branding in which producers and buyers in the EU – Tunisia's core end market – see their competitive advantage and have dominant market positions.

## 5.2. The olive oil sector in Tunisia

The olive oil sector plays an important role for the Tunisian economy. Olive cultivation represents around 40% of total agricultural production by area cultivated (around two million hectares) and olive oil is by far the most important agricultural export product, amounting to an average of 36% of agricultural exports by value between 2006 and 2016 (CEPEX 2017). Italy (37% of total olive oil exports in 2016 by value), Spain (18%), the US (17%), France (11%) and Canada (4%) are the main export markets of Tunisian olive oil (UN Comtrade 2017).<sup>40</sup>

Tunisia's olive oil sector has experienced significant changes since the country's independence from France. Elfkhi (2014) differentiates four periods: The first period – lasting from 1956 to 1962 – was marked by the absence of government interventions, free prices and a local market consuming almost half of the domestically produced olive oil. Contrarily, the second period (1962-1994) was characterized by state interventionism in order to promote exports and regulate power imbalances between exporters and producers. The Tunisian Olive Oil Board (*Office National de l'Huile*, ONH) – founded in 1962 – was the key governmental agency. ONH engaged in the production of olive oil, held a monopoly in olive oil exports and regulated the national prices in the sector. Its strategy included the import of seed oils and the export of olive oil in order to improve the foreign exchange balance. The third period was initiated by the abolishment of the monopoly of ONH in 1994. The partial deregulation of the Tunisian olive oil sector was accompanied by the increasing importance of private exporters, reaching a share of 75% of total exports. Export destinations (e.g. USA, Japan and France) were diversified, while demand of traditional markets (Italy and Spain) was still met. During this period, ONH fixed purchasing prices of olive oil at the beginning of the harvesting period (launching prices) and in this way still influenced prices and income for olive growers (ibid.). Further deregulation took place in the fourth period from 2002 onwards. The system of launching prices was eliminated by ONH, however, an intervention price system was reintroduced in 2012 in order to influence prices by purchasing olive oil for exports during times of low domestic prices (ibid.).

The **main segments of the olive value chain in Tunisia** include (i) input suppliers; (ii) olive producers; (iii) intermediaries; (iv) olive oil producers; (v) and exporters as well as packagers.

**Olive production** in Tunisia provides a livelihood to around 310,000 farmers (CEPEX 2017). Around 72% of farmers are smallholders with less than 10 hectares of cultivated land (Jackson et al. 2015: 7ff.). This group represents 33% of Tunisia's olive acreage and 72% of the workforce employed in the olive sector (ibid.). Roughly two-thirds of smallholders have a diversified agricultural production portfolio and thus do not only rely on producing and selling olives (GIZ 2017). Olives, however, are estimated to yield the highest share of income for smallholders compared to other crops and livestock in Tunisia.<sup>41</sup> Olive production by smallholders is extensive and only few larger farms invested in intensive production. Many olive-mills and exporters are integrated in olive production as well (see below). Only very few smallholders are organized in cooperatives<sup>42</sup> so far. Existing cooperatives are mainly engaging in providing services (e.g. provision of seeds and lending of machinery) to members.

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<sup>40</sup> Data represents import data.

<sup>41</sup> GIZ (2017) estimates that smallholders with a diversified production portfolio receive on average around half of their yearly income from selling olives.

<sup>42</sup> It is estimated that only around 4% of farmers in Tunisia are organized in cooperatives (GIZ 2017).

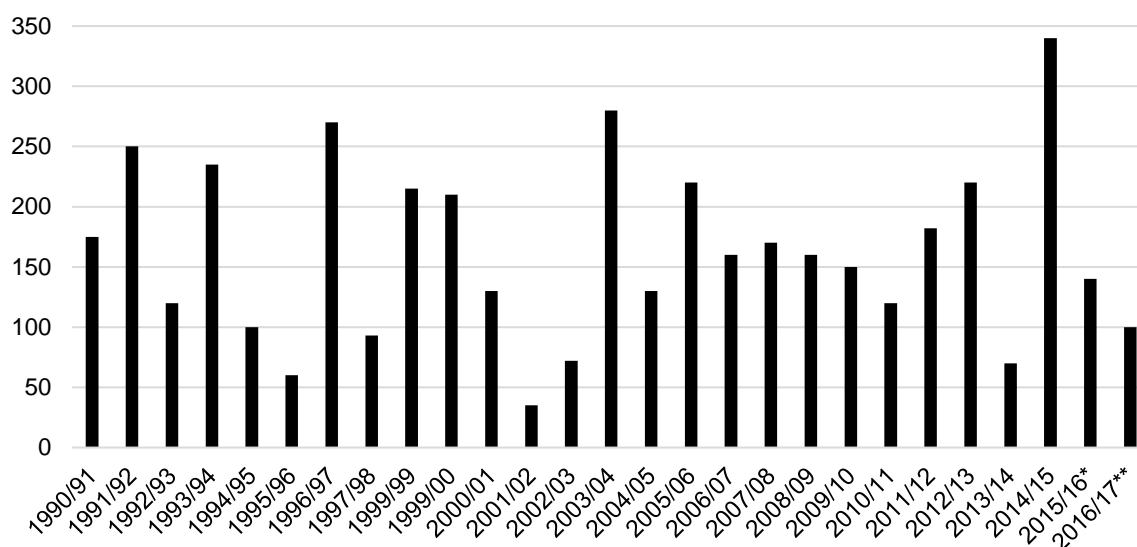
Olives are cultivated in nearly the whole country. The olive season runs from November to February. Productivity is below international standards. This accounts especially for the South and the Center of the country. The North and the Sfax region have higher yields, however, compared to Spain and Italy, but also Syria, Turkey and Jordan they remain relatively low. Nonetheless, Tunisia is competitive in terms of production costs since labor costs are low. Low yields are amongst other things caused by the low density of olive groves (often due to a lack of irrigation) and aging trees (Jackson et al. 2015). Olive output is further prone to volatility due to its dependence on climatic conditions and inherent production volatility (biennial bearing). Extreme volatility due to effects from climatic changes can be observed in recent years, in which output varied between 70,000 tons in 2013/14 and 340,000 tons in 2014/15 (IOC 2016). Tunisia also suffered from low output during the seasons 2015/16 (140,000 tons) and 2016/17 (estimated to be 100,000 tons) (ibid.).

The large majority of olives are used for olive oil production (around 80-90%) whereas table olive cultivation plays a comparatively negligible role in Tunisia. Various olive varieties for olive oil production exist in Tunisia, however, Chemlali and Chétoui (roughly 80% respectively 20%) are by far the most important cultivated olive varieties (Jackson et al. 2015). Tunisia successfully increased the output of high-value niche products such as organic olive oil due to strong state support (see below). Organic olive growing in Tunisia increased from almost nothing in the early 2000s to around 6% of the total harvesting area (around 120 thousand hectares) in 2015/16 (CEPEX 2017). Tunisia is the third largest producer of organic olive oil, after Spain and Italy (UNECA 2013b).

**Intermediaries** play an important role in buying and transporting olives to olive-mills and hence linking small-scale producers and processors. This segment of the Tunisian olive oil chain lacks organization and is highly informal. During the field research, several stakeholders identified the strong role of intermediaries in the value chain as well as their practices as risk factors for the quality of olives and olive oil especially due to prolonged delivery times after harvest. Larger and vertically integrated farms sell or transport directly to olive-mills and do not rely on intermediaries.

There are around 1,720 **olive mills** with a crushing capacity of around 44 thousand tons per day (Ayadi/Fourati/Triki 2014: 61). Around 1,100 of the mills are modern (super presses and continuous system mills) and 620 are traditional. Tunisia almost exclusively produces virgin and extra virgin olive oil. There are six extraction facilities for pomace oil and four refineries (ibid.). The operation and output of mills heavily depends on the volatile production of olives (Figure 15). The olive mill segment is highly competitive since there are little obstacles to enter the market. Sfax is the most important olive oil production area. Around one third of all mills are located in Sfax (IOC 2012: 7). Many olive mills are vertically integrated and own olive farms. Olive mills generally do not export their produce directly to global buyers, but sell their olive oil to exporters in Tunisia. The olive mills also sell olive oil in bulk to the domestic market (directly to households or distributors) as there is little demand for bottled and branded olive oil in the domestic market.

Figure 15: Production of olive oil in Tunisia (1990-2016, thousand tons)



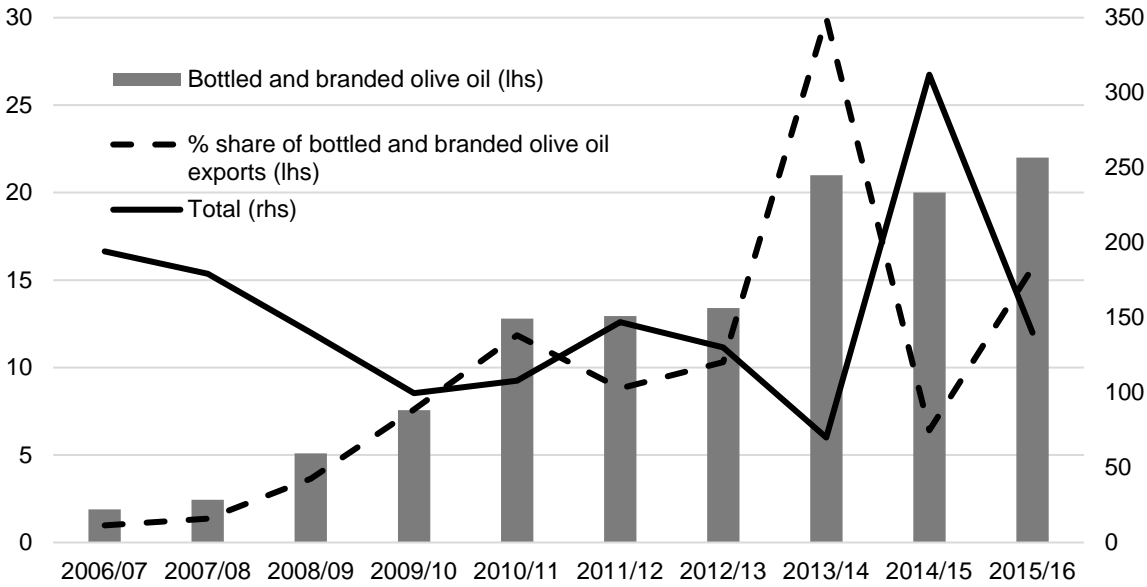
Notes: \* Provisional data, \*\* Estimate  
Source: IOC 2016

The **exporting companies** in Tunisia buy olive oil from mills and market the olive oil as bulk or bottled and branded olive oil to global buyers. There are around 80 mostly local exporting companies in Tunisia, around 50 of which engage in the exportation of bottled and branded olive oil (MIC 2016). Three companies – CHO (Tunisian), Borges (Spanish) and Sovena (Portuguese) – dominate the exportation of olive oil in Tunisia. Larger exporting companies tend to be vertically integrated along the whole chain (including olive production, olive mills and bottling facilities), but nonetheless heavily rely on buying olive oil from other mills. Bottles are produced locally by the Tunisian company Sotuver and are imported from abroad, especially from Italy (duty free), due to the need for different varieties and qualities. CHO also owns a refinery and a laboratory as well as manufacturing facilities for side products such as soap and olive cake (bricks to burn). The larger FDI companies only hold manufacturing facilities since higher value added activities and decision-making competences are located in EU headquarters. (Larger) Exporting companies are the dominant players in the Tunisian olive oil sector, since they have access to finance, exporting infrastructure and international buyers. Additionally, they are often vertically integrated along the whole chain. There are significant economies of scale in the exporting sector due to the high transporting costs for olive oil, in particular for bottled and branded olive oil.

The biggest challenges of exporting companies include the low share of value-added product exports, the diversification of export markets, the volatile supply of olive oil and the high cost of finance (in case of Tunisian companies). The large majority of Tunisian olive oil, around 90% in recent years, is exported in bulk (Figure 16). Value-added activities, such as bottling, labelling and in particular branding are only to a very limited extend conducted in Tunisia and were almost absent during the early 2000s. In recent years, however, many bulk olive oil exporters have successfully upgraded and raised their share of bottled and branded olive oil exports despite various obstacles. Since the 2013/14 period, exports of various varieties of bottled and branded olive oil have increased to more than 20 thousand tons (MIC 2016). It is estimated however that around half of the bottled exports were not 'Tunisian brands', but distributor brands (esp. companies from the EU),

limiting value addition taking place in Tunisia to bottling, excluding branding. A further challenge is that packaging costs are high which is also due to the dependence on imported bottles. In 2014/15, the most important markets for bottled and branded olive oil exports were the EU (40% of total bottled and branded olive oil exports by volume), especially France, and the US (35%) (ibid.). Tunisia currently exports bottled and branded olive oil to 50 different markets (PACKTEC 2017),

Figure 16: Exports of olive oil and bottled and branded olive oil (thousand tons)



Source: MIC 2016

**5.2.1. Industrial policy and institutions**

The national olive oil promotion strategy in 1998 was paving the way to the increased attention olive oil received in the following decade. In addition to promoting olive oil production and productivity, the strategy encompassed quality improvements, the promotion of domestic olive oil consumption, and the establishment of new international markets for Tunisian olive oil (Lybbert/Elabed 2013). In order to protect the specificity of Tunisian olive oil the country adopted a law in 1999 to implement controlled designations of origin and geographic indications (ibid.).

Various government institutions actively promote the development of the Tunisian olive oil sector. ONH is the main regulatory agency; however, its importance and mission significantly changed due to the liberalization of the sector. Today, ONH focuses on the regulation of the internal market mainly by facilitating consultation, coordination and integration amongst stakeholders concerning the promotion and control of the quality of Tunisian olive oil, the improvement of productivity as well as the development and valorization of exports (ONH 2016). ONH also buys olive oil for exports to support domestic prices in times of low prices. The Ministry of Agriculture and ONH currently rejuvenate farms in order to raise productivity and output by planting new trees (around 5 million until 2020). The strategy includes the expansion of production to areas with extended rainfall, particularly in the north of the country.

The promotion of organic production is mainly managed by the National Commission of Organic Agriculture, the Technical Center for Organic Agriculture and other agencies within the Ministry of Agriculture. Organic production has increased significantly due to extensive tax incentives as well as subsidies provided for investments into organic production and certification.

The key state agencies promoting the exportation of bottled and branded olive oil include the Center for the Promotion of Exports (CEPEX) and the Technical Center for Packaging and Conditioning (PACKTEC) (see Belgaied 2014 and Elfkhih 2014 for more details). CEPEX is an export promotion agency and provides technical assistance, financing of transport fees for exporters, support in advertising and marketing programs as well as facilitates access to an information network on export markets. PACKTEC engages particularly in the technical assistance for packaging as well as in marketing (esp. management and financing of participation at exhibitions). FOPROHOC (Fonds de promotion de l'huile d'olive conditionnée), managed by CEPEX and financed by the Ministry of Industry, is the most important fund actively promoting the olive oil sector launched in 2006. FOPROHOC is particularly aiming at the promotion of bottled and branded olive oil exports and is financed by a 0.5% exportation tax on bulk olive oil exports. In 2017, it was announced that this tax will be increased to 1% in 2018 – justified by the falling exchange rate of the dinar. FOPROHOC aims to facilitate the financing of companies' investment activities as well as international marketing efforts. Activities funded by FOPROHOC include participation in fairs and exhibitions, marketing, adapting packaging for specific market requirements, creation of quality labels, publicity campaigns and others. FAMEX and FOPRODEX are broader funds. They have existed since 2005 and promote exports and market access in various sectors. The funds are managed by CEPEX and financed by the Ministry of Industry. FAMEX is co-financed by the World Bank. A specific measure by FAMEX was to install a market development representative in growing markets like Germany, France, Japan and the US. In addition, the funds support companies that try to expand business in these markets. This is done by financing 70% (up to 10,000 Dinar) of the costs of elaborating a marketing strategy and 50% (up to 100,000 Dinars) of the costs of implementing the strategy (Lybbert/Elabed 2013).

### **5.2.2. Social and ecological sustainability issues**

Smallholders as well as workers on the farms can be identified as the main vulnerable group in the olive and olive oil sector. The large majority of short-term waged workers in the olive oil sector in Tunisia are women. The biggest challenges for olive farmers include price volatility, low productivity rates and large fluctuations in production volumes. The price volatility of olives heavily depends on the global market price of olive oil. ONH does not possess sufficient financial strength to support the price of olive oil in times of low prices and to significantly lower income volatility of smallholders. Productivity remains on a low level,<sup>43</sup> since smallholders often lack access to finance and equipment as well as capabilities to employ good agricultural practices (such as soil management as well as harvesting- and post-harvesting methods). The volatility of production volume is furthered by climatic changes and water scarcity with adverse effects on the livelihood of farmers and workers in the sector.

Olive oil production in Tunisia has adverse environmental impacts (in particular on superficial and underground waters), since the olive mill wastewater is often not treated and disposed accordingly (Gargouri et al. 2013). It is estimated that Tunisia generates

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<sup>43</sup> According to the FAO (2017), average yields in Tunisia between the years 2000 and 2014 were only 20% of productivity levels achieved in Spain.



more than 700,000 tons of olive mill waste and 450,000 tons of olive husk per year. The husk is utilized as animal feed or for energy production after residual oil extraction (ibid.). Jackson et al. (2015) point out that the recycling of wastewater as well as the use of byproducts could be enhanced. The recycling of wastewater is particularly important in the context of scarce water resources. Undoubtedly, the establishment of irrigation systems would enhance productivity – with the driest regions (esp. the South) potentially having the largest improvements. However, the scarcity of water resources would considerably penalize these activities. It is estimated that in the South 89% of water resources are already used leaving little water available for crop irrigation (Jackson et al. 2015: 35), impeding the expansion of irrigated areas. The improvement of extraction technologies to reduce water requirements and reuse wastewater is thus key in order to be able to expand irrigation systems.

### **5.2.3. Development cooperation programs and strategies**

Various development cooperation programs in Tunisia benefit the olive oil sector on different levels, including development programs from Japan, the US and the EU and its member states.

The Japan International Cooperation Agency (JICA) has pursued its Partnership for Sustainable Development Project in Tunisia since 2009 (cf. Putinja 2015). The current focus of the (research) project lies on the valorization of olive oil products, including improvements on olive oil quality and the recycling of waste from oil production. Japan aims to foster the branding of Tunisian olive oil to introduce it to Japanese markets. The project was extended until 2021 and will focus on the development of food, cosmetic and pharmaceutical products, the development of a production-to-export chain, and the promotion of exports of high value-added agricultural products, which includes the launch of a Tunisian olive oil label in Japan.

USAID has provided technical assistance to Tunisian companies producing and marketing olive oil with the aim to promote Tunisian olive oil brands since 2012 (USAID n.d.). In 2015, the Ministry of Commerce, CEPEX and PACKTEC launched the US Olive Oil Market Initiative with the support of the USAID funded 'Business Reform and Competitiveness Project'. The initiative includes information days on the promotion of olive oil in the US market as well as participation at fairs in the US (African Manager 2015).

The European Bank for Reconstruction and Development (EBRD) supports the Tunisian olive oil sector in cooperation with the FAO and the ONH. EBRD's mission is to facilitate cooperation and communication between olive growers, olive oil processors, exporters, government officials and trade union representatives to foster a more inclusive Tunisian olive oil sector. A corresponding working group was established in 2015 (EBRD 2017). The EBRD has also provided loans to the Tunisian subsidiaries of Portuguese Sovena Group (EUR 5 million in 2016) and Spanish Borges Group (EUR 15 million in 2015 and EUR 15 million in 2012) (EBRD n.d.).

GIZ has no development cooperation program specifically targeting the olive oil sector, however, the olive oil sector is included in different projects, including: the Competitive enterprises and value chains for more jobs and higher income (currently financed for the period of 2015-2021) project, which aims to enhance the economic performance of enterprises in different sectors via training in marketing and processing techniques; the Sustainable agriculture and rural development (2016-2019) project, which aims to enhance the sustainability in agricultural production and agricultural processing via cooperation platforms and the provision of various services and training; and the Sustainable business models and improved financing opportunities for the agriculture

sector (2015-2019) which, aims to improve access to finance for smallholders as well as small and medium-sized enterprises.

#### **5.2.4. Backward and forward linkages**

Imports of inputs such as fertilizers and pesticides are of minor importance for the production process. Small farmers usually use organic fertilizers from their livestock. Chemical fertilizers are rarely used since hyper-intensive farms are not wide spread (around 0.2% of Tunisia's olive-growing area) (Jackson et al. 2015: 13).

The development of bottled and branded exports is closely connected with further promoting the national bottling industry, which is currently limited to two tin can as well as one glass bottle producing companies. Glass bottles produced by Sotuver are furthermore only 'standard quality' and availability is a problem as well. Exporters of bottled and branded products thus need to import bottles, mainly from Italy. The expansion of bottled exports thus yields great potential for further developing production of the Tunisian bottling industry.

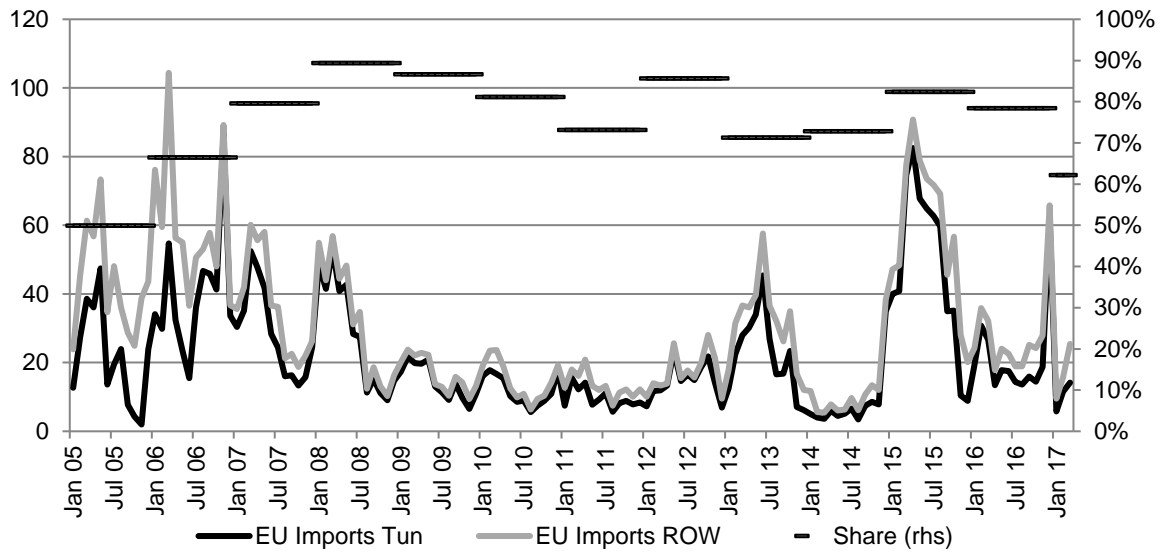
Larger exporting companies (e.g. CHO, Abou Walid Group) have increasingly diversified their production to products such as olive soap. These companies produce high quality soap for the local market as well as exports. Olive cake is a biomass fuel, a residual of olive oil production, which is sold on the local market as well as for exports.

Olive oil is also consumed in Tunisia and used by restaurants and the food industry. However, the national strategy to use olive oil for exports to get foreign exchange income whereas to consume lower-quality oils (e.g. vegetable oil, maize, rape-seed) on the local market somewhat limits the potential for linkages on the local market. In 2016, the average per capital consumption of olive oil was 3.4 kg (well below other main olive oil producing countries with consumption levels above 10 kg per capita), amounting to 37 thousand tons of olive oil consumed (CEPEX 2017).

#### **5.2.5. Impact of the DCFTA**

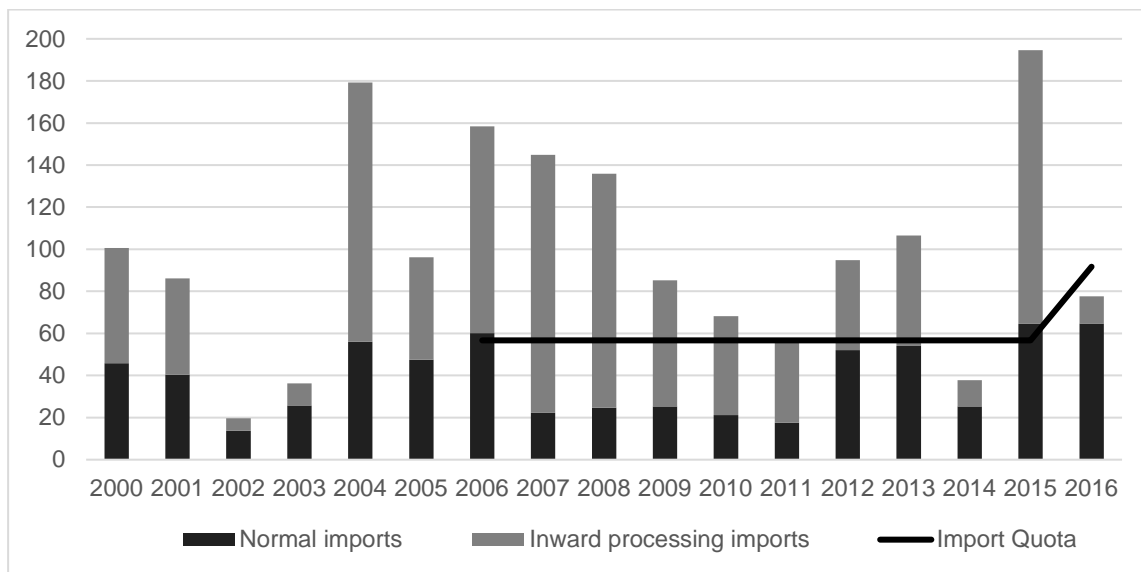
The DCFTA might have important implications for the future development of the Tunisian olive oil sector. The EU is currently by far the largest importer of Tunisian olive oil and Tunisia is the most important supplier of olive oil outside the EU. The trade relations are extremely volatile (Figure 17), since the output of olive oil in the EU as well as in Tunisia vary dramatically due to climatic changes. Tunisia nonetheless has supplied between 60% and 90% of total EU imports of olive oil by value in the last decade and total EU olive oil imports vary with imports from Tunisia (Eurostat 2017). Tunisia, on the other hand, exported between 60% and 70% of its total olive oil exports by value to the EU in most years since 2010 (UN Comtrade 2017).

Figure 17: EU imports of olive oil by value (2005-2016, million EUR (lhs))



Notes: Monthly import data; Share indicates EU imports from Tunisia relative to total extra-EU imports of olive oil as annual average  
 Source: Eurostat 2017

Figure 18: EU imports of olive oil by volume (2005-2016, thousand tons)



Notes: EU-Tunisia import volumes includes quota and out-of-quota imports as well as imports via inward-processing arrangements. Quota-volume are thus not necessary fulfilled in year in which imports exceed the quota limit. The specific application of the quota by monthly limits also limited quota volumes during years in which the yearly quota has not been fully utilized.  
 Source: Eurostat 2017

Tunisian olive oil imports to the EU are subject to a preferential tariff quota at a zero rate of duty or to inward-processing arrangements (TARIC 2017). Inward-processing arrangements allow for duty-free imports from third countries under the condition to export the equivalent oil quantity outside the EU after processing. The annual permanent duty

free tariff quota for olive oil has been 56.7 thousand tons since 2006.<sup>44</sup> In April 2016, however, the EU temporary expanded the yearly quota by 35 thousand tons until the end of 2017 in order to assist the Tunisian economy.<sup>45</sup> Most importantly, the specific application of the import quotas by monthly limits until 2016 has led to underutilization of quota volumes in all years between 2013 and 2016, even though total imports exceeded the quota volumes in two out of these four years (Figure 18; OTE 2017). Since 2016, the import quota has been applied on a yearly basis aiming to reduce the administrative burden. Flexibility for importers increased insofar as the issued import licenses are now valid from the day of their issuance until the end of the corresponding year.<sup>46</sup> In 2016, the total quota of 56.7 thousand tons was allocated in the first week of the year. Additionally, 10.4 thousand tons of the expanded quota were allocated throughout the year (EC 2016). Tunisia utilized nearly 100% of the standard quota in 2017, but did not utilize the additional quota as of mid-December 2017 (EC 2017b). Tunisia already utilized 100% of the standard quota in the first week of 2018, however, the EU did not grant an extension of the additional quota for 2018 (EC 2018).

Exports to the EU outside the quota or the inward-processing arrangements are subject to a tariff between EUR 1.226 and 1.346 per kg (TARIC 2017). The tariff quota system thus significantly limits the potential of Tunisia to export olive oil at a competitive price outside the quota to the EU. The US as the second biggest import market also taxes olive oil imports per kg, but at a very low level (USD 0.034 to 0.05). Canada and Japan – as potentially growing markets – do not apply any tariffs (WTO 2017). Main competitors, such as Morocco, have DFQF access to the EU market for olive oil. Minor competitors such as Turkey, Syria, Argentina or Australia do not have DFQF access to the EU market.

Inward processing arrangements and the quota furthermore impede the promotion of bottled and branded olive oil exports to the EU. While inward processing arrangements per se do not allow other imports than bulk, the difficulty regarding the quota is to find EU importers with access to the quota<sup>47</sup> and a business strategy that involves the importation of bottled and branded olive oil from Tunisia. EU importers with access to the quota generally prefer to import Tunisian olive oil in bulk in order to add value by bottling and branding. CHO, for example, decided to build up a European subsidiary in order to get access to the quota and import bottled and branded olive oil from their mother company in Tunisia, significantly prolonging the time and increasing the cost of market entry to the EU for higher value added products.<sup>48</sup> Another issue is that the quota impedes the signing of long-term contracts between Tunisian exporters and European buyers (esp. retailers), since it is unclear if the Tunisian products will fall under the quota in the future (the quota might be fully utilized at the time of agreed delivery). The recent revision of the quota from a monthly to an annual issue of licenses slightly limited this insecurity in planning. DFQF access to the EU market via the DCFTA would nonetheless likely increase the exports of Tunisian olive oil to the EU in general and the exports of bottled and branded olive oil in particular.

Various other obstacles also hamper the increase of bottled and branded olive oil exports to the EU as we have already pointed out above. The existence of well-established companies and brands from the EU limit the room for new market entries from Tunisia.

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<sup>44</sup> Regulation (EC) 1918/2006

<sup>45</sup> Regulation (EC) 2016/605

<sup>46</sup> Regulation (EC) 2015/2031; before – according to Regulation (EC) 1345/2005 – import licenses were valid 60 days; a security of EUR 20 per 100 kg has to be deposited.

<sup>47</sup> A company needs to have imported olive oil from Tunisia within the two preceding years in order to get access to the quota. The quantity as well as the number of imports is not taken into consideration.

<sup>48</sup> In the case of CHO the market entry to the EU for bottled and branded olive oil was prolonged to five years: the decision to enter the EU market via subsidiaries was made in 2008, the process started in 2010 and the first bottles were sold in 2013.

The biggest difficulty, however, lies in the lack of consumer awareness concerning Tunisian olive oil, in part due to the practice of European importers to mix Tunisian olive oil with other olive oils without being obliged to declare its Tunisian origin (EU Regulation No 29/2012, Article 4(2b)). Regarding the DCFTA negotiations, Tunisia should thus not only try to abolish the tariff rate quota, but also push for changes in labelling provisions that require the declaration of olive oil originating in Tunisia also on blended olive oils. The DCFTA can also be utilized to protect existing geographical indications as well as geographical indications that are planned to be developed and marketed in the near future.<sup>49</sup>

The biggest challenge in negotiating the DCFTA with regard to olive oil is the political resistance in the EU. Olive oil producers in the EU, especially from Italy and Spain, are actively lobbying against the improvement of EU regulations in favor of Tunisian exporters (Selby 2015; Granitto 2016). The campaign against Tunisian olive oil has been mostly visible in an Italian media campaign in early 2016, in which the Tunisian olive oil quality was called into question (Ngonga-Gicquel 2016).

### 5.3. SWOT analysis

The SWOT analysis draws on the field research and interviews conducted in May, June and December 2017 as well as the insights and SWOT analysis of Jackson et al. (2015).

#### 5.3.1. Strengths

- The **production of olives has a long tradition** in Tunisia and various olive varieties exist in order to produce high quality olive oils. The olive tree is well adapted to the Tunisian climate and is comparatively elastic in terms of water supply necessary to produce olives (olive trees have a low threshold to start producing and yields can be significantly increased with increasing water supply). The production of olives is price-competitive due to comparatively low – albeit recently increasing – labor costs.
- Tunisia produces and has the potential to increase the production of **high-quality olive oil** (extra-virgin) suitable for the **exportation to traditional as well as non-traditional consumer markets**. According to Jackson et al. (2015), Tunisia has a cost advantage vis-à-vis other exporting countries in distributing olive oil in the EU. Tunisian olive oil exporters are furthermore successfully continuing to expand to new markets all over the world (e.g. in SSA and Asia).
- The **organic olive oil production has increased** significantly since the early 2000s due to government promotion programs, including subsidies. In 2015/16, around 120 thousand hectares (around 6% of the total area under cultivation) were organically certified (CEPEX 2017).
- Many private Tunisian **exporting companies have successful functionally upgraded to bottling and branding** as well as increased exports of bottled and branded products in particular to non-traditional markets. The bottled and branded products are internationally competitive.
- **Exporting firms** have increasingly **vertically integrated** into milling and the production of olives with positive effects on productivity and quality. Vertical integration nonetheless remains on a low level.

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<sup>49</sup> Tunisia has developed geographic indications for olive oil (e.g. olive oil of Monastir). The Tunisian regulatory system of geographic indication allows for the negotiation of geographical indications within the DCFTA.

- **Exporting companies** have **access to finance** and are strongly supported by government institutions.
- The **institutional setup to promote the exportation of bottled and branded products** is well developed. Olive oil exporters have significantly benefited from governmental efforts to support functional upgrading into bottling and branding as well as assistance in gaining market access and increasing the market share in non-traditional markets.
- Tunisia has a **well-established quality control system** managed by ONH.
- There are **linkages of the olive oil sector to the domestic market**. Olive oil is consumed in the domestic market (in particular bulk ware), however, there has been a drop in domestic consumption. Key inputs are furthermore to some extent locally produced (e.g. seeds, bottles).

### 5.3.2. Weaknesses

- **Olive production** is particularly **challenged by low productivity rates and high volatility in output**. The productivity in olive production is comparatively low due to a lack in application of good agricultural practices, old olive trees with decreasing yields, smallholders with extensive production and limited investment in irrigation systems. Output is highly volatile due to climatic changes in the context of limited availability of irrigation systems.
- The **organization of farmers (cooperatives) is not well developed** and limits the access of farmers to finance and other services as well as their bargaining power in the value chain.
- In general, the **milling sector is well-developed**, however, there are some shortcomings, most importantly there is room for improvements in certification and in the application of technical and hygienic standards (esp. ISO 22000) as well as in the recycling of wastewater. Access to finance is a major problem since the deregulation of the sector and the disappearance of ONH as a reliable buyer and indirect provider of liquidity.
- The **quality of the Tunisian olive oil is hampered** due to a lack in technical standards along the value chain, in particular related to poor harvesting methods, lack of transportation standards in terms of transporting time after harvest and the handling of olives, and hygiene of mills. The field research has revealed that stakeholders differ considerably in their views on the pertinence of this problem. The different assessments of stakeholders might be explained by large regional differences. Many exporting companies producing bottled and branded products increased their control over the value chain in order to tackle this issue (vertical integration and/or tighter control over olives after harvesting).
- **Exporting companies in Tunisia exert strong control over the value chain** and are able to take in the largest share of the margin, reducing the income of olive producers and millers. Jackson et al. (2015) furthermore point out that intermediaries in olive trade seem to have significant margins due to a lack of transparency.
- In contrast to larger exporting companies, many **small exporting companies** are in a weaker position and particularly **lack the financial means and/or the market intelligence to successfully penetrate (new) markets**. In addition, state institutions lack programs and capabilities to tackle these key issues.



- The **cooperation among exporting companies** in the quest of raising awareness of consumers for Tunisian olive oil as well as share information regarding the exportation to new markets is also limited.
- Tunisia continues to **export olive oil mainly as bulk to traditional consumer markets**. In the last decade, however, there were strong increases in the exportation of bottled and branded exports in particular to non-traditional consumer markets. Tunisian exporters particularly face difficulties to increase exports of bottled and branded products to the EU. The **well-established branding and bottling operations of buyers** in the EU and the **lack of consumer awareness about Tunisian olive oil** in key consumer markets are the main issues in the promotion of Tunisian brands. Furthermore, olive oil manufacturers in the EU (EU Regulation No. 29/2012) are not obliged to label the origin of Tunisian olive oil used in their products in case of blends, hampering the development of consumer awareness on Tunisian olive oil.
- The **quota on Tunisian olive oil exported to the EU** is a competitive disadvantage relative to European companies as well as other key competitors with DFQF access to the EU (esp. Morocco). The quota does not only limit olive oil exported to the EU, but also makes exports of bottled and branded products more difficult since it is more difficult for Tunisian exporters to sign long-term contracts with retailers without having secured access to the quota.
- Stakeholders in the sector estimate that around **half of the bottled olive oil exports** from Tunisia are **branded by distributors** (esp. from the EU) and not by Tunisian brands, limiting the value addition taking place in Tunisia.
- There is a **lack of coordination** between the public and private stakeholders of the olive oil value chain in Tunisia in general and among the state organization involved in particular.
- The **institutional framework and policies** promoting the olive oil sector heavily focuses on the promotion of bottled and branded olive oil, but somewhat **neglects the challenges in the production of olives** (Jackson et al. 2015). This is exemplified by a weakened role of ONH as the main sector institution. For example, ONH is involved in the stabilization of prices by purchasing olive oil in times of low prices but with only limited impact since their financial capacities are limited.
- There are **only one glass bottle and two tin can producing** companies in Tunisia. The quality, variety and availability is a major problem of locally produced bottles or cans. Exporters of bottled and branded olive oil thus need to import bottles (mainly from Italy) in case they want to distinguish themselves from the competition.
- The **competitive pressure is rising** due to expanding production in other non-EU olive oil producer countries.

### 5.3.3. Opportunities and threats

- **Improving the productivity in olive production** is a major opportunity in Tunisia, in particular by targeting the challenges of smallholders (old trees, lack of finance, etc.) and promoting farmer based organizations (cooperatives) as well as furthering intensive farming and the vertical integration of millers and exporting companies.
- The **volatility in the production** of olives and olive oil **can be reduced** via the expansion of irrigation systems as well as the promotion of production in the rainier

North. Investments in irrigation systems must be combined with feasibility studies taking into account regional water scarcity and opportunities for recycling.

- **Income volatility can be mitigated** via functional and product upgrading, since price volatility of higher value added products is lower relative to low value added products.
- **Product upgrading** can be achieved by enhancing the **quality** (e.g. technical standards along the value chain) and increasing the share of extra virgin oil in total output as well as by expanding the **certification** of organic olive oil in order to raise income of smallholders.
- The **reuse of byproducts along the olive oil value chain can be enhanced**, including the **recycling of wastewater** in the processing of olives (Jackson et al. 2015).
- The share of **bottled and branded olive oil products** can be increased by **promoting consumer awareness** on Tunisian olive oil and Tunisian brands, extending the **support for exporting companies**, improving the **cooperation between exporting companies**, continuing the **diversification of export markets** as well as the **promotion of niche products** (bottled and branded organic olive oil) to traditional markets. However, it is questionable in how far the currently applied measures in the **promotion of 'Tunisian olive oil'** are sufficient in order to extend functional upgrading. Especially European competitors will seek to protect their markets.
- Exporters should try to **reduce the importance of distributor brands** and **promote Tunisian brands** in the exportation of bottled olive oil. The strong competition and branding strategy of European distributors makes such an endeavor however difficult, in particular since the consumer awareness for Tunisian olive oil is limited.
- Tunisia should continue the expansion of **exports to non-traditional markets**. However, market coverage should be expanded. Increasing competition of non-EU producers might hamper this strategy in the future.
- The **Tunisian bottling industry** (glass bottles and tin cans) **could be further developed** in order to reduce imports from abroad (esp. Italy) as well as extend local value added and the variety, quality and availability of locally produced bottles and cans.
- The **local Tunisian market** could be **further developed**, although this would undermine the current strategy to generate foreign exchange income by exporting olive oil and consuming lower quality oils locally. Furthermore, local consumers tend to buy olive oil in bulk from millers or intermediaries and are not used to buy bottled and branded olive oil, limiting the opportunities for higher value products.
- The **DCFTA could yield great benefits** for the Tunisian olive oil sector in case the DCFTA includes (i) DFQF access for Tunisian olive oil, (ii) a change in labelling requirements for olive oil manufacturers in the EU, forcing them to declare the origin of the olive oil used in more detail, as well as (iii) the protection of geographical indications. Still it will be hard to compete with lead firms in the EU and on a market, where especially Italian and Greek (high-quality) products are well established and valued by consumers.

## 5.4. Sector development strategies and policy recommendations

### Promote olive production in terms of increased productivity and reduced volatility

The promotion of olive production needs more attention and resources in order to improve the general performance of the olive oil sector. Low productivity levels as well as the high volatility in production limit the quantity of exported olive oil and the income of the most vulnerable group in the Tunisian olive oil sector: smallholders. Productivity of olive production is comparatively low due to ageing olive trees, a low planting density, limited application of good agricultural practices and maintenance of farms, a low level of mechanization, weak infrastructure and lack of irrigation systems as well as access to water (Jackson et al. 2015). While the ongoing vertical integration of exporters and millers is likely to benefit productivity levels in the future, policy makers should particularly focus on the challenges of smallholders in order to promote productivity and reduce volatility in production with particularly positive impacts on smallholders' income. The promotion of olive production in Tunisia is particularly beneficial since olive trees are well adapted to the Tunisian climate and are comparatively elastic in terms of output in case of climatic changes.

The key challenges of smallholders must be tackled in order to **increase productivity levels** in olive production. Extension services (access to finance, education, equipment, inputs, etc.) provided to smallholders and cooperatives should be increased. Cooperatives also need to be supported in order to make the provision of services to smallholders more efficient. The expansion of contract farming – which is so far not widespread in the Tunisian olive oil sector – between buyers (esp. millers or exporters) and cooperatives can also be a useful instrument in this regard.

The current government strategy to plant around 5 million trees between 2015 and 2020 is likely to yield a positive effect on output and productivity since the aging of trees is an important issue in Tunisia. The strategy nevertheless needs to be supported by more efforts to promote good agricultural practices and investments (in particular in irrigation systems) as well as access to finance and equipment (e.g. for harvesting). Investments in irrigation systems must be combined with feasibility studies taking account for regional water scarcity and opportunities for recycling (Jackson et al. 2015). The **volatility in the production** of olives and olive oil can also be reduced via the expansion of irrigation systems.

**Horizontal integration** could also be an opportunity to promote productivity in the Tunisian olive oil sector. Such endeavors should be accompanied by creating attractive alternatives for smallholders exiting agricultural production. **Vertical integration** of millers and exporters into farming is increasing and positive impacts on productivity levels can be expected.

### Continue strategies for product upgrading

The main opportunities for product upgrading include the general quality (the share of extra virgin olive oil), organic olive oil as well as the development of geographic indication. The quality of Tunisian olive oil is high since the share of extra-virgin olive oil in total output is estimated to be around 70% to 80% (ONH 2017). Nonetheless, there is still room for improvement. The increase of organic olive production from almost zero in the early 2000s to around 120 thousand hectares in 2015/16 in light of governmental support has been a success (CEPEX 2017), but certification of smallholders could nonetheless be extended. Geographic indication for Tunisian olive oil needs to be further developed in the context of a national branding strategy (see below). Geographic indication, high quality as well as

organically certified olive oil does not only add value, but its availability is also important in order to promote bottled and branded exports to traditional consumer markets, especially the EU.

The introduction of technical standards in the upstream segments of the value chain (olive production, transportation and mills) is key in order to **raise the average quality of Tunisian olive oil** to a higher level. In the production of olives, post-harvesting methods must be improved via extension services; in the transportation of olives, obligatory standards should be set in order to reduce the waiting time and reduce the damaging of the produce; in the milling sector, hygiene standards must be enhanced and enforced.

The further expansion of **organic production** is also an opportunity to increase the value added in the Tunisian olive oil value chain. The incentives of the government to support organic production have been proven to be successful. The expansion of certification must nonetheless be accompanied with measures to enhance the impact of certification on the income of smallholders (e.g. improve market information and reduce the role of intermediaries).

### **Intensify functional upgrading to bottled and branded exports**

Exports of bottled and branded olive oil products has increased in the last decade; however, Tunisia continues to export most of its exports in bulk (93% in terms of volume in 2016) (CEPEX 2017). It is furthermore estimated that around half of the bottled exports are branded by distributors and not by 'Tunisian brands', limiting the value added by Tunisian companies. Further increasing the share of bottled and branded exports (in particular of Tunisian brands) is key in order to expand the value added in the Tunisian olive oil sector as well as mitigate income volatility (as high value olive oil products have a lower price volatility). Increasing the share of bottled and branded exports is also closely connected with the continuing diversification of export markets since competition in traditional and key non-traditional consumer markets is high. The exportation of organic bottled and branded oil is particularly important to penetrate traditional consumer markets in the EU and key non-traditional markets like the US and Canada.

The share of bottled and branded olive oil products can be increased by promoting diversification of export markets as well as consumer awareness on Tunisian olive oil and Tunisian brands, extending the support for exporting companies and improving the cooperation between exporting companies.

The consumer awareness on Tunisian olive oil and Tunisian brands in traditional and non-traditional markets could be furthered via targeted and extensive marketing instruments. The government as well as exporting companies could develop a national branding strategy for Tunisian olive oil on a larger scale, strategically focusing on markets with significant export potential and manageable competition (e.g. USA, Canada, Japan, Malaysia). The promotion of bottled and branded olive oil products should also be accompanied with the further development of geographical indications, adding more value to Tunisian brands.

Exporting companies have well-developed capabilities and capacities in producing a competitive and marketable bottled and branded product, however, the main challenge continues to be the lack of capabilities and finance of many smaller exporting companies to penetrate (new) markets. The exporting companies are supported by the government as Tunisia has a well-developed institutional setup involved in the promotion of bottled and branded olive oil (esp. Ministry of Industry, PACKTEC, CEPEX). However, support for exporting companies should be extended by the provision of country specific market

intelligence as well as financial support for market penetration fees (e.g. subsidies for listing fees). The main challenge in this regard is the lacking availability of labor capable to provide the necessary market intelligence (e.g. with respect to the procedure to become listed at large retailers in a specific country). Exporting companies could also be incentivized to share market intelligence with other Tunisian companies. Development cooperation could assist Tunisian exporters in providing market intelligence as well as organize B2B meetings.

### **Promote the diversification of export markets and increase market share in non-traditional markets**

Market diversification is a key focus area of the Tunisian government and industry at the moment with organization such as CEPEX and PACKTEC focusing on new markets within the EU and markets outside the EU. The EU (esp. Spain, Italy, France and Portugal) continues to be the most important export market for Tunisian olive oil even despite the increasing diversification of export markets. The further diversification of export markets and the expansion of market share particularly in non-traditional export markets continues to be important to increase the share of bottled and branded olive oil exports (see above), but also to diversify end markets for bulk exports.

### **Develop linkages of the olive oil sector**

The development of linkages is key in order to improve the positive impacts of the olive oil sector on the local economy. The main opportunities lie in the enhanced use of byproducts (e.g. reuse of wastewater of millers, usage of olive cake, production of lampante oil, etc.) as well as the development of a national bottling industry.

The development of bottled and branded exports is closely connected with further promoting the national bottling industry, which is currently limited to two tin can as well as one glass bottle producing companies. Glass bottles produced by Sotuver are furthermore only 'standard quality' and availability is a problem as well. Exporters of bottled and branded products thus need to import bottles, mainly from Italy. The expansion of bottled exports thus yields great potential for further developing the production of the Tunisian bottling industry. Investment into this sector could be supported through a subsidized investment capital facility for Tunisian investors or strategic FDI attraction.

### **Use the potential of the DCFTA**

Tunisian stakeholders in the olive oil sector need to be better involved in the negotiation process in order to be able to voice their concerns. In case negotiations of the DCFTA move forward, the Tunisian olive oil sector must push for (i) DFQF access for Tunisian olive oil, (ii) the protection of geographic indications as well as (iii) a change in the labelling requirements for olive oil manufacturers in the EU, forcing them to name the origin of the olive oil used in more detail. At the moment, the EU regulation No 29/2012 allows European olive oil manufacturers to label bottles containing Tunisian olive oil to be 'not of European origin' (Article 4(2)) without being obliged to specifically name Tunisia as the origin, limiting European consumer awareness on Tunisian olive oil.

### **Promote social upgrading and environmental sustainability**

Smallholders as well as workers on the farms can be identified as the main vulnerable group in the olive and olive oil sector. The large majority of short-term wageworkers in the olive oil sector in Tunisia are women. The biggest challenges for olive farmers include price volatility, low productivity rates and large fluctuations in production volumes as well



as often problematic working conditions on the fields. The further development of FBOs, targeted training to promote good agricultural practices, contract farming as well as improved access to finance and irrigation systems are key in order to improve the livelihood of farmers and workers in the Tunisian olive oil sector.

With respect to certification schemes in the olive oil sector, it is our assessment that these represent an opportunity for advancing environmental sustainability of Tunisian olive oil production, given the market opportunities for organic olive oil. With respect to social upgrading, the potential of certification however appears limited, given the very small market for fair-traded olive oil.

Olive oil production in Tunisia has adverse environmental impacts since the olive mill wastewater is often not treated and disposed accordingly. The recycling of wastewater as well as the use of byproducts could be enhanced. The recycling of wastewater is particularly important in the context of scarce water resources. The expansion of irrigation systems has been identified as a key instrument to tackle low productivity as well as high volatility rates in olive production, although the scarcity of water resources would considerably hamper these activities. The improvement of extraction technologies to reduce water requirements and reuse wastewater is thus key in order to be able to expand irrigation systems (Jackson et al 2015).

### **Use development cooperation in strategic policy areas**

Development Cooperation (DC) needs to above all support defined elements of the partner countries' industrial development policies. This in turn will also improve control over, and ownership of, donor projects by government partners so that activities initiated by development partners are better sustained and the knowledge generated is not lost.

Development cooperation has played an important role in supporting the Tunisian olive oil sector. Its role should be continued focusing on areas where we believe such assistance will be most useful:

- Support the government in developing a visionary strategy for the olive oil sector
- Support the coordination among stakeholders in the olive oil sector
- Finance market research and provide market intelligence to support export diversification and market share expansion particularly in non-traditional markets for bottled and branded exports
- Support government agencies to develop the necessary capabilities to enhance the promotion of bottled and branded olive oil exports to non-traditional markets.
- Finance targeted training to promote good agricultural practices in areas with less capabilities in olive growing
- Providing refinancing mechanisms for bank lending to agriculture production and processing activities, especially with regard to investment loans for local firms
- Support the expansion of irrigation systems (including feasibility studies)
- Support the government in reducing the environmental impact of olive oil production, including the reuse of wastewater
- Support the establishment of FBOs and link FBOs with other stakeholders in the olive oil value chain (clusters)



## 5.5. Conclusions

Tunisia has a long history in olive oil production and well-established capacities and capabilities in almost all segments of the value chain. Room for improvement nonetheless exists, in particular with regard to low productivity and high volatility levels in olive production, the weak organization and coordination among stakeholders, the limited access to finance as well as further product and functional upgrading to higher value added exports and end market diversification. The key challenge for the Tunisian olive oil sector is its subordinated integration in the olive oil GVC, highlighting challenges of and opportunities for upgrading in the context of a bi-polar and increasingly buyer-driven value chain in which lead firms in the EU focus on high value added activities such as bottling and branding and thus tend to buy and import olive oil in bulk. The potential for product and functional upgrading in Tunisia has improved with increasing demand in non-traditional markets as well as for high-quality niche products. In this context, many Tunisian exporters of bulk olive oil successfully increased their share of bottled and branded exports to non-traditional markets and the EU. The EU nonetheless remains the most important market for Tunisian olive oil and exports of bottled and branded olive oil to the EU are hampered due to international competition and restricted market access.

This study has developed policy recommendations based on the opportunities and challenges of the Tunisian olive oil sector. The **key policy recommendations** developed in this study can be summarized as follows:

- **Promote productivity in olive production** via improvements in the organization of smallholders as well as extension services and contract farming. The **volatility** in the production of olives could be reduced via the expansion of investments in irrigation systems. Investments in irrigation systems must be combined with feasibility studies taking into account regional water scarcity and opportunities for recycling.
- The **promotion of product upgrading**, in particular the production of organic olive oil, has been successful in Tunisia. Improvements in the quality of olive oil can nonetheless be achieved by enhancing the coordination between stakeholders.
- The **promotion of bottled and branded exports** is key in order to further add value in olive oil production in Tunisia. Increasing the share of bottled and branded exports would require further export diversification and/or improved market access to the EU (expanded quotas or DFQF access negotiated in the DCFTA) as well as coordinated marketing strategies to deepen market penetration particularly in non-traditional markets with less competition.
- The **development of linkages**, in particular the promotion of a national bottling industry, is important to further add value in the Tunisian economy.
- In case **negotiations of the DCFTA** move forward, the Tunisian olive oil sector must push for (i) DFQF access for Tunisian olive oil, (ii) the protection of geographic indications as well as (iii) a change in the labelling requirements for olive oil manufacturers in the EU, forcing them to name the origin of the olive oil used in more detail
- **Promote social upgrading and environmental sustainability**, particularly with regard to the main challenges of smallholders and workers as well as the adverse environmental impact of olive growing.
- **Use development cooperation in strategic policy areas** such as targeted training, market research and the promotion of FBOs

## 6. COMPARATIVE CONCLUSIONS

Trade agreements between advanced and developing countries like those negotiated by the European Union and the ACP countries as well as Tunisia pose both opportunities and threats to the partner countries involved. In this respect, both the extent and the timing of the structural change promoted by trade liberalization matter to DCs. For DCs it should be typically assumed that their imports react more quickly to changes in their trade regime than their exports. This has basically to do with the different capacities and capabilities of foreign and domestic export industries to exploit changes in market conditions. Development-friendly implementation of trade liberalization must thus avoid premature opening of sensitive sectors of DCs' economies in the short run, whereas it should proactively promote the use of the export potential that FTAs offer in the middle- and long run. Given the narrow export specialization of most DCs in commodities and agricultural products with low levels of value addition, export promotion should focus on increasing international sales of new and processed products and services in order both to upgrade and diversify exports and production structures.

This calls for aid-for-trade by international donors in the form of support for active industrial policies not only, but also on a sector level. Based on Justin Lin's approach to industrial policy (see e.g. Lin 2012; Stiglitz/Lin 2013), we argue in this report that strategies for upgrading and export diversification in DCs should be focused on those sectors, where a country already enjoys a comparative advantage, which however has not been exploited to its full potential. Particularly in agricultural-based sectors, based on these activities forward linkages into processing and hence functional upgrading as well as backward linkages to input supplies should be furthered, thus moving from static comparative advantage to dynamic competitive advantage. Functional upgrading to higher value added activities as well as backward linkages are also important in labor-intensive manufacturing industries. Based on the countries which already served as case studies for assessing the impacts of the EPAs as well as of selected bilateral trade agreements of the European Union in the two previous studies of this project, we have in this report analyzed four export sectors in three countries, namely (i) the cocoa and mango sectors in Côte d'Ivoire and Ghana, and (ii) the olive oil and the textile and apparel sectors in Tunisia.

Our case study analyses highlight the peculiar development and upgrading challenges of each scrutinized sector and accordingly give specific policy recommendations for each. Given strong differences in the level of economic development, the institutional setting and social and ecological conditions between the three countries, tailor-made approaches to industrial policy in each sector are necessary (see country and sector specific policy recommendations and conclusions in this report). However, a number of common themes and problems recurring in one way or another in most of the case studies, can be identified. These include in particular:

- a) Lack of access to finance, both in terms of funding normal business operations (e.g. limited working capital in the case of cocoa, mango or T&A as well as for olive oil with regard to smaller firms) as well as lack of funds for longer-term investment (e.g. for establishing a domestic textile industry in Tunisia, or promoting chocolate production for regional markets in Africa).

- b) Mismatch between industrial policy targets and weak implementation capacities: though government support programs in various forms exist for most sectors analyzed, a systemic and long-term approach to sector industrial planning defining the longer-term objectives with respect to in particular structural transformation is often lacking. Thus, success tends to be defined primarily as consisting in short- to medium term production and export targets, but does not systematically deal with functional upgrading, building up linkages with the domestic economy and establishing a national system of innovation that would nurture innovation and learning in the longer run. Implementation of policies often suffers from weak institutional capacities and lack of coordination between government agencies and between government agencies and the private sector.
- c) Establishing linkages (backward/forward) between the export industries and other domestic industries is curtailed by (i) high investment costs for lack of existing capacities (e.g. developing a packaging industry for processed mangoes in Ghana and Côte d'Ivoire or a bottling industry for bottled and branded olive oil in Tunisia), (ii) lack of sourcing interest from companies in the value chain (e.g. the T&A industry in Tunisia with respect to building up a domestic textile industry), or (iii) in the case of forward linkages, the (perceived) lack of domestic demand given traditional dietary preferences with respect to e.g. developing a chocolate industry and mango processing industry in Ghana or developing bottled and branded olive oil products in Tunisia for domestic consumption. Regional markets however provide opportunities for forward linkages and functional upgrading particularly for agriculture-based value chains such as cocoa (to chocolate products) and mango (to mango juice).
- d) Export specialization in buyer-driven value chains supports some forms of upgrading but can impede in particular functional upgrading into high value added activities for African producers and exporters. This is particularly the case in areas which lead firms or global buyers see as their core competencies and have their own capacities or where domestic EU producers have dominant market positions, effectively blocking market access for e.g. bottled Tunisian olive oil in the EU retail sector or manufactured chocolate products in the case of the cocoa sectors in Ghana and Côte d'Ivoire. Hence, functional upgrading to these activities is highly contested.

In order to remedy these problem areas, sector-specific approaches and policy interventions are of course necessary, which we have already highlighted in the concluding section of each case study analysis. We do think however, that also horizontal policies supported by EU development cooperation policies can play a useful role in this regard. These include:

- (1) In the context of trade negotiations between the EU and DCs, do not only support increasing market access for DC exporters to the EU market by promoting tariff and quota reductions, or during the implementation phase by helping DCs exporters to comply with EU SPS standards or certification mechanisms under traditional aid-for-trade schemes, but engage with the government and key private sector stakeholders in developing a long-term vision for the development of key export sectors.
- (2) Support the building-up of capacities and capabilities for strategic market research and industrial planning for key export sectors and related institutions in partner countries. Given highly dynamic and complex international market environments, the exploitation of opportunities for economic upgrading, the expansion into new products and markets etc. demand constant monitoring and analysis, which then needs to be

discussed with all stakeholders and fed into the industrial planning and sector development as well as company development strategies.

- (3) Support a strategy for market diversification that in addition to the EU market, actively pursues possibilities for exports to (i) regional markets, (ii) other OECD and emerging markets, as well as production for (iii) the domestic market, where possible. This will be particularly supportive both for (a) strategies to increase production and exports in seasonal produce like mangoes, (b) for developing and testing product upgrading strategies in markets that are culturally closer and potentially less demanding than EU markets, and (c) for pursuing functional upgrading to processing, design and branding and potentially also retailing, as such upgrading is generally less contested in domestic and regional markets.
- (4) Support domestic entrepreneurship and the build-up of domestically embedded enterprises in export-oriented sectors. While industrial development requires foreign technology and skill transfers, foreign investors have typically not been leaders in industrial development in DCs also given their often footloose nature and limited level of local embeddedness and linkages (Amsden 2009). Industrial development needs to be embedded in the national economy by a class of domestic entrepreneurs that for lack of alternatives are willing to take the high risks of local investment and in cooperation with government authorities are able to sustain and drive a process of industrial development, which profits from an intimate knowledge of local market conditions, flexibility in decision-making and a dedication to invest in research & development. Though specific support measures for domestic enterprises will depend on local contexts, they will usually combine a mixture of (i) supporting the establishment of high quality education and vocational training institutions, (ii) support research and development by promoting cooperation between companies and research institutes and universities, and (iii) providing financing facilities for longer-term and high risk productive investments. Links to foreign firms to get access to knowledge and technology will be important, which should also be incentivized in the form of linkages through input provision or subcontracting, locals having technical or management positions at foreign firms, or joint ventures.
- (5) Support social and environmental sustainability of export-oriented industries: this involves policies at two levels: (i) continued support through certification and standardization processes demanded by importers and retailers, particularly in the EU, which at least partially require compliance with certain social and environmental standards (e.g. fair trade standards, organic product certifications). More importantly, however, are (ii) measures that promote compliance with minimum social and environmental standards in export-oriented production processes on the ground. This involves the diffusion and training of farmers and producers in good management practices (e.g. for the use of agro-chemicals) in the environmental domain. With respect to the social domain, apart from demanding implementation of ILO Core Labor Standards from trade partners by way of trade agreements, and support for vulnerable groups through targeted measures, e.g. food security programs for rural workers, development cooperation should promote a culture of good industrial relations, the establishment of dialogue formats between employers and workers and support training facilities for trade unionists.

In sum, though we agree that promoting exports is important for exploiting the longer-term potentials that trade agreements with major advanced countries and in particular the EU offer for DCs, and that such export-orientation needs to be essentially based on upgrading strategies on the basis of existing comparative advantage, we strongly argue that such a process of export promotion will only be sustainable in all three dimensions of sustainability, i.e. economic, social and environmental, if it is grounded in a longer-term industrial development trajectory promoting structural transformation by way of sector-specific upgrading and diversification strategies. Doubtlessly, given severe capacity and capability constraints in most DCs including the three countries analyzed in this report, this presents a formidable challenge. While successful late economic development is above all an endogenous process, which cannot and should not be imposed from the outside, the EU can support such a process by combining a nuanced approach to trade liberalization commensurate with prevailing economic strengths and weaknesses of partner countries, with a more pro-active approach to development cooperation that focusses on support for longer-term structural change and industrial development.

## REFERENCES

- ACET (2014): The Cocoa Agri-Processing Opportunity in Africa. A Dalberg study commissioned by ACET as background for the 2014 African Transformation Report, <http://acetforafrica.org/publication/the-cocoa-agroprocessing-opportunity-in-africa/> (01.12.2017)
- AfDB (2017): High hopes for cocoa farmers in Africa, as AfDB plans big for producing countries, <https://www.afdb.org/en/news-and-events/high-hopes-for-cocoa-farmers-in-africa-as-afdb-plans-big-for-producing-countries-17247/>, (01.12.2017)
- African Manager (2015): Tunisia: launch of US Olive Oil Market initiative. [https://africanmanager.com/site\\_eng/tunisia-launch-of-%C2%91%C2%92us-olive-oil-market%C2%94-initiative/?v=947d7d61cd9a](https://africanmanager.com/site_eng/tunisia-launch-of-%C2%91%C2%92us-olive-oil-market%C2%94-initiative/?v=947d7d61cd9a) (01.12.2017)
- Agritrade (2012): Côte d'Ivoire's cocoa sector reforms 2011-2012. Special report – December 2012. Wageningen, <http://agritrade.cta.int/en/layout/set/print/Agriculture/Commodities/Cocoa/Special-report-Cote-d-Ivoire-s-cocoa-sector-reforms-2011-2012> (01.12.2017)
- Amsden, A.H. (2009): Nationality of firm ownership in developing countries: who should 'crowd out' whom in imperfect markets? In: Cimoli, M./Dosi, G./Stiglitz, J.E. (eds.): Industrial policy and development. The political economy of capabilities accumulation, Oxford, 409-423.
- ANADER, Direction du Nord (2014): Rapport provisoire de l'atelier du programme de développement de la filière mangues sur la période 2015-2020, du 7-9 Juillet 2014 à Abidjan, ANADER Korhogo.
- Anga, J.-M. (2016): Injecting Innovation to Sustain the Future Supply of Cocoa. Presentation World Cocoa Conference 2016, Bávaro. <http://www.cocoaconnect.org/sites/default/files/Monday%20-%20Opening%20Session%20-%2011.00%20-%20Dr.%20Jean-Marc%20Anga%20-%20ICCO.pdf> (01.12.2017)
- Arndt, C. (2013): Brief on the situation of the Perishable Cargo Centre at Kotoka Airport, MOAP Ghana.
- Aurajo Bonjean, C./Brun, J.F. (2016): Concentration and Price Transmission in the Cocoa-Chocolate Chain. In: Squicciarini, M./Swinnen, J. (eds.): The economics of chocolate. Oxford: Oxford University Press, 339-362.
- Ayadi, M./Fourati, H./Triki, M.A. (2014): Olive oil: A process under control. In: Brochure of the Sfax Chamber of Commerce and Industry with the support of the Ministry of Industry and the Olive Tree Institute. Edition 2013-2014, 61-69.
- Barrientos, S. (2016): Beyond Fair Trade: Why are Mainstream Chocolate Companies Pursuing Social and Economic Sustainability in Cocoa Sourcing? In: Squicciarini, M./Swinnen, J. (eds.): The economics of chocolate. Oxford: Oxford University Press, 213-227.
- Barrientos, S./Asenso-Okyere, K. (2009): Cocoa value chain: challenges facing Ghana in changing global confectionary market. In: Journal für Entwicklungspolitik, 15(2), 88-107.
- Belgaied, H. (2014): Fund for the promotion of packaged olive oil. In: Brochure of the Sfax Chamber of Commerce and Industry with the support of the Ministry of Industry and the Olive Tree Institute. Edition 2013-2014, 115-125.
- Bitty, A./Bi, S. G./Bene, J.-C. K./Kouassi, P./McGraw, S. (2015): Cocoa Farming and Primate Extirpation Inside Côte d'Ivoire's Protected Areas. In: Tropical Conservation Science, 8(1), 95-113.



Blommer, P. (2011): A Collaborative Approach to Cocoa Sustainability. The supply threat is real. Aggregation of farmers remains the single biggest challenge to overcome. In: The Manufacturing Confectioner. May 2011, 19-26.

Candy Industry (2016): 2016 Global Top 100 Candy Companies.  
<http://www.candyindustry.com/2016-Global-Top-100-Part-4> (01.12.2017)

CBI (2014): Promising EU export markets for dried mangoes. Ministry of Foreign Affairs of the Netherlands.

[https://www.cbi.eu/sites/default/files/market\\_information/researches/tailored-information-dried-mangoes-west-africa-promising-eu-markets-west-africa-europe-processed-fruit-vegetables-edible-nuts-2014.pdf](https://www.cbi.eu/sites/default/files/market_information/researches/tailored-information-dried-mangoes-west-africa-promising-eu-markets-west-africa-europe-processed-fruit-vegetables-edible-nuts-2014.pdf) (01.12.2017)

CCA (2017): Filière Anacarde, <http://www.conseilcotonanacarde.ci/> (01.12.2017)

CCC (2017): Évolution de la Filière Café-Cacao de 2012 à 2017. 4<sup>ème</sup> Édition des Journées Nationales du Cacao & du Chocolat, Abidjan du 29 Septembre au 1<sup>er</sup> Octobre à la CAISTAB-Plateau, [http://www.conseilcafecacao.ci/docs/2016/CATALOGUE\\_JNCC\\_2017.pdf](http://www.conseilcafecacao.ci/docs/2016/CATALOGUE_JNCC_2017.pdf) (01.12.2017)

CCC (2014): Programme Quantité-Qualité-Croissance. "2QC". 2014-2023. Resume, [http://www.conseilcafecacao.ci/docs/PROGRAMME\\_2QC\\_2014-2023.pdf](http://www.conseilcafecacao.ci/docs/PROGRAMME_2QC_2014-2023.pdf) (01.12.2017)

CEPEX (2017): Information provided by CEPEX during field research in December 2017 (including information by ONAGRI/INS/CTAA)

Cimoli, M./Dosi, G./Stiglitz, J.E. (2009): The political economy of capabilities accumulation: the past and future of policies for industrial development. In: Cimoli, M./Dosi, G./Stiglitz, J.E. (eds.): Industrial policy and development. The political economy of capabilities accumulation, Oxford: University Press, 1-18.

Cocoa Barometer (2015): Resources and Data, [http://www.cocoabarometer.org/Resources\\_and\\_Data.html](http://www.cocoabarometer.org/Resources_and_Data.html) (01.12.2017)

COCOBOD (2017a): Data. Provided by the Cocoa Marketing Board and the Cocoa Marketing Company in October 2017.

COCOBOD (2017b): Cocoa Platform, [https://cocobod.gh/coco\\_platform.php](https://cocobod.gh/coco_platform.php) (01.12.2017)

Coq-Huelva, D./García-Brenes, M.D./Sabuco-i-Cantó, A. (2011): Commodity chains, quality conventions and the transformation of agro-ecosystems: olive groves and olive oil production in two Andalusian case studies. In: European and Regional Studies, 19(1), 77-91.

Côte d'Ivoire-iEPA (2009): STEPPING STONE ECONOMIC PARTNERSHIP AGREEMENT between Côte d'Ivoire, of the one part, and the European Community and its Member States, of the other part, 2009 OJ L 059.

Czapnik, B. (2014): Côte d'Ivoire's EPA: Between a rock and a hard place. In: Bridges Africa. Trade and Sustainable Development News and Analysis on Africa, 3(5), 17-19.

de Lattre-Gasquet, M./Despréaux, D./Barel, M. (1998): Prospective de la filière du cocoa. In: Plantations, recherché, développement, 5(6), 423-434.

Divine Chocolate (n.d.): About us. Owned by cocoa farmers. Made for chocolate lovers, <http://www.divinechocolate.com/us/about-us> (01.12.2017)

EBRD (2017): EBRD and FAO boost Tunisian olive oil, 17 November 2017, <http://www.ebrd.com/news/2017/raising-the-profile-of-tunisian-olive-oil-.html> (01.12.2017)

EBRD (n.d.): Project Summary Documents, <http://www.ebrd.com/work-with-us/project-finance/project-summary-documents.html> (01.12.2017)

EC (2018): Import Quotas for Olive Oil – Allocated Quantities. Management Year 2018, [https://ec.europa.eu/agriculture/sites/agriculture/files/olive-oil/tunisian-quota/2018/current\\_en.pdf](https://ec.europa.eu/agriculture/sites/agriculture/files/olive-oil/tunisian-quota/2018/current_en.pdf) (15.01.2018)

EC (2017a): Countries and Regions. West Africa, <http://ec.europa.eu/trade/policy/countries-and-regions/regions/west-africa/> (01.12.2017)

EC (2017b): Import Quotas for Olive Oil – Allocated Quantities. Management Year 2017, <https://ec.europa.eu/agriculture/sites/agriculture/files/olive-oil/tunisian-quota/2017/2017-10-05.pdf> (01.12.2017)

EC (2016): Import Quotas for Olive Oil – Allocated Quantities. Management Year 2016, [https://ec.europa.eu/agriculture/sites/agriculture/files/olive-oil/tunisian-quota/oo-tq-2016-12-14\\_en.pdf](https://ec.europa.eu/agriculture/sites/agriculture/files/olive-oil/tunisian-quota/oo-tq-2016-12-14_en.pdf) (01.12.2017)

EC (2015): Trade for All. Towards a more responsible trade and investment policy. In: European Commission, COM(2015) 497 final.

Ecobank (2014a): Côte d'Ivoire's cocoa grinders: at the crossroads. In: Middle Africa Insight Series |Soft Commodities |Cocoa, January 29, 2014, <http://ecobank1.aznresearch.com/upload/20140604052117781163jBenJTFhcc.pdf> (01.12.2017).

Ecobank (2014b): Ghana: Cocoa sector is facing new challenges. In: Middle Africa Briefing Note |Soft Commodities |Coca, July 23, 2014, <https://www.ecobank.com/upload/20140723100236691535ay7ctp5kPP.pdf> (01.12.2017)

ECOWAS-EPA (2015): Economic Partnership Agreement Between the West African States (ECOWAS) and the West African Economic and Monetary Union (UEMOA) of the one part, and the European Union and its member states, of the other part. (plus Annex), [http://trade.ec.europa.eu/doclib/docs/2015/october/tradoc\\_153867.pdf](http://trade.ec.europa.eu/doclib/docs/2015/october/tradoc_153867.pdf), [http://trade.ec.europa.eu/doclib/docs/2015/october/tradoc\\_153868.pdf](http://trade.ec.europa.eu/doclib/docs/2015/october/tradoc_153868.pdf), [http://trade.ec.europa.eu/doclib/docs/2015/october/tradoc\\_153869.pdf](http://trade.ec.europa.eu/doclib/docs/2015/october/tradoc_153869.pdf), [http://trade.ec.europa.eu/doclib/docs/2015/october/tradoc\\_153870.pdf](http://trade.ec.europa.eu/doclib/docs/2015/october/tradoc_153870.pdf) (01.12.2017)

Eiligmann, A. et al. (2017): Report on the National Mango Value Chain Workshop, March 2017, MOAP Ghana

Elfikih, S. (2014): The oil economy and development strategy. In: Brochure of the Sfax Chamber of Commerce and Industry with the support of the Ministry of Industry and the Olive Tree Institute. Edition 2013-2014, 97-112.

EUROPHYT (2017): Interceptions of harmful organisms in imported plants and other objects, [https://ec.europa.eu/food/plant/plant\\_health\\_biosecurity/europhyt/interceptions\\_en](https://ec.europa.eu/food/plant/plant_health_biosecurity/europhyt/interceptions_en) (01.12.2017)

Eurostat (2017): Statistical database, <http://ec.europa.eu/eurostat/>

Evans, N. (2014): Raising productivity and extending the mango season. HPW Fresh & Dry Ltd., Ghana.

FAGE (2016): How is the Economic Partnership Agreement Benefitting Ghana's Economy. Brochure published by the Federation of Association of Ghanaian Exporters with the support of the Trade Related Assistance and Quality Enabling Programme, <http://www.traqueghana.org/files/EPA-benefits.pdf> (01.12.2017)

FAOSTAT (2017): Statistical Database, <http://www.fao.org/faostat/en/#data/QC>

Fold, N. (2002): Lead Firms and Competition in 'Bi-polar' Commodity Chains: Grinders and Branders in the Global Cocoa-chocolate Industry. In: Journal of Agrarian Change, 2(2), 228-247.

- Fold, N./Neilson, J. (2016): Sustaining Supplies in Smallholder-Dominated Value Chains: Corporate Governance of the Global Cocoa Sector. In: Squicciarini, M./Swinnen, J. (eds.): The economics of chocolate. Oxford: Oxford University Press, 195-212.
- Fountain, A./Hütz-Adams, F. (2015): Cocoa Barometer 2015, [http://www.cocoabarometer.org/Download\\_files/Cocoa%20Barometer%202015.pdf](http://www.cocoabarometer.org/Download_files/Cocoa%20Barometer%202015.pdf) (01.12.2017)
- FranceAgriMer (2017): Statistical Database, [www.rnm.franceagrimer.fr/prix](http://www.rnm.franceagrimer.fr/prix)
- Gargouri, K./Ben Rouina, B./Rhouma, A./Ayadi, M./Abichou, M./Bentaher, H. (2013): Case study of an integrated system for olive mill by-products management in Sfax region in central Tunisia. In: Arcas N./Arroyo López F.N./Caballero J./D'Andria R./Fernández M./Fernandez Escobar R./Garrido A./López-Miranda J./Msallem M./Parras M./Rallo L./Zanoli R. (eds.): Present and future of the Mediterranean olive sector. Zaragoza: CIHEAM / IOC, 2013, 75-84 (Options Méditerranéennes: Série A. Séminaires Méditerranéens; n. 106).
- Gayi, Samuel/Tsowou, Komi (2016): Cocoa industry: Integrating small farmers into the global value chain. In: UNCTAD report, UNCTAD/SUC/2015/4.
- GEPA (2016): Non-traditional export performance. Data provided by GEPA, Accra.
- GFZB (2017): Ghana Free Zones Board. Incentives, <http://www.gfzb.gov.gh/investment%20opportunity/incentives.php> (01.12.2017)
- Ghana-iEPA (2016): STEPPING STONE ECONOMIC PARTNERSHIP AGREEMENT between Ghana, of the one part, and the European Community and its Member States, of the other part, 2016 OJ L 287/3.
- Gilbert, C. (2009): Cocoa Market Liberalization in Retrospect. In: Review of Business and Economics, 3/2009, 294-312.
- Gilbert, C. (2006): Value Chain Analysis and Market Power in Commodity Processing with Application to the Cocoa and Coffee Sectors. Università Degli Studi Di Trento, Dipartimento Di Economia, Discussion paper No. 5.
- GIZ (2017): Information provided by GIZ during field research in December 2017
- GlobalG.A.P. (2017): Statistical Database <https://database.globalgap.org>
- Granitto, Y. (2016): Europe Approves Controversial Aid Including Duty-Free Imports of Tunisian Olive Oil. In: Olive Oil Times, March 11, 2016, <https://www.oliveoiltimes.com/olive-oil-business/europe/europe-approves-duty-free-imports-of-tunisian-olive-oil/50840> (01.12.2017)
- GSS (2015): Annual Gross Domestic Product. Ghana Statistical Service, Statistics for Development and Progress, [http://www.statsghana.gov.gh/docfiles/GDP/GDP2015/2015\\_Annual\\_GDP\\_September\\_2015\\_Edition.pdf](http://www.statsghana.gov.gh/docfiles/GDP/GDP2015/2015_Annual_GDP_September_2015_Edition.pdf) (01.12.2017)
- Hecht, R. (1983): The Ivory Coast Economic 'Miracle': What Benefits for Peasant Farmers? In: The Journal of Modern African Studies, 21(1), 25-53.
- Higonnet, E. (2017): The Chocolate Crisis. Mighty Research Reveals Massive Deforestation Connected to World's Largest Chocolate Sellers, <http://www.mightyearth.org/the-chocolate-crisis/> (01.12.2017).
- Höfs, S. (2017): Kaokaoproduktion & -preisbildung in Côte d'Ivoire (CDI). Produktions- und Vermarktungsbedingungen ivorischer Kleinbäuerinnen und -bauern. In: Power-point presentation provided during field research in December 2017.

Hütz-Adams, F./Huber, C./Knocke, I./Morazán, P./Mürlebach, M. (2016): "Strengthening the competitiveness of cocoa production and improving the income of cocoa producers in West and Central Africa" (plus Annex). Bonn: Südwind e.V.

ICCO (2012): How many smallholders are there worldwide producing cocoa? What proportion of cocoa worldwide is produced by smallholders?, <https://www.icco.org/faq/57-cocoa-production/123-how-many-smallholders-are-there-worldwide-producing-cocoa-what-proportion-of-cocoa-worldwide-is-produced-by-smallholders.html> (01.12.2017)

ICCO (2017): Database provided by the International Cocoa Organization (ICCO) in December 2017.

ILO (n.d.a): Towards child labour free cocoa growing communities, <http://www.ilo.org/ipec/projects/global/CCP/lang--en/index.htm> (01.12.2017)

ILO (n.d.b): A partnership to combat child labour in the chocolate and cocoa industry, [http://www.ilo.org/wcmsp5/groups/public/---dgreports/---exrel/documents/publication/wcms\\_409581.pdf](http://www.ilo.org/wcmsp5/groups/public/---dgreports/---exrel/documents/publication/wcms_409581.pdf) (01.12.2017)

IMF (2000): Côte d'Ivoire: Selected Issues and Statistical Appendix, IMF Staff Country Report no. 00/107, Washington, D.C.: IMF Publication Services.

IMF (1998): Côte d'Ivoire: Selected Issues and Statistical Appendix, IMF Staff Country Report no. 98/46, Washington, D.C.: IMF Publication Services.

IOC (2016): World Olive Oil Figures, <http://www.internationaloliveoil.org/estaticos/view/131-world-olive-oil-figures> (12.06.2017)

IOC (2012): Country Profile Tunisia 2010, <http://www.internationaloliveoil.org/documents/viewfile/6777-tunisia> (01.12.2017)

IOC (n.d.): Designations and definitions of olive oil, <http://www.internationaloliveoil.org/estaticos/view/83-designations-and-definitions-of-olive-oils> (01.12.2017)

ITC (2017): Statistical Database, <https://trademap.org/index.aspx>

Jackson, D./Paglietti, L./Ribeiro, M./Karray, B. (2015): Tunisie: Analyse de la filière oléicole. FAO Investment Centre, Country Highlights, Rome, <http://www.fao.org/3/a-i4104f.pdf> (01.12.2017)

Kapoor, A. (2016a): Children at the Heart. Assessment of child labour and child slavery in Côte d'Ivoire's cocoa sector and recommendations to Mondelez International, [https://www.cocoalife.org/~media/CocoaLife/Files/pdf/Library/FULL\\_REPORT\\_Cote\\_Ivoire\\_Mondelez\\_Embode\\_ChildrenattheHeart.pdf](https://www.cocoalife.org/~media/CocoaLife/Files/pdf/Library/FULL_REPORT_Cote_Ivoire_Mondelez_Embode_ChildrenattheHeart.pdf) (01.12.2017)

Kapoor, A. (2016b): Children at the Heart. Assessment of child labour and child slavery in Ghana's cocoa sector and recommendations to Mondelez International, [https://www.cocoalife.org/~media/CocoaLife/en/download/article/FULL\\_REPORT\\_Ghana\\_Mondelez\\_Embode\\_ChildrenattheHeart.pdf](https://www.cocoalife.org/~media/CocoaLife/en/download/article/FULL_REPORT_Ghana_Mondelez_Embode_ChildrenattheHeart.pdf) (01.12.2017)

Kolavalli, S./Vigneri, M. (2011): Cocoa in Ghana: Shaping Success of an Economy. In: Chuhan-Pole, P./Angwafo, M. (eds.): Yes Africa Can. Success Stories from a Dynamic Continent. Washington DC: World Bank, 201-217.

Kone, M. (2010): Analysis of the Cashew Sector Value Chain in Côte d'Ivoire. African Cashew Initiative, Accra, <https://agriknowledge.org/downloads/5q47rn75s> (01.12.2017)

Kroeger, A./Bakhtary, H./Haupt, F./Streck, C. (2017): Eliminating Deforestation from the Cocoa Supply Chain. The World Bank, Washington DC, <https://openknowledge.worldbank.org/handle/10986/26549> (01.12.2017)

Laven, A. (2010): The Risks of Inclusion. Shifts in governance processes and upgrading opportunities for cocoa farmers in Ghana. Royal Tropical Institute (KIT), Amsterdam: KIT Publishers.

Laven, A./Buunk, E./Ammerlaan, T. (2016): Appendix A. Determination of Cocoa Prices on Cameroon, Nigeria, Ghana, Côte d'Ivoire and Indonesia. Appendix to Oomes, N./Tieben, B./Laven, A./ Ammerlaan, T./Appelman, R./Biesenbeek, C./Buunk, E. (2016): Market Concentration and Price Formation in the Global Value Chain. SEO Amsterdam Economics.

Lernoud, J./Potts J./Sampson, G./Voora, V./Willer, H./Wozniak, J. (2015): The State of Sustainable Markets – Statistics and Emerging Trends 2015, ITC, Geneva.

Lin, J.Y. (2012): New structural economics: a framework for rethinking development and policy, The World Bank, Washington D.C.

Lin, J.Y./Stiglitz, J. (2013, eds.): The Industrial Policy Revolution I: The Role of Government Beyond Ideology, Basingstoke: Palgrave.

Losch, B. (2002): Global Restructuring and Liberalization: Côte d'Ivoire and the End of the International Cocoa Market? In: Journal of Agrarian Change, 2(2), 206–227.

Losch, B. (2001): La libéralisation de la filière cacaoyère ivoirienne et les recompositions du marché mondial du cacao: vers la fin des "pays producteurs" et du marché international? In: Oléagineux Corps gras Lipides, 8(6), 566-576.

Lybbert, T.J./Elabed, G. (2013): An Elixir for Development? Olive Oil Policies and Poverty Alleviation in the Middle East and North Africa. In: Development Policy Review, 31(4), 485-506.

MADB (2017): Market Access Database, <http://madb.europa.eu/madb/indexPubli.htm>

Mercy, A./Aneani, F./Ofori, S./Branor, P. F. (2015). Analysis of Farmers Adoption Behaviour of CRIG Recommended Technologies as a Package: The Case of Some Self Help Cocoa Farmer Associations in the Eastern Region of Ghana. In: Agricultural Sciences, 6(6), 601-608.

MIC (2016): Tunisian Olive Oil – data, Ministry of Industry and Commerce – Tunisian Olive Oil, Tunis, <http://www.tunisia-oliveoil.com> (01.12.2017)

MIM (2016): Secteur de la Transformation du Cacao, [http://www.industrie.gouv.ci/index.php/article/Resultats-projet-pacir-onudi-cote-ivoire?page=secteur\\_cacao](http://www.industrie.gouv.ci/index.php/article/Resultats-projet-pacir-onudi-cote-ivoire?page=secteur_cacao) (01.12.2017)

Ministère de l'Agriculture, Côte d'Ivoire (2015): Document de méthodologie générale du REEA [http://www.fao.org/fileadmin/templates/ess/ess\\_test\\_folder/World\\_Census\\_Agriculture/County\\_info\\_2010/Reports/Methodology\\_6/CIV\\_FRE\\_MET\\_2015.pdf](http://www.fao.org/fileadmin/templates/ess/ess_test_folder/World_Census_Agriculture/County_info_2010/Reports/Methodology_6/CIV_FRE_MET_2015.pdf) (01.12.2017)

MOAP (2016): Post-harvest losses in the mango, pineapple and citrus value chains in Ghana. GIZ.

Ngonga-Gicquel, C. (2016): A Smear Campaign Against Tunisian Olive Oil. In: Olive Oil Times, August 15, 2016, <https://www.oliveoiltimes.com/olive-oil-business/europe/smear-campaign-tunisian-olive-oil/52459> (01.12.2017)

Nugawela, P. et al. (2017): Atelier de réflexion sur le développement d'un cluster de mangue dans la région de Haut-Basin. WATIH, unpublished.

ONH (2017): Information provided by ONH during field research in December 2017

ONH (2016): Présentation et Missions, <http://www.onh.com.tn/index.php/fr/2016-05-23-14-43-53/presentation-et-missions> (01.12.2017)



Oomes, N./Tieben, B./Laven, A./ Ammerlaan, T./Appelman, R./Biesenbeek, C./Buunk, E. (2016): Market Concentration and Price Formation in the Global Value Chain. SEO Amsterdam Economics.

OTE (2017): Exportation de l'huile d'olive Tunisienne: Les dessous du soutien de l'UE. Data analysis No. 1, Observatoire Tunisien de l'Economie, Tunis.

PACKTEC (2017): Information provided by PACKTEC during field research in December 2017.

Plank, L/Staritz, C./Rossi. A. (2014): What does "Fast Fashion" mean for workers? Apparel production in Morocco and Romania. In: Rossi, A./Luinstra, A./Pickles, J. (eds.): Toward Better Work – Understanding Labour in Apparel Global Value Chains. Basingstoke.

Pellegrin, J. (2001): The Political Economy of Competitiveness in an Enlarged Europe. Basingstoke/New York: Palgrave Macmillan.

Perkins, I. (2015): Global Cocoa processing: Ground to a Halt. In: Brown Brothers Harriman & Co., Commodity Markets Update, Oct. 2015.

Putinja, I. (2015): Tunisian Olive Sector Benefits from Japanese Cooperation Project. In: Olive Oil Times, May 11, 2015, <https://www.oliveoiltimes.com/olive-oil-business/africa-middle-east/tunisian-olive-sector-benefits-from-japanese-cooperation-project/47593> (01.12.2017)

PwC (2017): Worldwide Tax Summaries – Corporate Taxes 2017/18. PwC.

Quartey, E.T. (2013): The Determination of Producer Price in Ghana's Cocoa Sector and the Provision of Service to Cocoa Farmers. In: UNCTAD, Multi-Year Expert Meeting on Commodities and Development 2013, Geneva, Switzerland.

Reinert, E. (2009): Emulation versus comparative advantage: competing and complementary principles in the history of economic policy. In: Cimoli, M./Dosi, G./Stiglitz, J.E. (eds.): Industrial policy and development. The political economy of capabilities accumulation, Oxford: University Press, 79-106.

République de Côte d'Ivoire (2015): Enquête sur le niveau de vie de ménages en Côte d'Ivoire: Profil de pauvreté. Ministère d'Etat, Ministère du Plan et du Développement.

Reuters (2017): Ghana Stock Exchange says trading of CPC's shares suspended, August 29, 2017, <https://af.reuters.com/article/commoditiesNews/idAFL8N1LF69D> (01.12.2017)

Reuters (2015a): French Chocolate maker Cemoi's Ivory Coast plant targets W.Africa, May 18, 2015, <http://af.reuters.com/article/africaTech/idAFL5N0Y93CO20150518>, (01.12.2017)

Reuters (2015b): Ivory Coast seeks to save forests from illegal cocoa boom, October 5, 2015, <https://www.reuters.com/article/us-ivorycoast-cocoa-environment-insight/ivory-coast-seeks-to-save-forests-from-illegal-cocoa-boom-idUSKCN0RZ09H20151005> (01.12.2017)

Sangho, Y./Labaste, P./Ravry, C. (2010): Growing Mali's Mango Exports. Linking Farmers to Markets through Innovations in the Value Chain. World Bank Group, [http://siteresources.worldbank.org/AFRICAEXT/Resources/258643-1271798012256/Mali\\_Mangoes\\_Success.pdf](http://siteresources.worldbank.org/AFRICAEXT/Resources/258643-1271798012256/Mali_Mangoes_Success.pdf) (01.12.2017)

Selby, G. (2015): Italian Farmers Speak Out Against New EU Quota for Tunisian Olive Oil Imports. In: Olive Oil Times, September 28, 2015, <https://www.oliveoiltimes.com/olive-oil-business/africa-middle-east/italian-farmers-speak-out-against-new-eu-quota-for-tunisian-olive-oil-imports/48956> (01.12.2017)

Soludo, C./Ogbu O./Chang H.-J. (2004): The politics of trade and industrial policy in Africa. Forced consensus? New Jersey/ Ottawa: Africa World Press/International Development Research Centre.



- Squicciarini, M./Swinnen, J. (2016): From Cocoa to Chocolate: Process, Products, and Agends. In: Squicciarini, M./Swinnen, J. (eds.): The economics of chocolate. Oxford: Oxford University Press, xxv-xxvi.
- Tamru, S./Swinnen, J. (2016): Back to the Roots: Growth in Cocoa and Chocolate Consumption in Africa. In: Squicciarini, M./Swinnen, J. (eds.): The economics of chocolate. Oxford: Oxford University Press, 439-456.
- TARIC (2017): TARIC Consultation.  
[http://ec.europa.eu/taxation\\_customs/dds2/taric/taric\\_consultation.jsp?Lang=en](http://ec.europa.eu/taxation_customs/dds2/taric/taric_consultation.jsp?Lang=en)
- Terazono, E. (2014): Welcome to the world of Big Chocolate. Three companies will dominate processing sector. In: Financial Times, December 18, 2014,  
<https://www.ft.com/content/80e196cc-8538-11e4-ab4e-00144feabdc0> (01.12.2017)
- Thirlwall, A.P. (2013): Economic growth in an open developing economy: the role of structure and demand, Cheltenham: Edward Elgar Publishing.
- Tulane University (2015): Final Report: 2013/14 Survey Research on Child Labor in West African Cocoa-Growing Areas,  
[http://www.childlaborcocoa.org/images/Payson\\_Reports/Tulane%20University%20-%20Survey%20Research%20on%20Child%20Labor%20in%20the%20Cocoa%20Sector%20-%202030%20July%202015.pdf](http://www.childlaborcocoa.org/images/Payson_Reports/Tulane%20University%20-%20Survey%20Research%20on%20Child%20Labor%20in%20the%20Cocoa%20Sector%20-%202030%20July%202015.pdf) (01.12.2017)
- Tulane University (n.d.): Survey Research on Child Labor in West African Cocoa Growing Areas – Project Website, <http://www.childlaborcocoa.org/> (01.12.2017)
- UN Comtrade (2017): UN Comtrade Database, <https://comtrade.un.org/>
- UNCTAD (2008): Cocoa Study: Industry Structures and Competition. Study prepared by the UNCTAD secretariat, UNCTAD/DITC/COM/2008/1,  
[http://unctad.org/en/Docs/ditccom20081\\_en.pdf](http://unctad.org/en/Docs/ditccom20081_en.pdf) (01.12.2017)
- UNECA (2013a): Economic Report on Africa 2013: Making the Most of Africa's Commodities. Industrializing for Growth, Jobs and Economic Transformation. UNECA, Addis Ababa/Ethiopia.
- UNECA (2013b): The green economy in Tunisia. An implementation tool of the new sustainable development strategy (2014-2020), UNECA, Office for North Africa.  
[https://www.uneca.org/sites/default/files/uploaded-documents/SROs/NA/AHEGM-ISDGE/egm\\_ge-tunisa\\_eng.pdf](https://www.uneca.org/sites/default/files/uploaded-documents/SROs/NA/AHEGM-ISDGE/egm_ge-tunisa_eng.pdf) (01.12.2017)
- UNIDO (2017): Ghana receives a modern soil and fertilizer-testing laboratory with UNIDO support and Swiss funding, <https://www.unido.org/news/ghana-receives-modern-soil-and-fertilizer-testing-laboratory-unido-support-and-swiss-funding> (01.12.2017)
- USAID (n.d.): Tunisian Olive Oil finds a new gourmet market, <https://2012-2017.usaid.gov/results-data/success-stories/tunisian-olive-oil-finds-new-gourmet-market> (01.12.2017)
- UTZ (2016): UTZ Impact Report March 2016. Combining insights from UTZ monitoring data with findings from impact studies, UTZ, Amsterdam, <https://www.utz.org/wp-content/uploads/2016/03/Impact-report-2016.pdf> (01.12.2017)
- Vellema, S./Laven, A./Ton, G./Muilerman, S. (2016): Policy Reform and Supply Chain Government: Insights from Ghana, Côte d'Ivoire, and Ecuador. In: Squicciarini, M./Swinnen, J. (Hg.): The Economics of Chocolate. Oxford: University Press, 228-246.
- Vigneri, M./Serra, R./Wilson, S. (2016): Researching the Impact of Increased Cocoa Yields on the Labour Market and Child Labour Risk in Ghana and Côte d'Ivoire – Policy Brief, International Cocoa Initiative, [http://www.cocoainitiative.org/wp-content/uploads/2016/12/Labour-Market-Research-Study-Policy-Brief\\_EN.pdf](http://www.cocoainitiative.org/wp-content/uploads/2016/12/Labour-Market-Research-Study-Policy-Brief_EN.pdf) (01.12.2017)

WATIH (2017): Mango Symposium – Export growth and competitiveness of fresh and processed mango in Côte d'Ivoire, <https://www.watradehub.com/wp-content/uploads/2017/04/mango-symposium2017-magazine.pdf> (01.12.2017)

WCF (2017): Two-thirds of Global Cocoa Supply Agree on Actions to Eliminate Deforestation and Restore Forest Areas, Press Release November 17, 2017, <http://www.worldcocoaafoundation.org/two-thirds-of-global-cocoa-supply-agree/> (01.12.2017)

WCF (2014a): Cocoa Market Update April 1, 2014, <http://www.worldcocoaafoundation.org/wp-content/uploads/Cocoa-Market-Update-as-of-4-1-2014.pdf> (01.12.2017)

WCF (2014b): Global Chocolate and Cocoa Companies Announce Unprecedented Sustainability Strategy in Côte d'Ivoire, Press Release May 20, 2014, [http://www.worldcocoaafoundation.org/wp-content/uploads/FINAL-CocoaAction-CDI-Press-Release-English\\_05202014.pdf](http://www.worldcocoaafoundation.org/wp-content/uploads/FINAL-CocoaAction-CDI-Press-Release-English_05202014.pdf) (01.12.2017)

WCF (n.d.): Vision & Mission, <http://www.worldcocoaafoundation.org/about-wcf/history-mission/> (01.12.2017)

Whitfield, L./Therkildsen, O./Buur, L./Klær, A.M. (2015): The Politics of African Industrial Policy. A Comparative Perspective. New York: Cambridge University Press.

World Bank (2017a): Doing Business. Côte d'Ivoire, <http://www.doingbusiness.org/data/exploreeconomies/c%C3%B4te-divoire#getting-electricity> (01.12.2017)

World Bank (2017b): Doing Business. Ghana, <http://www.doingbusiness.org/data/exploreeconomies/ghana#getting-electricity> (01.12.2017)

World Bank (2017c): Doing Business. Netherlands, <http://www.doingbusiness.org/data/exploreeconomies/netherlands> (01.12.2017)

World Bank (2017d): World Bank Supports Inclusive Growth in Côte d'Ivoire, <http://www.worldbank.org/en/news/press-release/2017/12/05/world-bank-supports-inclusive-growth-in-cote-divoire> (01.12.2017)

World Bank (2017e): Cutting Deforestation Out of the Cocoa Supply Chain. <http://www.worldbank.org/en/news/feature/2017/05/22/cutting-deforestation-out-of-the-cocoa-supply-chain> (01.12.2017)

WTO (2017): WTO Tariff Database, <http://tariffdata.wto.org/> (01.12.2017)

Zakari, A.K. (2012): Ghana National Mango Study. ITC, [http://www.intracen.org/uploadedFiles/intracenorg/Content/About ITC/Where are we working/Multi-country programmes/Pact II/National%20mango%20study%20-%20Ghana.pdf](http://www.intracen.org/uploadedFiles/intracenorg/Content/About%20ITC/Where%20are%20working/Multi-country%20programmes/Pact%20II/National%20mango%20study%20-%20Ghana.pdf) (01.12.2017)

## ANNEX I – INTERVIEWS

### *List of conducted interviews*

Interviews were conducted in person or telephone and supplemented by inquiries via email

<b>Institution/Organization/Business</b>	<b>Date</b>
Private mango sector consultant, Ghana	23.01.2017
Gesellschaft für International Zusammenarbeit (GIZ) – cocoa sector expert, Ghana	23.01.2017
International Chamber of Commerce (ICC), Ghana	24.01.2017
African Center for Economic Transformation (ACET), Ghana	24.01.2017
Gesellschaft für International Zusammenarbeit (GIZ), Ghana	25.01.2017
Ghana Export Promotion Authority (GEPA), Ghana	25.01.2017
Peelco, Ghana	25.01.2017
Adventist Development and Relief Agency in Ghana (ADRA), Ghana	26.01.2017
African Center for Economic Transformation (ACET), Ghana	27.01.2017
Hans Peter Werner Fresh and Dry (HPW), Ghana	27.01.2017
International Food Policy Research Institute (IFPRI), Ghana	30.01.2017
Ghana Export Promotion Authority (GEPA), Ghana	30.01.2017
Third World Network, Ghana (TWN), Ghana	30.01.2017
Ministry of Trade and Industry (MOTI), Ghana	31.01.2017
Touton, Ghana	31.01.2017
Agro Green Limited / Agro Green Fresh, Ghana	31.01.2017
Plant Protection and Regulation Service Directorate (PPRSD)	01.02.2017
Revenue/Custom Authority, Ghana	01.02.2017
EU Delegation, Ghana	01.02.2017
Niche Cocoa, Ghana	02.02.2017
Science and Technology Policy Research Institute – Council for Scientific and Industrial Research (STEPRI-CSIR), Ghana	02.02.2017
Cocoa sector expert (private), Ghana	03.02.2017
Blue Skies, Ghana	03.02.2017
Yilo Krobo Mango Farmers Association	03.02.2017
Centre for Export Promotion (CEPEX), Tunisia	22.05.2017
Delegation of the European Union, Tunisia	22.05.2017

Friedrich-Ebert-Stiftung (FES), Tunisia	23.05.2017
Federation Nationale du Textile (FENATEX) TFCE Group, Tunisia	23.05.2017
Friedrich-Ebert-Stiftung (FES) – Conference on ALECA, Tunisia	24.05.2017
Gesellschaft für Internationale Zusammenarbeit (GIZ), Tunisia	24.05.2017
Consulting Services Assistance (CSA), Tunisia	24.05.2017
Centre Technique de l'Emballage et du Conditionnement (PACKTEC), Tunisia	25.05.2017
Union Générale Tunisienne du Travail (UGTT), Tunisia	25.05.2017
Institut Tunisien de la Compétitivité et des Etudes Quantitatives (ITCEQ), Tunisia	25.05.2017
EuroMed Rights, Tunisia	26.05.2017
Faculté des Sciences Economiques et de Gestion de Tunis, Tunisia	26.05.2017
Rosa Luxemburg Foundation, Tunisia	26.05.2017
Agence de Promotion de l'Industrie et de l'Innovation (APII), Tunisia	26.05.2017
van Laack, Tunisia	26.05.2017
UGTT, Tunisia	27.05.2017
Sfax Chamber of Commerce and Industry, Tunisia	29.05.2017
Olive oil sector expert, Tunisia	29.05.2017
C.H.O. Group, Tunisia	29.05.2017
L'Institute de l'Olivier, Tunisia	30.05.2017
Sfax Huile Export, Tunisia	30.05.2017
GIZ, Tunisia	01.06.2017
Le Conseil du Café-Cacao (CCC), Côte d'Ivoire	16.10.2017
Instant Choco, Côte d'Ivoire	16.10.2017
CONDICAF, Côte d'Ivoire	17.10.2017
Anonymous representative of a grinding company, Côte d'Ivoire	17.10.2017
Gesellschaft für International Zusammenarbeit (GIZ) – cocoa sector expert, Côte d'Ivoire	18.10.2017
Tafi/Tafissa, Côte d'Ivoire	18.10.2017
Upamci, Côte d'Ivoire	18.10.2017
Mons Chocolat, Côte d'Ivoire	19.10.2017
Interest group (anonymous), Côte d'Ivoire	19.10.2017
Societe Cooperative Agricole d'Issia (SCOOPADIS), Côte d'Ivoire	19.10.2017
Groupement des exportateurs (GEPEX), Côte d'Ivoire	19.10.2017
West Capital, Côte d'Ivoire	20.10.2017
Association Régionale des Exportateurs de Mangue AREXMA	20.10.2017

USAID (Value Chain Specialist), Côte d'Ivoire	20.10.2017
GNINANGNON Cooperative, Côte d'Ivoire	20.10.2017
LIMACE EXPORT, Côte d'Ivoire	20.10.2017
African Center for Economic Transformation (ACET)	22.10.2017
Mango Consultant, Côte d'Ivoire	22.10.2017
Mango Consultant, Côte d'Ivoire	22.10.2017
Cocoa sector expert (business advisor), Ghana	23.10.2017
Former manager of a grinding company, Ghana	24.10.2017
Special Assistant to the Vice President, Ghana	24.10.2017
International Food Policy Research Institute (IFPRI), Ghana	24.10.2017
Niche Cocoa, Ghana	25.10.2017
SobGreen, Ghana	25.10.2017
Sonapack, Ghana	25.10.2017
Eve-Lyn Farms, Ghana	25.10.2017
Cocoa Marketing Company (CMC), Ghana	26.10.2017
Gesellschaft für International Zusammenarbeit (GIZ), Ghana	26.10.2017
HPW Fresh & Dry, Ghana	26.10.2017
Peelco, Ghana	26.10.2017
Former employee of a grinding company , Ghana	27.10.2017
Cocoa Marketing Board (COCOBOD), Ghana	27.10.2017
Mango Consultant, Ghana	26.10.2017
International Cocoa Organization (ICCO), Ghana	28.11.2017
GIZ, Tunisia	04.12.2017
Private olive oil sector consultant, Tunisia	04.12.2017
CEPEX, Tunisia	05.12.2017
GIZ, Tunisia	05.12.2017
Tunisian American Olive Oil Company, Tunisia	06.12.2017
Mabrouka, Tunisia	06.12.2017
Mishkat, Tunisia	06.12.2017
Olivko, Tunisia	06.12.2017
Global Trade & Negoce, Tunisia	06.12.2017
CEPEX, Tunisia	06.12.2017
Export promotion exhibition, Tunisia	06.12.2017
Centre Technique de L'Agro-Alimentaire	07.12.2017
Private sector consultant, Tunisia	07.12.2017

Ministry of Agriculture, Tunisia	07.12.2017
Ministry of Industry, Tunisia	08.12.2017
PACKTEC, Tunisia	08.12.2017
National Olive Oil Board (ONH), Tunisia	08.12.2017
Slama Huiles, Tunisia	08.12.2017

Note: Extended interview list for Tunisia available upon request.



## ANNEX II – MANGO

### *Annex II (1): Fruit drying enterprises in Ghana 2017*

Company	Location	Dryer type	Production 2017 (tons)	Volume of processed fruits (tons)
HPW	Adeiso	South Africa	700	10,500
Bomart Farms	Nsawam	South Africa	175	2,625
ITFC	Gushie/Tamale	South Africa	15	225
WAD	Accra	German	8	120
SUF at FRI	Accra	German	2	30
<b>Total</b>			<b>900</b>	<b>13,500</b>

Source: Expert interviews

### *Annex II (2): Fruit drying enterprises in Côte d'Ivoire 2017*

Company	Location	Dryer type	Production 2017 (tons)	Volume of processed fruits (tons)
USMO	Ouangolodougou	South Africa	20	300
Les Jardins de Koba	Ferkéssédougou	China	17	204
Ivoire Organics	Korhogo	Europe	15	180
La Fruitière de la Bagoué*	Boundiali	South Africa	8	120
Scoop CA Wopin Wognon*	Ferkéssédougou	South Africa	4	60
Scoop CA Copromasi*	Sinematiali	South Africa	2.5	37.5
Scoop CA Gninangnon*	Korhogo	South Africa	4	60
Yao Tropicaux	Korhogo	South Africa	0.8	12
Koto Wobin*	Tengrela	South Africa	2	30
Centre de Sechage de Farako*	Odiene	South Africa	1	15
CDFL-CI	Ferkéssédougou	Burkina Faso	0.5	7.5
<b>Total</b>			<b>75.8</b>	<b>1,026</b>

Note: \* Financed by FIRCA

Source: WATIH 2017

### *Annex II (3): Enterprises in Côte d'Ivoire with plans to start drying in 2018*

Company	Location	Dryer type	Installed capacity (tons)	Volume of fruits to be processed (tons)
LA & JAB Fruits	Sinematiali	South Africa	200	2,400
Nembel Invest SA	Korhogo	South Africa	50	600
Sodipex	Korhogo	South Africa	30	360
Majota SCFEL	Sinematiali	South Africa	20	240
Ivoire Agreage	Korhogo	Europe	20	240
Vergers du Nord	Sinematiali	China	15	180
<b>Total</b>			<b>335</b>	<b>4,020</b>

Source: WATIH 2017

*Annex II (4): Five most important fresh mango exporters of Ghana*

<b>Rank according to export volume</b>	<b>Company</b>
1	Evelyn Farms
2	Vegpro
3	Kobiman Farms
4	ITFC
5	Bomart Farms

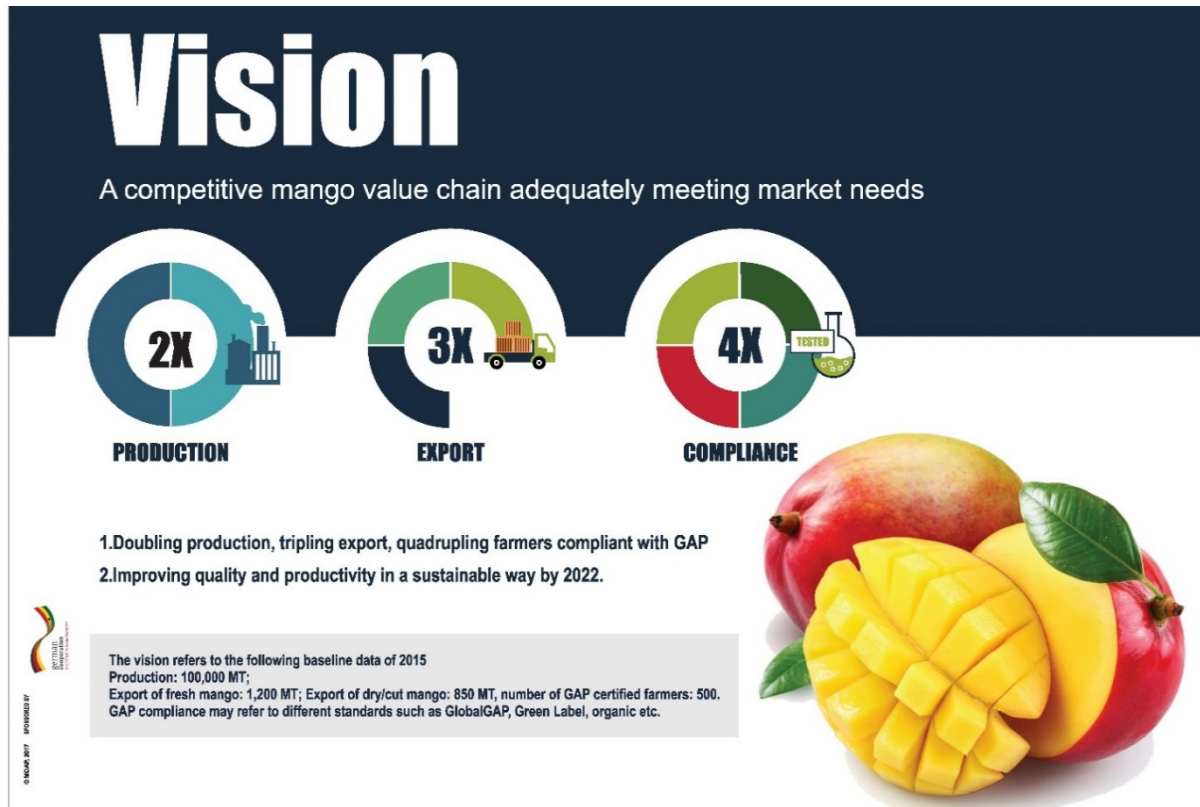
Source: Expert interviews

*Annex II (5): Fifteen most important fresh mango exporters of Côte d'Ivoire*

<b>Rank according to export volume</b>	<b>Company</b>
1	Sodipex
2	Ranch du Koba
3	SCB
4	Vidal Kaha CI
5	SPEM
6	Ivoire Agreage
7	Ouattara Trading
8	COMAKO
9	Apex-Ko
10	Vergers du Bandama
11	Nembel Invest
12	Catre d'or Côte d'Ivoire
13	Fruignon
14	Cofruibo
15	Ivoire Organics

Source: WATIH 2017

Annex II (6): Vision statement of the Ghanaian mango industry 2017



Source: Provided during field research.