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Trade in Agriculture within the Framework of SDGs in the Arab Region

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Executive Summary

Arab countries have been facing several developmental challenges that have exacerbated in the last half decade. Ranging from increasing poverty rates to high unemployment rates—especially amongst youth— to water scarcity, and drastic climate change conditions, the list of developmental challenges continues. In fact the Arab uprisings experienced in 2011 have intensified the challenges, yet also revealed that the old developmental model adopted by Arab countries has failed to meet such challenges. The old developmental model suffered several loopholes associated with focusing mainly on attaining high growth rates without accounting for quality of growth and development, adopting weak governance mechanisms which led to proliferation of crony capitalism and widening gaps between social standards, providing modest support to the role that can be played by the private sector in a competitive environment, and dealing with trade and economic integration as a goal where mercantilistic goals have prevailed rather than as a mean to achieve developmental goals. Hence, the Arab uprisings in 2011 brought in a chance to adopt a new developmental model that overcomes the aforementioned deficiencies of the old model. Among the most important pillars of the developmental plans that allow Arab countries to meet the Sustainable Development Goals (SDGs) is the role of agriculture, and specifically trade in agriculture. This paper focuses mainly on trade in agriculture as a mean to help Arab countries achieve their SDGs.

Agriculture has its specific importance in the context of the Arab world, being the primary economic activity and the main source of living for more than 50% of the Arab population whilst contributing on average to around 15% of the total Arab GDP, however with several variations among individual countries. Yet, agriculture has been facing severe challenges associated with climate change, scarcity of water, and limited arable lands making the Arab region the highest vulnerable region in the world in many of such matters. This implies that the future of agriculture sector per se in the region is highly challenging, which will further impact the prospects for trade in agriculture and its role in acting as an efficient catalyst in achieving the desired SDGs. It also implies that trade and trade related dimensions have to be reconsidered in a context that allows the sector to play a more efficient role in the developmental process. Hence, issues associated with reducing waste and costs in bringing the agricultural products to the market, strengthening the linkages between small farmers and exporters, as well as linkages that bring the agriculture produce and agro industrial products in regional and global value chains, and overcoming supply side constraints, should be high on the agenda of policy makers in the Arab world. The impact of trade in agriculture on development is far from being uniform, general, and of a specific type of causality. Hence, a main objective of this paper is to identify the theoretical foundations and the conceptual framework linking trade in agriculture with development in general and SDGs in specific. The paper starts by discussing the theoretical foundations linking trade in agriculture to development and pinpoints that there are many theories as well hypotheses that have different arguments especially if we take into account the multidimensional aspects of agriculture including poverty, employment, food security, etc. which are of ultimate importance in the Arab countries' context. Such different aspects point out that liberalizing trade in agriculture requires several preconditions to be existing on the institutional level (e.g. market structure, integration of small farmers in the value chain, etc.) as well as certain sequencing to ensure that it yields positive results on development.

Moving to a more focused context of trade in agriculture and SDGs, the paper develops a conceptual framework for the relationship between the two variables. The framework specifies the ultimate achievement of some of the relevant SDGs as the main goal, while using trade in agricultural as a mean

or an enabler to achieve this goal. In this regard, it is observed that SDGs did not differ significantly from the Millennium Development Goals (MDGs) in terms of emphasizing the role of trade in enhancing the market access for exports of developing countries and LDCs, with some urgency. No quantifiable targets were set, with the exception of doubling the global share of LDCs exports by 2020.

Moreover, and with the exception of the relationship between trade and food security identified in target 2.b, the linkage between trade and food security is modestly articulated in the SDGs' framework. Such a developmental framework does not add much to what we already know. This narrow perspective, which focuses on market access and specifically for LDCs, should be broadened to take into account the welfare effects of trade in agriculture.

In addition, SDGs have not emphasized the importance of the supply side deficiencies stemming from poor logistics, modest trade facilitation, and severe red tape measures arising from excessive bureaucracy and weak management specifically associated with trade in agriculture. SDGs failed to explicitly state the need for an efficient institutional setup required to be in place to ensure overcoming the governance problems associated with agricultural products which can prevent trade in agriculture from undertaking its role as a main engine for the developmental process. SDG 9 dealing with infrastructure and specifically target 9.1 ("Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all") as well as 9.a dealing with red tape and corruption, and SDG 16 tackling governance, are related, but they remain broad and not highly related to the specific requirements and conditions of trade in agriculture.

The focus of SDGs remained mercantilistic in nature (focusing only on exports) and left out the broader picture of associated mainly with trade costs, and the welfare effects of the agriculture sector and its policies, which are of crucial importance for the scope of this paper. In other words, the SDGs addressed separately the issue of hunger, and hence food security under Goal 2 whereas trade, when mentioned was used as an enabler to achieve a mercantilistic objective and not as an effective pillar for addressing the developmental challenges from a broader perspective.

We adopt another broader context in this paper. The starting point is to specify the relevant SDGs, and in this regard the paper has specified a number of SDGs that are related to trade in agriculture. Some of the goals, classified as "core goals", represent ultimate goals that can be reached if trade in agriculture was able to play its role in enhancing development in a wider context. Other SDGs represent necessary conditions that can enable trade in agriculture to play its role in an efficient manner, they are referred to as "catalytic goals". Finally, the third set of SDGs encompasses goals that interact with trade in agriculture in a way or another affecting its ability as a mean to achieve core SDGs, and we define this set as "remote goals". It is worth pinpointing that SDGs are broad and include several targets, hence according to the classification used some SDGs can be classified into two types as core/remote or core/catalytic.

We then review the status of agriculture and trade in agriculture in Arab countries. We find out that despite major differences among Arab countries in the role played by this sector in their economies, yet all Arab countries are net food importers and the Arab region is the among the largest food importers in the world, and the future of the sector is affected by serious challenges associated with climate change, water scarcity, desertification, etc. The paper then analyses the status of trade in agriculture in the regional trade agreements that Arab countries have joined. The paper finds out that there are several home grown NTBs that hamper Arab countries from enjoying the benefits of liberalizing trade in agriculture. Moreover, on the demand side proliferation of NTBs, lack of uniform standards, and vague rules complemented by inefficient dispute settlement mechanism hinder the flourishing of agricultural intra Arab trade. The case is different if we focus on prospects of agricultural intraregional trade between Arab countries and the West, where we find that agreements do not suffer from the vagueness nor proliferation of NTBs. However, there is a need to understand how harmonization with major trading partners' standards which is currently taking place between Arab countries on the one hand and the EU and the US on the other hand is likely to affect the intra-Arab regional trade in agriculture. Moreover, such upgrading of standards entails costs on technical and financial basis which Arab countries cannot meet on their own, and such harmonization despite its positive impact on market access might not be enjoyed by small farmers. Hence SDG 7 is of great importance here in terms of upgrading the capacity of Arab countries to be able to meet the market access requirements of Western countries.

In connection with our conceptual framework, we show that the catalytic goals that can enable trade in agriculture to play an efficient role in achieving core SDGs are not in place. For example, the institutional setups are not in place (e.g. RTAs either suffer from vagueness or full of clear obstacles that hinder market access), and the existing infrastructure is modest (eg. problems associated with trade facilitation and port management). Moreover, it is revealed that the remote goals are highly negatively affecting trade in agriculture (e.g. climate change, and water scarcity). Yet, it is also revealed that the dependence on trade in agriculture for Arab countries is an indispensable mean to overcome challenges associated with food security since self sufficiency rates are low and prospects for enhancing agriculture are limited. This implies that Arab countries should pursue the necessary efforts to enhance the role of trade in agriculture in achieving SDGs, provided that it is utilized within an efficient framework. Despite the fact that many variables can be hardly controlled as they are exogenous to the context of trade in agriculture policy making, yet several home grown policies can be efficiently managed to achieve their developmental objectives stated in the core SDGs.

We then review selected national developmental plans and visions of Arab countries to verify whether related SDGs have been incorporated or not and to what extent has trade in agriculture figured out to play a role to achieve such SDGs. The review reveals that several SDGs have been taken into consideration by the Arab governments when developing their own developmental perspectives. The plans and visions reviewed differ significantly in scope, size, level of details, and orientation, and hence it is expected that the emphasis on SDGs and level of details associated with each SDG is not the same. Yet, what can be concluded from this review is that Arab countries have not thought of linking trade in agriculture to achieving SDGs. In fact, trade in general was rarely thought of as a mean to help countries achieve SDGs. Moreover, there are a number of constraints that have not been well articulated in the national plans and can affect our thinking of how trade in agriculture can help achieve SDGs, namely climate change, water management, and desertification.

The paper then moves to suggesting a regional platform for action, where a number of findings and suggestions are developed.
First, trade in agriculture suffers from the lack of monitoring of its performance in the Arab world, and there is no information on linking its performance to the reasons that can stand behind such performance.
Second, there are no studies that have tried to link trade in agriculture to different developmental objectives. Most of the studies have focused on trade in agriculture per se.
Third, the link between SDGs and trade in agriculture needs to be more focused and studies on linking

each of the identified SDGs and trade in agriculture deserve separate country-specific studies.
Fourth, the challenges associated with SDGs and trade in agriculture are numerous and regional coordination can help to better tackle some of these challenges in more efficient and less costly means.
Fifth, the analysis has shown that due to the broad concepts and several dimensions associated to trade in agriculture and SDGs, it would be better in the context of this paper to suggest some indicators that can help verify the relationship and/or measure the effect of trade in agriculture on achieving such SDGs.
Finally, enhancing trade in agriculture in Arab countries requires special attention to trade costs associated with inefficient logistics and trade facilitation mechanisms as well as home grown NTBs which deprive small farmers and private sector from being able to work on fair competition basis and negatively affect the sector's productivity. Moreover, the market structure of agricultural products needs to be cured from market failures which again result in increasing trade costs and create some sort of anti-export bias. Further, NTBs on the importing countries (whether Arab or non-Arab countries) should be dealt with in an efficient manner if trade in agriculture is to play an efficient role in achieving SDGs.

List of Abbreviations

ADIMO:	Arab Development of Industry and Metrology Organization
AOAD:	Arab Organization for Agricultural Development
AMU:	Arab Maghreb Union
ARAC:	Arab Accreditation Cooperation
COMESA:	Common Market for East and South Africa
DCFTAs:	Deep and Comprehensive Free Trade Areas
ECOSCO:	Economic and Social Council
ESCWA:	Economic and Social Commission for West Asia
EU:	European Union
FAO:	Food and Agriculture Organization of the United Nations
FSCAD:	Food Security Centre-Abu Dhabi
FTA:	Free Trade Area
GATT:	General Agreement on Tariffs and Trade
GCC:	Gulf Cooperation Council
GDP:	Gross Domestic Product
GFSI:	Global Food Security Index
GNI:	Gross National Income
PAFTA:	Pan Arab Free Trade Area
LAS:	League of Arab States
LDCs:	Least Developed Countries
LLDCs:	Land Locked Developing Countries
MATOTRI:	Market Access Overall Trade Restrictiveness Index
MDGs:	Millennium Development Goals
MFN:	Most Favored Nation
NAFTA:	North America Free Trade Area
NTBs:	Non Tariff Barriers
NTMs:	Non Tariff Measures
ODA:	Official Development Assistance
OTRI:	Overall Trade Restrictiveness Index
RTAs:	Regional Trade Agreements
SDGs:	Sustainable Development Goals
SLR:	Sea Level Rise
SPS:	Sanitary and Phytosanitary
UAE:	United Arab Emirates
UNEP:	United Nations Environment Programme
UNDP:	United National Development Programme
UNFCCC:	United Nations Framework Convention on Climate Change
UNIDO:	United Nations Industrial Development Organization
US:	United States of America
WDI:	World Development Indicators
WTO:	World Trade Organization

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Introduction

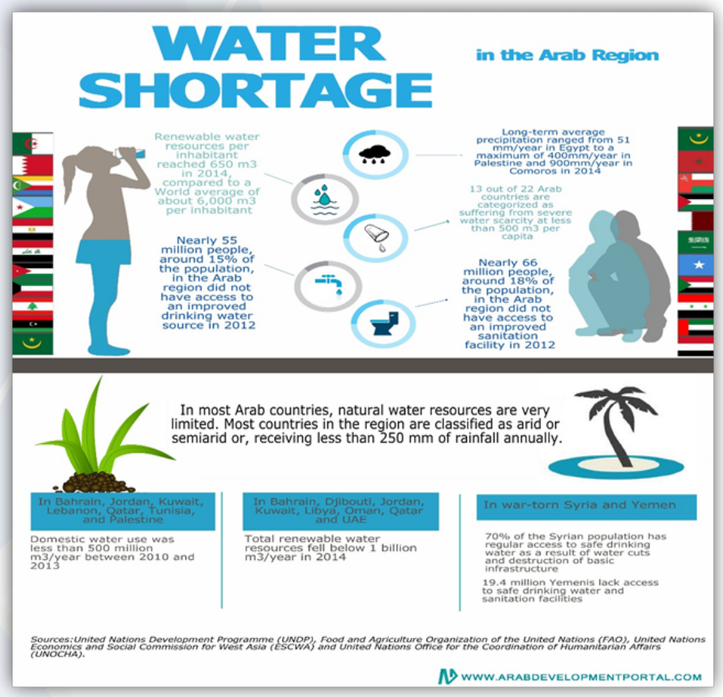
The Arab region has been facing several developmental challenges that have intensified over time, ranging from the highest population growth rates in the world, to unattainable unemployment rates, especially among youth, to an exploding youth bulge, rapid urbanization, shortage of arable land, scarcity of water, and food insecurity. The region does not seem to have been able to deal with such challenges in an efficient manner (ESCWA, 2014; Nabli, 2006). The Arab uprisings experienced by several countries in the region in 2011 have exacerbated the developmental challenges due to the economic, political, and social pressures they brought in. Irrespective of the varying outcomes in countries, the Arab uprisings have shown that the old developmental model adopted by governments has failed, and there is a need to adopt a new model that is able to cater for all such developmental challenges. The old developmental model has suffered several loopholes associated with focusing mainly on attaining high growth rates without accounting for quality of growth and development, adopting weak governance mechanisms which led to proliferation of crony capitalism and widening gaps between social standards, providing modest support to the role that can be played by the private sector in a competitive environment, and dealing with trade and economic integration as a goal where mercantilistic goals have prevailed rather than as a mean to achieve developmental goals.

Among the most important developmental challenges that have been facing Arab countries has been the issue of the future of the agricultural sector with its related dimension associated with trade in agriculture as a path to sustainable development and its several constraints ranging from climate change to water scarcity and food security to limited arable land. The focus of developmental plans concerning trade in agriculture should be on how to utilize trade in agriculture as an engine for growth and development, including inter alia the right approach to liberalization, addressing supply side constraints as well as trade facilitation and addressing home grown non-tariff barriers (NTBs), while counting for food security and environmental concerns.

On another front, Arab countries have started incorporating the Sustainable Development Goals (SDGs) in their national development strategies and included challenges associated with water scarcity, food security, limited arable land, and desertification as integral parts of the 2030 Agenda for Sustainable Development. This paper attempts to answer the main questions of whether trade in agriculture can help Arab countries achieve their SDGs as a holistic non-selective agenda of interrelated goals; and if trade in agriculture can achieve SDGs, then what are the prerequisites on the domestic, regional, and global levels to ensure that trade in agriculture undertake its full potential role in an efficient manner. It is worth emphasizing that trade in agriculture is a multifaceted issue that deals with several social, environmental, demographic, economic, and political aspects that cannot be extensively discussed in such background paper. This paper will specifically focus on the main objective of whether trade in agriculture can act as an efficient catalyst for achieving the relevant SDGs in the Arab region.

Agriculture has its specific importance in the context of the Arab world, being the primary economic activity and the main source of living for more than 50% of the Arab population whilst contributing on average to around 15% of the total Arab GDP, however with several variations among individual countries (UNIDO, 2015). Yet, agriculture has been facing severe challenges associated with climate change, scarcity of water, and limited arable lands making the Arab region the highest vulnerable region in the world in many of such matters (Figure 1). This implies that the future of agriculture sector per se in the region is highly challenging, which will further impact the prospects for trade in agriculture and its role in acting as an efficient catalyst in achieving the desired SDGs. It also implies that trade and

trade related dimensions have to be reconsidered in a context that allows the sector to play a more efficient role in the developmental process. Hence, issues associated with reducing waste and costs of bringing the agricultural products to the market, strengthening the linkages between small farmers and exporters, as well as linkages that bring the agriculture produce and agro industrial products in regional and global value chains, and overcoming supply side constraints, should be high on the agenda of policy makers in the Arab world.



Water Shortage in the Arab Region

Following this introduction, Section One identifies the conceptual framework of the relationship between SDGs and trade in agriculture, unlocking the relationship between these two variables, and their interaction in the context of the very specific scope of this paper. Section Two provides an overview of the trade in agriculture in the Arab region, aiming at mapping out the structure of trade and its prospects in the context of Arab countries with a focus on regional trade agreements (RTAs) that Arab countries are engaged in. Moreover, this section highlights the supply and demand side aspects that affect trade in agriculture in Arab countries. Section Three deals with SDGs in the context of the Arab world. It identifies how far the Arab countries are from realizing the SDGs, utilizing trade in agriculture as a tool and examining the different constraints that can hinder agriculture in general and trade in agriculture in specific from playing its role. Section Four depends heavily on the analysis provided in the former sections to identify a regional platform for action and suggests several indicators that can be utilized to measure the impact of trade in agriculture as a tool for achieving SDGs. Conclusion and policy implications then follow.

I. Conceptual Framework: The Relationship between SDGs, Trade, and Agriculture

The main question that this paper revolves around is whether trade in agriculture can help to achieve SDGs. Starting from this point we need to formulate our conceptual framework, which specifies the ultimate achievement of some of the relevant SDGs as the main goal, while using trade in agriculture as a mean or an enabler to achieve this goal.
The impact of enhancing trade in agriculture on development turns out to be a quite complex process. As per the broader context adopted in this paper, trade in agriculture can act as a tool to achieve developmental objectives (core SDGs) provided that the right setup (in terms of accommodating policies and institutions (catalytic SDGs) is present, given that several exogenous factors can change the type and causality of the relationship between trade in agriculture and development (remote SDGs).

1. The SDGs: a continuation of MDGs in terms of emphasizing the role of trade

SDGs represent a continuation of the Millennium Development Goals (MDGs), yet with several changes that ensure flexibility and sustainability. For example, the main focus of MDGs has been combating poverty which is continued in SDG 1 whereas SDG 17 (revitalize the global partnership for sustainable development", is a continuation of MDG 8 (global partnership for development), which has not been met so far where the official development assistance (ODA) targets have not been fulfilled in terms of commitment of donor countries to disburse 0.7% of their gross national income (GNI) (ESCWA, 2015a; ESCWA, 2014). The High Level Panel on Post 2015 Agenda pinpointed the importance of ensuring that the global trading system remains “open and fair” and that WTO is the main catalyst for enhancing the development impact of trade. The Panel called for bolstering market access for developing countries including specifically preference programs and duty free, quota free market access for least developed countries (LDCs) as well reducing the distorting effect of agricultural subsidies (target 2.b), which are all in line with the role of agricultural trade in achieving SDGs. Moreover, the Open Working Group created in 2014 which was formed to discuss possible SDGs in greater details included trade objectives in three of the proposed 17 goals[2] (Hoekman, 2014). If we focus on SDGs in a narrow sense, it is observed that SDGs did not differ significantly from MDGs in terms of emphasizing the role of trade in enhancing the market access for exports of developing countries and LDCs, with some urgency. No quantifiable targets were set, with the exception of doubling the global share of LDCs exports by 2020.

2. The SDGs mercantilistic focus

Moreover, and with the exception of the relationship between trade and food security identified in target 2.b the linkage between trade and food security is modestly articulated in the SDGs’ framework (FAO, 2015). Such a developmental framework does not add much to what we already know. This narrow perspective which focuses on market access and specifically for LDCs should be broadened to take into account the welfare effects of trade in agriculture.

Furthermore, SDGs have not emphasized the importance of the supply side deficiencies stemming

2 Trade: o 7.1 promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system. o 17.2 improve market access for exports of developing countries, in particular Least Developed Countries, African countries, LLDCs and SIDS with a view to significantly increasing their share in global exports, including doubling the LDC share by 2020. o 17.3 realize timely implementation of duty-free, quota-free market access on a lasting basis for all least developed countries consistent with WTO decisions and the Istanbul Programme of Action.

from poor logistics, modest trade facilitation, and severe red tape measures arising from excessive bureaucracy and weak management specifically associated with trade in agriculture. In addition, SDGs failed to explicitly state the need for an efficient institutional setup required to be in place to ensure overcoming governance problems associated the agricultural sector and its problems associated with market structure, red tape measures, etc. which can prevent trade in agriculture from undertaking its role as a main engine for the developmental process. SDG 9 dealing with infrastructure and specifically target 9.1 ("Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all") and target 9.a dealing with red tape and corruption, and SDG 16 tackling governance, are related, but they remain broad and not highly related to the specific requirements and conditions of trade in agriculture.

The focus of SDGs remained mercantilistic in nature (focusing only on exports) and left out the broader picture of trade mainly associated with trade costs (Hoekman, 2014), and the welfare effects of the agriculture sector and its policies, which are of crucial importance for the scope of this paper. In other words, the SDGs addressed separately the issue of hunger, and hence food security under SDG 2 whereas trade, when mentioned was used as an enabler to achieve a mercantilistic objective and not as an effective pillar for addressing the developmental challenges from a broader perspective.

3. A broader perspective: revisiting the SDGs from a functionalistic perspective

We adopt another broader context in this paper. The starting point is to specify the relevant SDGs, and in this regard the paper has specified a number of SDGs that are related to trade in agriculture. Some of the goals, classified as "core goals", represent ultimate goals that can be reached if trade in agriculture was able to play its role in enhancing development in a wider context. Other SDGs represent necessary conditions that can enable trade in agriculture to play its role in an efficient manner, they are referred to as "catalytic goals". Finally, the third set of SDGs encompasses goals that interact with trade in agriculture in a way or another affecting its ability as a mean to achieve core SDGs, we define this set as "remote goals". It is worth pinpointing that SDGs are broad and include several targets, hence according to the classification used, some SDGs can be classified into two types as core/remote or core/catalytic.

Moreover, several SDGs are highly related. For example, and in the context of this paper, SDG 1 and SDG 2 might be highly correlated as rightly addressed by Larson et. al (2012) when talking about the Arab region "Poverty is at the core of the region's concerns about food security". Another example is associated with interpreting SDG 9 and specifically Target 9.1 dealing with improvement of infrastructure where we can interpret as upgrading trade facilitation, logistics, and port systems required to overcome supply side deficiency and acting as a mean to improve the role of trade in agriculture. Accordingly, we have adopted the classification depicted in Table 1 as it allows us to revisit the SDGs from a functionalistic perspective, i.e. in relation to trade in agriculture and how it can contribute to implementing the 2030 Agenda. Table 1 identifies the related SDGs and their targets according to the proposed classification.

Table 1: Classification of SDGs in Terms of Relationship with Trade in Agriculture

SDG and/or Target	Classification in terms of relationship with trade in agriculture
Goal 1. (ending poverty)	Core Goal
Goal 2: (end hunger…) and specifically 2.b	Core and Catalytic Goals
Goal 6: (Ensure availability and sustainable management of water and sanitation for all) including specifically targets 6.4, 6.5, 6.6, 6.a, and 6.b	Remote Goal
Goal 8: (promote sustainable inclusive growth) including 8.2, 8.3, 8.4, 8.5, 8.a	Core and Remote Goals
Goal 9: infrastructure including 9.1 and 9.b	Catalytic Goal
Goal 10: Inequality including 10.1. 10.2, 10.3 and, 10.a	Core Goal
Goal 12: ensure sustainable consumption and production patterns including 12.1, 12.2, 12.3, and 12.a	Remote Goal
Goal 13: climate change including all targets	Remote Goal
Goal 15: combat desertification and reverse land degradation and specifically target 15.3	Remote Goal
Goal 16: Institutions and governance, and specifically 16.5. 16.6. 16.7, and, 16.8	Catalytic Goal
Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development, and specifically targets 17.10, 17.11, 17.12, as well as 17.13, 17.14, and 17.15.	Catalytic Goal

4. The theoretical framework: specialization vs. diversification

The SDGs and their targets identified in Table 1 in the majority of cases are broad developmental goals that deal with enhancing the level of development and well-being. They are broad in terms of finding their exact link with trade in agriculture. To identify the relationship between them on the one hand, whether they are core, catalytic, or remote, and trade in agriculture, on the other hand, is a daunting task. It would be preferable to start by asking whether trade in agriculture can play an effective role in achieving development including enhancing inclusive growth, generating employment, achieving equality, etc.

On a more theoretical level, the intellectual thought that drives the policy setup is based on the Ricardo

theory of comparative advantage. The theory advocates the specialization of countries in the products in which they enjoy a comparative advantage. Hence, if a country enjoys a comparative advantage in an agricultural product, it should specialize in it and trade it for other goods where it does not enjoy a comparative advantage in. This will make the exporting country as well as the other countries better off by efficiently utilizing their resources. Without getting in the assumptions of this theory where a number of which are not relevant for the context we are living in today (including perfect mobility of factors of production within a country and the immobility of factors of production within countries and the assumption of perfect competition), the theory itself has limitations associated with declining terms of trade for agricultural goods (the 1950s Prebisch Singer hypothesis[3]) where it has been predicted that terms of trade for agricultural goods will worsen by time, which will have negative welfare effects on developing countries that tend to specialize in agricultural goods. The Prebisch Singer hypothesis has proven to hold for a long time, though the recent food crises experienced by the world in 2006/2007 threw doubt on the validity of this hypothesis.

Another major contradiction of the comparative advantage theory lies with the advice of international organizations regarding food security. To protect a country from the vulnerability of supply shocks and ensure food security, governments are advised by agriculture and food related agencies to diversify their production, even if not following comparative advantage, to achieve other developmental goals, including mainly food security (Otero et. al, 2013). Some arguments even go further arguing that agriculture provides a form of a public good (e.g. food security or preserving farmers and green areas) and hence should not be left to market forces including impact of trade, and implying that agriculture is "exceptional" or "multifunctional" in this regard (FAO, 2015; Garzon, 2005).

A further debate on the theoretical level arises between following the theory of comparative advantage which does not necessarily ensure a positive impact on poverty reduction and inequality, where in some cases the crops which enjoy a comparative advantage are not necessarily those ones that create employment or raise the living standards of small farmers (Gonzalez, 2004). Hence, the relationship between trade in agriculture and development is not a straightforward type of relationship that has a specific direction. Trade affects different aspects of development, and the interaction between trade and such different aspects is complex and depends on a variety of underlying factors (including for example, how food market structures are, impact of trade on incentives to farmers, etc). Such underlying factors are not static, as they change over time, among countries, and even within the boundaries of a country itself rendering the impact of trade in agriculture on development far from being uniform, general, and of a specific type of causality[4].

5. Trade in agriculture an SDGs enabler

Trade in the context of SDGs is considered an enabler (Hemway, 2015), which should be the case if we are dealing with a development framework. An enabler or a tool can help to expedite reaching of goals if used in an efficient manner. This implies that trade in agriculture can help to achieve core SDGs if certain conditions are in place. Among the most important conditions are that the necessary institutions on the domestic, regional, and global levels that complement the role of trade should be available to allow trade to play its role in enhancing development (Hemway, 2015).

6. Complex relationship between liberalization of trade in agriculture and the developmental goals

Moreover, liberalizing trade should follow a certain pace and a sequence, as the relationship between trade liberalization and the concerned developmental goals is not straightforward. In fact, liberalization of trade entails costs, as well as benefits, and such costs can deter developmental objectives if not handled in a prudent manner. In other words, liberalization of trade should be well managed to attain developmental objectives including inter alia food security, ending hunger, creating jobs, and alleviating poverty, etc (FAO, 2015; Diaz Bonilla et. al, 2003). For example, the more open a country is to trade, the more available cheap food imports are which is positive from a food security aspect, but on the other hand, the more open to trade the more vulnerable a country is to food price spikes, that are further exacerbated by climate change and geopolitical conditions, which could have serious effects on food security and the higher the probability of undermining the production in import competing sectors that could have negative impact on employment (FAO, 2015). This implies the importance of a well-established institutional framework that counts for such aspects. Even for an agricultural products' exporting country opening up for trade, on the one hand, it can enhance exports at higher prices which have positive effects on export earnings and can promote employment. But on the other hand, opening up could also negatively affect food security (with its different dimensions of availability, access, utilization, and stability) by putting an upward pressure on consumer prices.

Trade can also affect domestic production as well as the dietary habits of the population where its impact can be positive, negative, or neutral as empirical evidence has not been conclusive in this regard (FAO, 2015). Safety valves in terms of policy options at the domestic, regional, and multilateral levels are necessary to ensure that trade performs its role in an efficient manner, while taking into account issues associated with welfare and food security. Striking the balance between the contradicting concerns of national constituencies is one aspect (for example, small farmers might not be able to integrate in regional or global value chains as they lack the technology or production resources due to the limited size of their land and hence inability to enjoy economies of scale, hence opening up to trade might not help to alleviate poverty or create jobs in this regard, but large farmers want to reap the benefits of exporting) whereas reconciling food security with exports' promotion is another aspect that makes the design and implementation of trade policy relatively complex issues in this regard (for example should countries follow their comparative advantage and exchange export earnings of food exports for the country needs of food imports or should exporting of agricultural products be suppressed for the sake of producing other food staples to ensure some kind of food security).

Hence, the role of catalytic SDGs to which we pointed out in Table 1 is of paramount importance where the design of trade policy concerning agriculture products should count for all such aspects. Finally, there are exogenous factors which are affected interchangeably by trade in agriculture including for example, climate change and rate of population growth, which despite not being associated in a direct manner with trade in agriculture are enablers that have a significant impact (affect or being affected) on trade in agriculture, these are the remote goals referred to in Table 1.

3 See for example Tilton, John E. (2012), "The Terms of Trade Debate and the Policy implications for the Primary Product Producers", Colorado School of Mines, Division of Economics and Business Working Paper No. 2012-11 available at http://econbus.mines.edu/working-papers/wp201211.pdf

4 For a review of the relationship between agriculture and development see Dethier, Jean-Jacques and Alexandra Effenberger (2012), "Agriculture and development: A brief review of the literature", Economic Systems (2012), doi:10.1016/j.ecosys.2011.09.003, available at https://www.researchgate.net/publication/228273038_Agriculture_and_Development_A_Brief_Review_of_the_Literature

It is suffice to say that the relationship between liberalizing trade in agriculture and achieving SDGs is not straightforward. Apart from the theoretical debate on whether liberalization of agricultural trade in itself is always beneficial to development or not, if we agree that trade openness can help a country to achieve its developmental objectives, then such a statement should be treated with cautious. Trade liberalization needs to be "managed" to ensure attaining developmental objectives. By managing trade we mean taking into account the aspects associated with timing, sequencing, etc as well ensuring that the other trade related policies and institutions are in place at the domestic level, while ensuring that policy space is efficiently used on the regional and multilateral levels given their associated constraints to achieve SDGs.
Hence, trade policy is a complex process, especially when focusing on agriculture due to the several other important developmental aspects that it incorporates. What makes the issue of drawing trade policy more difficult is the fact that countries do not enjoy the policy space that enables them to draw the policy they like. There are the regional and multilateral contexts in which they are engaged which limit their freedom in drawing the desired trade policy.

On the multilateral level, the WTO Agreement on Agriculture has set several rules and regulations regarding the limits associated with subsidies (export and production) as well as tariffs, tariff quotas and NTBs. The intention of such rules is to prevent the negative spillover effects of discretionary national trade policies (beggar thy neighbor type of policies) that when pursued can increase the vulnerability of world agriculture market and hence negatively affecting food security and developmental aspects of other countries. Yet, such rules set on the multilateral level constrain the ability of countries in drawing their trade policies in the way they foresee necessary to achieve their developmental goals. There are some scholars (e.g. Gonzalez, 2004) who even pointed out the failure of the multilateral system in leveling the playing field among developed and developing countries pointing towards the right of the developed countries to maintain certain type of agricultural subsidies, whereas the developing world is deprived from using them.

Moreover, contrary to the conventional wisdom that asserts that agricultural subsidies in the developed world hurt developing countries, there are several studies that showed that the removal of such subsidies can have serious effects on the poor in the developing countries due to the high food inflation rates likely to prevail after their removal in the short run (Diaz Bonilla, et. al, 2003). It is worth noting that SDGs call for ending agricultural subsidies but do not advocate the right of developing countries and LDCs to use them. The same applies, to a lesser extent, on the regional level if a country is engaged in a RTA. In the majority of cases the RTAs follows the general rules of WTO concerning subsidies, but preferential access in terms of lower most favored nation (MFN) tariff rates or wider tariff quotas are often provided, which might imply a room for a more flexible policy space context and better trade prospects when compared to WTO.

To conclude, it is worth pinpointing that the impact of enhancing trade in agriculture on development is a complex process. Trade in agriculture can act as a tool to achieve developmental objectives (core SDGs) provided that the right setup (in terms of accommodating policies and institutions (catalytic SDGs)) is present. The relationship between trade in agriculture and development is a dynamic relationship and there are several exogenous factors that can change the type and causality of this relationship (remote SDGs) rendering the generalization of a blue print an impossible task.

II. An Overview of Trade in Agriculture in Arab Countries[5]

This section shows that the catalytic goals that can enable trade in agriculture to play an efficient role in achieving core SDGs in the Arab region are not in place. Moreover, the remote goals are highly negatively affecting trade in agriculture. Yet, the section also highlights the dependence on trade in agriculture for Arab countries as a mean to overcome challenges associated with food security since self-sufficiency rates are low and prospects for enhancing agriculture are limited. This emphasizes the need for Arab countries to pursue the necessary efforts to enhance the role of trade in agriculture in achieving SDGs.

1. Role of agriculture in Arab countries

Agriculture as an economic activity has always played a central role in Arab countries. Table 2 elaborates on a number of indicators identifying the role of agriculture in the Arab countries. The table shows the huge discrepancy in the importance of this sector among Arab countries. For example, the sector plays a paramount importance for countries as Sudan and Mauritania in almost all the indicators mentioned and plays the least importance for Gulf Cooperation Council (GCC) countries, with the exception of Saudi Arabia in some of the indicators.

The sector's contribution to GDP ranges from less than 1% in the case of UAE, Qatar, Kuwait, and Bahrain to more than 25% in the case of Sudan, whereas the percentage of agricultural employment in relationship to the total employment ranges from less than 1% in the case of Qatar and Bahrain to almost 50% in the case of Sudan and Mauritania. Such huge discrepancies among Arab countries regarding the role of agriculture in their economies imply that the sensitivity of the sector can differ substantially when dealing with issues related to trade. Yet, as aforementioned in the introduction, all Arab countries are net food importers and the Arab region is the among the largest food importers in the world as a region, and the future of the sector is affected by serious challenges associated with climate change, water scarcity, desertification, etc.

5 Parts of this section draw heavily on Ghoneim, Ahmed F. (2008), Framework Document on Agricultural Trade in Arab Countries' Regional Trade Agreements. Study undertaken for the World Bank.

Table 2: Share of Agriculture Rural population, Value added, Employment and Land

	Rural population (% of total population)	Agriculture, value added (% of GDP)	Employment in agriculture (% of total employment)	Agricultural land (% of land area)
Algeria	29.27	12.67	8.78 (2014)	17.40
Bahrain	11.23	0.32	NA	11.15
Egypt	56.87	11.18	25.84	3.76
Iraq	30.53	n.a.	4.65 (2013)	21.34
Iran	26.63	9.34 (2014)	18.03	28.21
Kuwait	1.66	0.63	1.01 (2013)	8.54
Libya	21.45	1.9 (2008)	2.53 (2013)	8.72
Jordan	16.32	4.17	5.60 (2013)	11.98
Morocco	39.81	14.48	37.20 (2014)	68.54
Mauritania	40.14	20.78 (2014)	49.65 (2013)	38.53
Oman	22.36	1.57	27.56 (2013)	4.75
Qatar	0.76	0.16	1.23	5.65
Saudi Arabia	16.87	2.26	6.10	80.78
Syria	42.34	17.90 (2007)	18.74 (2013)	75.81
UAE	14.46	0.7 (2012)	2.73 (2013)	4.57
West Bank and Gaza	24.75	4.52 (2014)	8.65	49.5
Yemen	65.39	10.10 (2006)	35.74 (2013)	44.6
Sudan	66.19	39.32	48.61 (2013)	28.7
Tunisia	33.16	10.45	15.30 (2013)	64.84
Lebanon	12.21	4.82	1.47 (2013)	64.32
Comoros	71.7	35.9 (2014)	n.a.	71.5 (2014)
Djibouti	22.7	3.9 (2007)	n.a.	73.4 (2014)
Somalia	60.4	n.a.	n.a.	70.3 (2014)
Arab World	42.17	6.82	n.a.	35.2

2. Food security in Arab countries

Table 3 elaborates on the food security status in Arab countries. As seen from the table the extent of food insecurity differs significantly from one Arab country to another being low among GCC to extremely alarming in Palestine and alarming in Sudan. It is also observed that there is high correlation among the macro and micro pillars of such food insecurity where when a country has good scores in one it also had equivalent scores in the other serious, and vice versa. The ratio of spending on food imports out of export earnings and net remittances is an indicator of food security and in the case of Arab countries, with the exception of Gulf countries and Libya, such ratio has exceeded 5% which is considered relatively high. The ratio has even reached 10% for countries as Jordan and Lebanon (Woertz, 2017). The macro indicator has worsened over time as revealed in Table 3.

Table 3: Food Security in Arab Countries

	Overall Score of GFSI (2016)	**Macro Level (food imports/(total exports + net remittances)**		**Micro Level (% of stunted children)**
		Breisinger et al (2012)	Author's Calculations	
Algeria	54.3	7.3%	17.9% (2015)	15.6
Bahrain	70.1	2.9 %	3.4% (2014)	9
Egypt	57.1	8.7 %	20.9% (2015)	30.7
Kuwait	73.5	2.4 %	6.5% (2015)	3.8
Oman	73.6	6.2 %	9.9% (2014)	9.6
Jordan	56.9	13.9 %	23.5% (2015)	8.3
Morocco	55.5	8.2 %	9.4% (2015)	21.6
Qatar	77.5	2 %	3.8% (2015)	4
Saudi Arabia	71.1	4 %	9.5% (2015)	9.1
Sudan	34.7	8.4%	12.4% (2011)	37.9
Syria	36.3	9.7 %	15.5% (2005)	28.6
Tunisia	57.9	6.5 %	9.1% (2013)	9
UAE	71.8	3.4 %	5.5% (2014)	
Yemen	34	15.4 %	27% (2010)	59.6
Lebanon	n.a.	16.5 %	18% (2014)	15
West Bank and Gaza	n.a.	31.9 %	n.a	11.8
Libya	n.a.	3.4 %	4.5% (2010)	21
Comoros	n.a.	n.a.	63.02 (2012)	32.1
Djibouti	n.a.	n.a	n.a	33.5
Iran	n.a.	n.a	7.2 (2011)	n.a.
Mauritania	n.a.	n.a	14.2 (2014)*	22
Somalia	n.a.	n.a	n.a.	25.3

GFSI: Global food security index of a score 0-100, above 72.4 is best environment, score 57.1 to 72.3 is good environment, 41.6 to 57 is moderate environment and from 24 to 41.5 needs improvement.
Sources: EIU (2016), Breisinger et al (2012)
*the ratio excludes net remittances due to unavailability of data
Macro level food security are calculated by the other using latest data available in WDI

3. Food self-sufficiency in Arab countries

Regarding food self-sufficiency rates, there are some products, namely cereals, sugar, and fats and oils, where the rate is significantly low implying the high dependence on food imports for the region as a whole (Table 4). Over time, the self-sufficiency rates have improved for some commodities and deteriorated for others. This implies that trade in agriculture has a paramount in covering the deficit, but in this regard it should be efficiently designed and implemented to strike the right balance between enhancing food security and lessening import dependency.

Table 4: Food Self-Sufficiency in Arab Countries (%), 2005, 2011

Food Commodity	2005	2011
Cereals	49.74	45.55
Sugar	38.47	36.85
Fats and Oils	28.12	54.35
Meat	80.8	76.19
Fruits and Vegetables	98.49	106.19
Fish	103.09	98.19
Other Commodities	77.78	82.5

When the food self-sufficiency rates are calculated for each country on separate basis, it is clear that GCC countries (which performed relatively well in food security) have the worst rates for self-sufficiency as revealed in Table 5. Over time the self-sufficiency rates improved for some countries and deteriorated for others whether for total food or for cereals and the there is no correlation among them.

Table 5: Food Self Sufficiency by Country (%), 2005, 2011

Country	Total Food		Cereals	
	2005	2011	2005	2011
Bahrain	12.96	12.81	0.00	0.00
Kuwait	28.38	21.68	3.88	2.56
Oman	45.21	34.52	1.17	9.22
Qatar	12.18	9.90	3.12	0.37
Saudi Arabia	44.52	34.49	26.75	11.15
UAE	21.13	18.66	0.85	1.06
GCC	37.40	29.45	20.25	9.12
Yemen	51.53	31.45	22.59	10.92
Iraq	75.34	82.84	55.51	95.42
Jordan	56.26	53.09	5.05	3.66
Lebanon	73.23	61.03	18.05	10.96
Syria	85.23	80.62	74.00	57.98
Palestine	81.55	72.26	19.69	10.00
Lebanon	77.20	75.52	54.86	56.48
Egypt	83.68	78.96	69.63	56.30
Sudan	91.15	86.84	75.74	70.59
Algeria	53.48	70.04	29.88	31.96
Libya	44.95	43.09	10.79	7.06
Mauritania	68.49	70.03	19.17	36.04
Morocco	89.60	80.40	46.09	58.91
Tunisia	71.78	68.49	47.82	46.79
Comoros				
Djibouti	4.04	2.00	0.00	0.00
Somalia	69.17	74.26	32.89	33.00
Arab countries	70.48	71.69	49.74	45.55

Arab countries, with no exception, are net food importers, with grains representing more than 50% of their imports (Talks, 2013). The prospects for achieving food sovereignty and enhancing food security are dim due to demand side aspects (as higher population growth than the world average, higher rate of

urbanization than the world average, and higher income growth than the world average[6]). As depicted by ESCWA (2014) more than half of the Arab population lives in cities and the urban population is expected to double between 2020 and 2050. There are also supply side constraints associated with scarcity of land and water and worsening climate change conditions (ESCWA, 2014; Talks, 2013; Lampietti, 2011).

The situation on the ground has been worsening over the last decade in regards to food security where the number of chronically undernourished people in Arab countries reached 79.4 million people (representing 11.2% of the total Arab population) over the period 2010-2013, which is higher than what used to prevail in the period 2008-2010. Moreover, the Arab region suffers from a high rate of stunting and obesity, the highest in the word, with 31% of children under five stunted and more than 25% of the population suffering from obesity (FAO, 2014). In addition, recent studies (e.g. Ianchovichina, et al, 2012) have found that Arab countries are more prone to high pass through effects from international to domestic prices, despite the use of food subsidies and other government tools to cushion food security and lessen the negative impact of high world prices on domestic market.

Ianchovichina, et al (2012) found also that the price through effect differs significantly from one country to another and that such high price through effects have negative impact on inflation rates in Arab countries. The home grown domestic factors associated with storage, logistics, and procurement play a significant role in explaining food inflation in a large number of Arab countries. Despite the fact that the agriculture sector per se might not be of the same level of importance of all Arab countries, trade in agriculture remains a crucial variable in the equation of development of Arab countries as it is highly associated with food security, which is a major concern in the Arab region, and is the only way to overcome the challenges associated with agriculture as explained below.

4. Agricultural trade openness in Arab countries

General trade indicators as trade openness imply that the majority of Arab countries are modest in terms of their integration in the world economy, especially if oil trade is excluded (Hamwey, 2015). Moving to the status of trade in general and trade in agriculture in specific in Arab countries, we observe that Arab countries have been considered lagging in terms of their integration in the world economy. Table 6 shows the extent of trade openness (proxy for integration with the rest of the world) and reveals that trade openness has decreased for the majority of Arab countries over time, implying that they have become less integrated in the world economy since 2005 for the majority of Arab countries, with few exceptions where some countries experienced higher trade openness indicators starting 2010 till 2012 but then suffered a relative decline. Moreover, if oil is excluded such rates will decrease significantly for the majority of Arab countries.

6 For example as cited in Lampietti, 2011, population growth rate in the Arab countries is projected to be 1.7%, compared to 1.1% globally. Income growth, at 3–3.4%, is also faster than the global average. Urbanization is also increasing: urban population in Arab countries grew by 3% during the 1990–2006 period, compared to the global average of 2.2%.

Table 6: Merchandise Trade Openness in Arab Countries, 2005-2015

	2005	2010	2011	2012	2013	2014	2015
Algeria	64%	60%	60%	58%	57%	57%	54%
Bahrain	123%	106%	113%	106%	108%	103%	67%
Comoros	29%	48%	52%	51%	49%	47%	n.a.
Djibouti	45%	41%	49%	50%	58%	59%	59%
Egypt	39%	36%	38%	36%	31%	32%	25%
Iraq	95%	70%	71%	69%	64%	63%	56%
Kuwait	75%	80%	83%	84%	83%	84%	76%
Lebanon	56%	62%	66%	64%	61%	56%	48%
Libya	79%	89%	78%	n.a.	n.a.	n.a.	n.a.
Morocco	51%	57%	65%	67%	63%	63%	59%
Oman	89%	96%	105%	105%	117%	102%	n.a.
Jordan	118%	85%	93%	93%	89%	87%	75%
Saudi Arabia	73%	68%	74%	74%	73%	68%	58%
Sudan	44%	33%	29%	20%	20%	17%	12%
Somalia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Tunisia	73%	88%	91%	92%	89%	87%	80%
UAE	112%	132%	145%	154%	159%	155%	134%
Yemen	66%	56%	64%	61%	53%	48%	37%
Qatar	80%	78%	86%	89%	86%	78%	69%
West Bank and Gaza	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Trade in agriculture remained relatively highly modest as a component of Arab countries' overall trade patterns as revealed in Table 7. With the exception of Egypt and Jordan, Arab countries have experienced a relatively slight improvement in their agricultural trade openness indicator between 2005 and 2015. The table also points out that agricultural trade data is a big problem in the Arab region where a number of countries do not have the necessary data associated with trade in agriculture.

Table 7: Trade Openness as Measured by the Ratio of Food and Agricultural Raw Materials' Imports and Exports to GDP

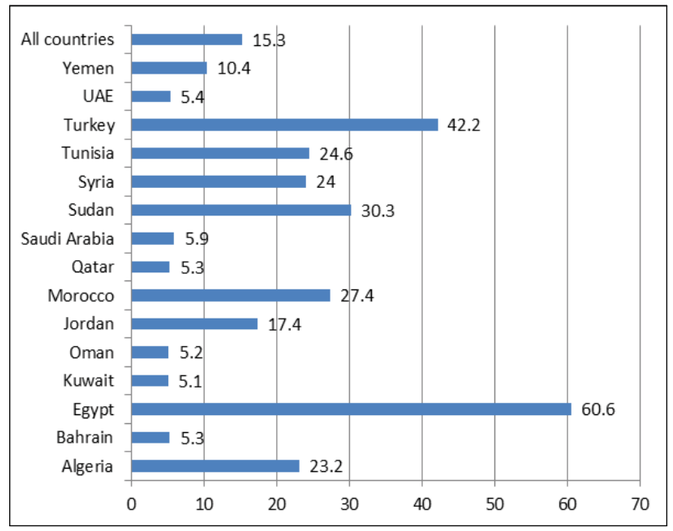
	2005	2010	2011	2012	2013	2014	2015
Algeria	4.22	4.70	5.93	5.30	5.57	6.10	6.65
Bahrain	4.59	4.94	5.13	6.60	6.89	6.38	4.96
Comoros	11.70	19.40	n.a	25.17	n.a	n.a	n.a
Djibouti	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Egypt	7.64	7.83	8.96	8.12	6.14	7.46	5.69
Iraq	n.a	n.a	n.a	n.a	n.a	1.90	n.a
Kuwait	n.a	3.39	3.10	n.a	2.99	3.51	5.10
Lebanon	9.50	10.54	12.04	11.42	11.26	11.47	n.a
Libya	n.a	3.06	n.a	n.a	n.a	n.a	n.a
Morocco	8.59	9.12	10.36	10.54	9.36	10.12	9.36
Oman	5.08	5.90	5.63	5.47	6.10	6.17	n.a
Jordan	17.68	14.82	16.24	17.22	17.10	17.26	15.80
Saudi Arabia	3.23	4.01	3.71	3.64	3.98	4.00	4.53
Sudan	5.48	4.92	3.73	n.a	n.a	n.a	n.a
Somalia	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Tunisia	8.11	8.86	11.08	9.70	10.25	8.97	11.02
UAE	4.35	n.a	n.a	6.16	6.42	6.85	n.a
Yemen	10.82	11.26	13.34	13.93	11.05	16.89	18.55
Qatar	1.68	1.63	n.a	n.a	1.69	1.68	2.38
West Bank and Gaza	n.a	n.a	n.a	n.a	n.a	n.a	n.a

5. International and Regional Trade Agreements in the Arab Region

Not all Arab countries are members of WTO, where out of the 22 members of the League of Arab States (LAS) 6 countries still did not accede including Iraq, Lebanon, Libya, Syria, Comoros Islands, and Sudan. On the regional level, Arab countries have joined several RTAs, whether among themselves (PAFTA, Agadir, GCC, AMU, bilateral preferential trade agreements) or with the Western world (e.g. Association Agreements between EU and Agadir members and the US free trade agreements with Oman, Morocco, Bahrain, and Jordan) as well with other developing countries (e.g. Egypt, Libya and Sudan joining COMESA).

Starting from the 1990s and with the establishment of WTO the majority of Arab countries have heralded in terms of opening up to the rest of the world. Agricultural trade was embedded in their opening up whether on global or regional basis. Yet, it has not been always the case that Arab countries have devoted attention to the prerequisites of opening up in terms of the associated trade related policies on the domestic level or cushioned themselves with enough policy space on the regional or global level. Moreover, focus of Arab countries, as well as other countries, has always been mercantilistic, namely aiming at enhancing their agricultural exports while neglecting the role of agricultural imports in smoothing out their food security aspects. Evidence on the proliferation of home grown NTBs shows that Arab countries have a serious problem with this issue. For example, surveys undertaken have identified that Arab countries continue to apply discretionary measures in dealing with food imports and do not abide by WTO or RTAs rules (Ghoneim et. al, 2011; Ghoneim, 2009; Ghoneim et al, 2004). Ranging from undisciplined subsidies to abuse of SPS measures in terms of costly and excessive testing procedures at the borders to imposition of extra charges, to different labeling requirements are all examples of how Arab countries increase the costs associated with trade in agriculture, especially that such NTBs affect both export and import sides, though with different extents. The bias against imports is much more evident as depicted by the high tariffs imposed on agricultural goods as shown in Figure 1 as well as the inefficient policies especially with regard to regulatory policies and procedural systems that have continued to be applied in this sector.

Figure 1. : Agricultural Import Tariffs 2016 (%)*



*These are the only Arab countries covered by the database.
Source: EIU (2017)
**Turkey is included for comparison

For example, the latest WTO Trade Policy Review of Tunisia in 2016 states that "This bears witness to the ineffectiveness and complexity of trade policy in the agricultural sector, which involves numerous taxes, public import monopolies, marketing offices, State-owned enterprises and subsidies."[7], as well as the WTO Trade Policy Review of Saudi Arabia in 2016 "Although trade policy is quite straightforward, and tariffs on most products are low, procedures to import and export are complicated"[8].

Other Arab countries face similar problems. For example the latest WTO Trade Policy Review of Morocco in 2016 reveals that "Despite the substantial tariff reductions introduced under this reform, tariff protection remains high in the agricultural sector, with rates of at least 30% for a total of 210 tariff lines. The effect of these tariffs on Morocco's trade is to strongly deter imports of these products and push up their cost to consumers"[9], whereas in the case of WTO Trade Policy Review of Mauritania (2011), "there is no proper coordination of sanitary and phytosanitary (SPS) control at the border, which

7 https://www.wto.org/english/tratop_e/tpr_e/s341_e.pdf
8 https://www.wto.org/english/tratop_e/tpr_e/s333_e.pdf
9 https://www.wto.org/english/tratop_e/tpr_e/s329_e.pdf

is not conducive to developing exports, despite Mauritania's advantages in this respect"[10].

The absence of a comprehensive developmental view to the role of trade in agriculture in Arab countries resulted in modest agricultural trade performance and several setbacks on the import side as well as on the export side. Empirical evidence identifies that NTBs and high trade costs associated with inefficient logistics and trade facilitation in the Arab region have hampered their trade relations among themselves as well as with their major trading partners as the EU (Ghoneim, et al. 2011).

Moreover, such inefficient logistics and trade facilitation resulted in weak agricultural productivity, in fact the lowest productivity in the world in several agricultural products including cereals (Arab Forum for Environment and Development, 2011)[11], which is partially attributed to wrong methods applied in harvesting, but the main reason for such low productivity has remained poor logistics. For example, it was estimated that the annual losses of grains in Arab countries amounted to about 6.6 million tons in 2012. Loss in imported wheat in some Arab countries was translated to about 3.3 million tons mainly because of inefficient import logistics. The grain and wheat loss amounted to around 3.7 billion US dollars at 2011 import prices (Saab, 2015). As a result, so far trade has not played its role as an effective enabler to achieve developmental objectives among which SDGs (Hamwey, 2015).

6. Agriculture: a sensitive issue in RTAs all over the world

The existing evidence on how agriculture-related provisions are worded in RTAs and how sensitive are agricultural products considered is voluminous. In fact, agriculture is considered sensitive in almost all RTAs, yet not excluded de facto or de jure, but follows probably a different track of gradual liberalization slower than non-agricultural goods.
As depicted by Hoekman and Leidy (1993) "In the majority of RTAs agriculture is typically excluded from liberalization". Excluding agriculture, or delaying its liberalization, or craving out certain products from negotiations is a typical case for RTAs concluded by the EU, the US as well as other South-South RTAs. The analysis of such protectionist measures applied in RTAs on affecting agricultural trade in specific is modest. Moreover, intraregional trade among Arab countries remains modest where intraregional exports did not exceed 8% of total exports of Arab countries to the whole world, whereas it has reached 62% for the EU and 49% for the NAFTA (Hamwey, 2015).

With the start of implementation of PAFTA in 1998 intraregional trade has progressed positively and has been on an increasing trend (Ghoneim, 2017; Abedini and Peridy, 2008), yet still the potential of intraregional trade remained un-reaped. There is an urgent role to revive the role of intraregional organizations concerned with agriculture. The Arab Organization for Agricultural Development (AOAD) working under the umbrella of the League of Arab States, established in 1970 and based in Khartoum, Sudan was mandated to enhance the role of the agricultural sector[12]. Yet, nothing among its objectives mentioned the word "trade", but rather among its objectives was "Facilitating exchange of agricultural products between Arab countries", with no clear tools or policies specified, with the exception of monitoring the implementation of Arab countries in terms of liberalizing their trade agriculture under PAFTA. It is worth noting that the most updated information on the website of AOAD dates back to 2009, implying the modest interest in publicizing its activities, if any (Box 1).

10 https://www.wto.org/english/tratop_e/tpr_e/s250_sum_e.pdf
11 http://www.afedonline.org/report2011/pdf/en/chapter%201agriculture.pdf
12 http://www.aoad.org/about_en.htm

Box 1: PAFTA's approach in terms of liberalizing intraregional trade in agriculture

PAFTA has adopted a gradual approach in terms of liberalizing intraregional trade in agriculture. The experience with the historical attempts to liberalize intraregional trade and especially trade in agriculture has proven that it is a difficult task. PAFTA chose the path of allowing for limited exceptions with a sunset clause. Hence, each member of the PAFTA was allowed to list a number of agricultural products that is not subject to the annual agreed upon reduction of tariffs, following the so called production season (Agricultural Products Group or Farmer's Almanac) as per the ECOSCO decision number 1350 dated 12/2/1998. The production season (Farmer's Almanac) was not by any means thought of excluding agriculture from liberalization, but it just was aimed at giving more space for Arab countries which are members of PAFTA to harmonize their agricultural production with the gradual liberalization of intraregional trade. The ECOSCO decision pinpointed several aspects as follows:

1. Agricultural goods should be produced under natural conditions. Thus Farmer's Almanac does not include goods produced outside natural production seasons using different protective agricultural technologies (where it is possible to control production conditions to be able to produce the good during the whole year not only during Farmer's Almanac). This is to promote specialization in Arab agricultural production according to comparative advantages for different Arab states.
2. The scope of goods listed in production season tables is confined (limited) to fresh goods, thus processed, preserved, canned and pickled goods are not included. As well goods subject to processing –not in their primary form- are out of scope.
3. The production season (Farmer's Almanac) constitutes production peak and is not supposed to cover the whole produce or harvest or collection period. Moreover, it is possible to have more than one production peak for a single good in case of production in different climate zones within the same state.
4. A maximum of 10 goods within each production season's (Farmer's Almanac's) country tables are allowed. As well, total production peak periods should not exceed 45 months and for each production peak not to exceed 7 months a year.
5. Leaf-vegetables and types thereof are not included in production season (Farmer's Almanac) tables as almost all of those goods are produced in short successive seasons during the whole year.
6. Goods that have no similar production within Arab countries which are members of the PAFTA are not included in production season (Farmer's Almanac) tables (adapted from Ghoneim and Kheir El Din, 2006).

Table 8 shows the main agricultural products that PAFTA members asked to include in its Farmer's Almanac in 2002. It is important to note that there are other Arab countries which included other products in the Farmer's Almanac, however due to unavailability of data such countries are not included in the table.

Table 8: Arab States Agricultural Products Exceptions as agreed upon within PAFTA in 2002

Egypt	Lebanon	Syria	Morocco	Tunisia	Libya	Jordan	Iraq
Potatoes, sweet potatoes, orange, grapes, melon, apple, pear, apricot, tangerines melon, peaches	Potatoes, sweet potatoes, tomato, onion, cucumber, orange, grapes, melon, apple, tangerines	Potatoes, sweet potatoes, tomato, onion, orange, lemon, melon, clementine	Potatoes, sweet potatoes, dates, grapes, apples, garlic	Potatoes, sweet potatoes, tomato, onion, grapes, melon, apricot, artichokes, garlic, hot chilies,	Potatoes, sweet potatoes, onion, dates, grapes, garlic	Potatoes, sweet potatoes, onion, banana, orange, lemon, grapes, apples, peaches, garlic	Tomato, dates, orange, grapes, homogerade

Source: General Federation of Trade, Industry and Agriculture Chambers in Arab States. January 2003.

In 2005, with the full implementation of PAFTA agricultural products were to be fully liberalized following the agreement, which countries agreed to implement at least by not announcing to restrict any form of agricultural imports from PAFTA members. Regarding provisions dealing with agriculture in PAFTA, no agricultural specific provisions were set in the agreement. Provisions regarding countervailing measures (Article 5 of the Agreement) were general and did not specify agriculture per se. The same applies to antidumping measures which according to Article 6 "Regarding antidumping measures international norms are to be applied". Articles 7 and 8 asked for reducing other charges and surcharges that have similar effect as tariffs along with the tariffs' reduction schedule. NTBs continued to prevail. For example, high fees for inspection have resulted in 2-3% extra increase in prices and delays at the boarders which resulted in extra costs in range of 5-10%. Such measures were applied on both processed food and agricultural products. In addition, extra charges and surcharges (sometimes called tariffs) were mainly found in non-GCC countries (mainly Agadir countries) and affected mainly processed food namely dairy products and juices. They ranged from 20% to 185%. Finally, ad hoc embargos based on abuse of SPS and non-SPS measures have created a huge unpredictable environment for exporters and resulted in 100% loss (Ghoneim et. al, 2011; Ghoneim, 2009).

Agadir followed PAFTA in terms of agricultural liberalization. According to Article 4 agricultural and processed agricultural products shall be liberalized in accordance with the executive program of the Agreement on “Facilitation and Promotion of Trade Exchange among the Arab Countries”, in preparation for the creation of a PAFTA. The agreement did not specify any specific agricultural provisions regarding subsidies, dumping, or NTBs. Articles concerning such issues were set in a general way that covered all products.

As for the GCC, the agreement called for full liberalization and elimination of custom duties and all c harges alike of agricultural and processes agricultural products among members so long they acquire national origin (following Articles 1 and 2 of the Unified Economic Agreement of 2001). However, the agreement was silent regarding NTBs and the usage of agricultural subsidies. In 1996 GCC countries announced their adoption of a common agricultural policy. The policy was general and did not tackle issues like subsidies or NTBs. The cooperation following the common agricultural policy resulted in harmonizing a number of standards in the field of agriculture, but up till 2015 not all the standards associated with agriculture and food were harmonized (GCC, 2015). It is not clear from the agreement what kind of common policy is to be adopted, as all what is mentioned are enhancing joint production projects and cooperating in the field of water resources.

As for the AMU which was established in 1989 among Morocco, Tunisia, Algeria, Libya and Mauritania, liberalization of agriculture has not been mentioned in the preamble of the deceleration and convention of the Union as a target. Arab Maghreb Union is some kind of a political and economic union that aims at adopting coordinated and joint policies in different fields including economic, political, social, cultural, and energy.

So far, the RTAs signed among Arab countries did not include any provisions that pointed out explicitly the sensitivity of agriculture. Yet, when we investigate the status of the bilateral preferential trade agreements (PTAs) among Arab countries which are still active we figure out how agriculture remains problematic. Such bilateral preferential trade agreements were first signed in the 1990s and continue to be applied despite the existence of PAFTA and other sub regional RTAs as reviewed above. It is difficult to count the number of such agreements due to the lack of public information on them. For a country like Egypt where information was available, it has such bilateral agreements with Libya, Syria, Morocco, Tunisia, Lebanon, and Iraq.

The PTAs adopt either a positive list approach for liberalizing a number of commodities, or a mixture of positive and negative list approaches as well as prohibitive lists. Agricultural and processed agricultural products are dominant products that appear in almost all the lists. The PTAs exist simultaneously with both PAFTA and Agadir and the exporter has the right to choose the agreement that he/she wants to adopt when exporting his/her product. PTAs were less transparent than PAFTA, Agadir and, GCC concerning agricultural related provisions. It is not clear how a country can adopt two types of agreements at the same time concerning the same commodities allowing the commodities to enter duty free following one agreement and setting protection measures following the other agreement

South-South Arab RTAs have remained certainly shallow in terms of treating agriculture and processed agricultural products. The agreements asked for full liberalization of agricultural products which accordingly was to be implemented in theory. Tackling issues of subsidies, NTBs, standards, etc. were vague and not agricultural specific. There is a need to investigate to what extent the application of such measures is common among Arab countries and to what extent intraregional trade is affected by such measures.
In other words, there is a need to investigate how agricultural trade is treated in agreements compared to reality under Arab RTAs (especially those among Arab countries themselves). Moreover, there is a need to understand whether the existence of several RTAs and preferential trade agreements among Arab countries themselves has an impact on the flow of agricultural trade. The reason is that the existing preferential agreements contain negative lists that include a list of agricultural and processed food products whereas PAFTA, Agadir, and GCC do not include any negative lists.

Hence, with the existence of more than one system for the same commodity, it is likely that lack of transparency could prevail. The available evidence indicates that intraregional trade in agriculture

among Arab countries suffers from higher degree of protectionism when compared to non-agricultural intraregional trade (Kheir el Din, 2006). There exist several reports and survey methods studies that have identified a number of NTBs that exist in Arab countries and negatively affect trade whether with Arab countries or non-Arab countries.

A survey by the League of Arab States (LAS) (2004) identified that most of trade frictions among PAFTA members arise from issues related to standards or border transaction procedures dealing with time and surcharges when crossing borders. LAS has started introducing several initiatives for overcoming the lack of deep aspects of integration in PAFTA. Several proposals have been put forward, including establishing a system for effective implementation of conformity assessment procedures, enhancing efforts to harmonize standards and establishing a system of Arab standards, overcoming problems associated with existing quantitative or regulatory barriers to trade as public sector exclusiveness of importation in some countries. However, as pointed out in a survey undertaken by LAS on the implementation status of PAFTA (LAS, 2008) the same problems impeding Arab trade integration have continued to exist. In many cases, national treatment of goods' standards is not applied where discrimination in favor of domestic goods takes place. Agricultural and food products are highly sensitive to such NTBs given their perishable nature. Moreover, and despite PAFTA members have eliminated tariffs completely in 2005, a number of PAFTA members have introduced new (sur)charges on traded goods on the borders. In addition, there are severe problems associated with inspection procedures which are viewed as lengthy and cumbersome.

7. Supply and demand side constraints facing trade in agriculture

On the demand side proliferation of NTBs, lack of uniform standards, and vague rules complemented by inefficient dispute settlement mechanism hinder the flourishing of agricultural intra Arab trade. On the supply side, the Arab countries suffer from weak logistics and trade facilitation mechanisms which are of paramount importance for agricultural and processed food trade. The domestic impediments include relatively high transport costs, reaching four times the international benchmarks. Such high transport costs arise from inefficiency in logistics and trade facilitation associated with longer transit times, high storage costs, longer dwell time, poor handling, etc. (Talks, 2013). It is worth mentioning that the existing literature (see Hoekman, 2014) confirm that such trade related impediments play a significant role in affecting the competiveness of firms and hence the trade performance of the whole country. Arab countries do not perform well in this regard, where the trade restrictiveness index (which count for NTBs and differentiate between agricultural and non-agricultural goods) reveal the humble performance of Arab countries in this regard (table 9). Table 9 shows that the extent of trade protection on Arab countries' side (their imports) as well as on their trading partners side (their exports) is significantly higher for agricultural products than manufactured ones due to supply side constraints (as red tape measures and modest infrastructure) as well as demand side constraints (as NTBs).

Table 9: Overall Trade Restrictiveness Index (OTRI) and Market Access Overall Trade Restrictiveness Index (MAOTRI) for Overall (ALL), Agricultural (AG) and Manufacturing (MF) trade (2009) of Arab Countries*

	OTRI			MAOTRI		
	ALL	*AG*	*MF*	*ALL*	*AG*	*MF*
United Arab Emirates	3.0%	3.8%	3.0%	5.1%	14.3%	4.7%
Bahrain	4.3%	6.8%	4.2%	3.1%	9.1%	3.0%
Djibouti	15.8%	11.8%	18.5%	14.2%	15.5%	11.8%
Algeria	32.6%	49.9%	29.7%	2.1%	42.8%	1.9%
Egypt	33.4%	44.0%	31.6%	12.1%	25.0%	10.3%
Iraq				0.4%	24.0%	0.3%
Jordan	22.3%	21.1%	22.6%	11.1%	16.1%	10.7%
Kuwait	3.8%	1.4%	4.1%	8.2%	0.1%	9.0%
Lebanon				5.0%	9.3%	4.3%
Libya				1.1%	44.2%	0.4%
Morocco	15.5%	60.2%	9.8%	18.3%	35.9%	12.1%
Mauritius	9.7%	27.0%	4.5%	24.5%	58.0%	14.3%
Oman	6.3%	38.7%	3.2%	3.0%	5.7%	2.9%
Qatar	3.9%	1.9%	4.0%	4.5%	1.6%	4.5%
Saudi Arabia	1.4%	1.8%	1.4%	2.4%	7.3%	2.3%
Sudan	44.1%	44.3%	44.1%	2.1%	28.4%	0.2%
Somalia				4.1%	4.3%	1.8%
Syria	6.7%	7.7%	6.4%	7.0%	18.1%	4.6%
Tunisia				12.0%	35.9%	9.9%
Yemen	4.6%	4.8%	4.5%	1.7%	14.6%	0.6%

*Indices based on applied tariffs
Source:http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:22574446~pagePK:64214825~piPK:64214943~theSitePK:469382,00.html

8. Arab intraregional trade agreements

Arab RTAs with the West suffer from several impediments affecting the market access of their exports in which they enjoy a comparative advantage due to the proliferation of NTBs, seasonal tariffs, minimum prices, tariff rate quotas (Talks, 2013). The initiation of Deep and Comprehensive Free Trade Agreements (DCFTAs) from the EU with some of the Arab countries following the Arab uprisings in 2011 (e.g. the DCFTA negotiations with Morocco was launched in 2013 but stopped based on Moroccan government demand in 2014, see Hoekman, 2016a) aims at deepening the existing Association Agreements by bringing the joining countries closer to the EU rules and regulations (e.g. SPS measures) which could have enhance the market access of related countries agricultural exports in the EU (Talks, 2013).
Moreover, EU and Egypt, within the context of their Association Agreement have agreed to fully liberalize

agricultural trade between them in 2010[13], which has had appositive impact on Egyptian exports market access to the EU. EU signed also a protocol on trade in agricultural products with Morocco in 2012 with the aim of bolstering trade in agricultural, yet as assessed by WTO (2016) Trade Policy Review for Morocco "However, this agricultural trade is still hampered by a whole array of measures such as threshold or minimum entry prices, seasonal restrictions according to domestic production, and other forms of quotas".

The existing RTAs between Arab countries on the one hand and the US and EU on the other hand point out that agriculture in general figures out to be sensitive and subject to several restrictions. EU is known for its protectionist common agricultural policy which has been extended to the concluded FTAs with Arab countries within the context of Barcelona Association Agreements. All kinds of restrictions have been applied ranging from quotas to tariff quotas to seasonal quotas, to price levies, etc. In fact, the majority of agricultural and processed agricultural products are excluded from full liberalization, which certainly have an impact on the flow of trade.

It is worth mentioning that few studies have identified that some of the Arab countries face restrictive SPS measures when exporting to the EU (e.g. Ghoneim, 2004; Mandour, 2006). There is a need to investigate whether such SPS measures perform as NTBs and affect exports flow from Arab countries to the EU or rather such SPS measures are genuine health standards that help to upgrade the quality of agricultural production in the Arab countries.

The case with US FTAs with Arab countries shows mix evidence. The US FTAs with Arab countries include several restrictions on agricultural liberalization. This has been evident in the case of US-Morocco FTA.

US-Morocco FTA

The US and Morocco extends the full liberalization of agriculture over a period of 18+ years where tariff phase-outs will take place over different time intervals (immediate, 5, 8, 10, 12, 15 and 18 years). Tariffs' removal follows specific linear and non-linear formulas and schedules are set on product specific basis. The Agreement establishes preferential TRQs for Morocco for a number of products including beef, dairy products, peanuts, cotton, tobacco, sugar and sugar-containing products, tomato products, tomato sauces, dried onions, and dried garlic. Under these TRQs, the imported (Moroccan) product receives a zero duty for a specific quantity that expands over the implementation period. Volumes imported over the specific amounts have higher tariffs. The higher tariffs are gradually eliminated over 15 years, except for sugar and sugar-containing products that have an 18-year phase-out period. Morocco applied similar restrictions on US agricultural imports and extended the period of liberalization for over 25 years in some products.

US-Jordan FTA

In the case of the US Jordan FTA, agriculture was treated almost as non-agricultural products where all tariffs and NTBs are to be eliminated over a 10 year period.

US-Bahrain FTA

In the case of US FTAs with Bahrain and Oman agricultural trade enjoyed more freedom. Under the Agreement with Bahrain, which covers all agricultural products, Bahrain will provide immediate duty-free access for US agricultural exports in 98% of agricultural tariff lines. The US will provide immediate duty-free access for 98% of Bahrain's current exports of agricultural products to the US. Both Bahrain and the US will phase out tariffs on the remaining products within ten years.

US-Oman FTA

In the case of FTA between US and Oman, agricultural provisions were more liberal. The Agreement covers all agricultural products. Oman will provide immediate duty free access for current US agricultural exports in 87% of agricultural tariff lines. The US will provide immediate duty-free access for 100% of Oman's current exports of agricultural products to the US. Both Oman and the US will phase out tariffs on the remaining products within ten years.

Such mixed evidence can be explained by the nature of the trade in agriculture between the US on the one hand and Arab countries on the other. The economic and geographic distances imply by nature of agricultural and food products which are perishable that US market is not a targeted market for Arab countries' exports. Hence, we observe the less sensitivity of the US with Arab countries, and especially the Gulf countries in comparison to the case of the EU agreements with Arab countries where the EU is a major destination of Arab exports.

Hence, if we focus on Arab intraregional trade agreements we observe that they suffer from vagueness in implementation. Besides, the absence of deep aspects of economic integration as full unification of standards and the system of its implementation and institutions associated with market economy monitoring as competition rules imply that PAFTA has been relatively preempted in regards to trade in agriculture. There have been efforts to overcome such problems, but they remain incomplete. For example, there have been efforts undertaken by the Arab Development of Industry and Metrology Organization (ADIMO) to unify standards. In fact 1400 standards have been approved to be harmonized, and a regional accreditation body (Arab Accreditation Cooperation, ARAC) which has international recognition has been created in 2011 and recognized by the LAS in 2015[14], as a serious step towards overcoming problems associated with standards and their diversity in theory and application among Arab countries. ARAC can help in addressing the NTBs associated with standards in the context of a well-established institutional setup by harmonizing standards or at least making mutual recognition agreements workable in reality. Yet till ARAC is able to fulfill its role in an efficient manner, Arab countries proceed with insisting on applying their national standards. In many cases, such national standards do not have a scientific rationale, are changed without any prior notice, and exercised in a protectionist attitude. In fact, such national standards or using the right technical term "regulations" are different from the "private standards" which are experiencing an increase and are developed and set by private companies, namely multinational retailers as chains of supermarkets[15].

Empirical evidence has shown that such standards neither act as a catalyst for agricultural exports of developing countries, nor hinder the exporting process (Schuster and Maertens, 2015), yet, enhancing the capacity of developing countries in terms associated with SPS associated with human capacity upgrading and associated infrastructure can help to achieve better trade performance (Chemnitz,

13 http://ec.europa.eu/trade/policy/countries-and-regions/countries/egypt/

14 ARAC was launched on June 12, 2011 to be the Arab Cooperation Accreditation Body for the planning, development and coordination of the accreditation infrastructure in the Arab region (22 Arab countries) to support inter/intra Arab trade, improve the competitiveness, provide trust in Arab goods and services and protect health and safety of the public and the environment. Following the 95th Ministerial Economic and Social Council meeting of the League of Arab States (LAS), held on 19th February 2015 in LAS headquarters, in Cairo, Egypt, the Ministerial Economic and Social Council has recognized ARAC as one of the main pillars of the Pan Arab quality infrastructure in supporting intra-regional trade and the Arab Customs Union requirements. See http://www.arac-accreditation.org/uploads/6444-ARAC%20Brochure_Eng.pdf

15 Such private standards set voluntary certification schemes. These schemes deal with health and hygiene, environmental protection, animal welfare, organoleptic qualities, fair trade, etc. See European Commission (2013).

2011). Moreover, there are serious problems associated with inspection procedures which are in many cases prolonged with any clear aim. Despite that there are talks on enhancing mutual recognition agreements, such agreements are still in their infancy and it is not foreseen how they are expected to perform. Finally, LAS (2008) and Hoekman (2016b) identified that although PAFTA eliminated all tariffs and NTBs, several Arab countries continue to apply quotas, extra charges, and surcharges especially in agricultural and agro-industrial products as oil, and meat.

Arab countries deal with such barriers as legitimate non-tariff measures (NTMs), but the abuse of applying such measures turns them to NTBs. What applies to PAFTA in this regard applies as well to other Arab-Arab RTAs and preferential trade agreements including Agadir and GCC. For example Ghoneim (2007) identified that GCC members suffer from agricultural subsidies provided by other GCC members and that the law governing subsidies within the GCC (Unified law for Antidumping and Countervailing Measures which was issued in 2005) does not deal with such issues. Moreover, the Trade Policy Reviews of the World Trade Organization reveal that GCC members continue to heavily subsidies their agricultural exports.

The case is different if we focus on prospects of agricultural intraregional trade between Arab countries and the West, where we find that agreements do not suffer from vagueness or proliferation of NTBs as in the case of intraregional trade among Arab countries. However, there is a need to understand how harmonization with major trading partners' standards which is currently taking place between Arab countries on the one hand and the EU and the US on the other hand is likely to affect the intra-Arab regional trade in agriculture. Moreover, such upgrading of standards entails costs on technical and financial basis which Arab countries cannot meet on their own, and such harmonization despite its positive impact on market access might not be enjoyed by small farmers. Hence SDG 7 is of great importance here in terms of upgrading the capacity of Arab countries to be able to meet the market access requirements of Western countries.

In connection with our conceptual framework, this section showed that the catalytic goals that can enable trade in agriculture to play an efficient role in achieving core SDGs are not in place. For example, the institutional setups are not in place (e.g. RTAs either suffer from vagueness or full of clear obstacles that hinder market access), and the infrastructure needed are modest (eg. problems associated with trade facilitation and port management). Moreover, the section revealed the remote goals are highly negatively affecting trade in agriculture (e.g. climate change, and water scarcity). Yet, the section also revealed that the dependence on trade in agriculture for Arab countries is indispensable mean to overcome challenges associated with food security since self-sufficiency rates are low and prospects for enhancing agriculture are limited. This implies that Arab countries should pursue the necessary efforts to enhance the role of trade in agriculture in achieving SDGs, provided that it is utilized within an efficient framework. Despite the fact that many variables can be hardly controlled as they are exogenous to the context of trade in agriculture policy making, yet several home grown policies can be efficiently managed to achieve their developmental objectives stated in the core SDGs.

In the context of our paper, enhancing trade in agriculture in Arab countries requires special attention to trade costs associated with inefficient logistics and trade facilitation mechanisms as well as home grown NTBs which deprive small farmers and private sector from being able to work on fair competition basis. Moreover, the market structure of agricultural products needs to be cured from market failures which again result in increasing trade costs and create some sort of anti-export bias. Finally, NTBs on the importing countries (whether Arab or non-Arab countries) should be dealt with in an efficient manner if trade in agriculture is to play an efficient role in achieving SDGs.

III. SDGs in Arab Countries' National Development Plans: An Overview

The aim of this section is to identify the status of Arab countries in achieving SDGs which are associated with trade in agriculture and which have been specified in Section One. We focus on national development plans in selected Arab countries and investigate the status of different SDGs and whether they were integrated in the national development plans or visions. This will be illustrative but cannot be comprehensive enough to cover all details in all Arab countries as some do not have national plans or cannot be implemented due to the specific conflict status of a particular country, e.g. Yemen[16]. Hence, the national plans will be complemented whenever possible with international and regional reports. Moreover, we link the SDGs to trade in agriculture and review whether emphasis has been put on it as an enabler to achieve such SDGs or not. Finally we highlight some of the challenges (remote SDGs) that can affect the ability of trade in agriculture to play its role in achieving core SDGs. Anecdotal evidence will be used in this section.

As argued in Section One, SDGs represent a continuation of MDGs, yet with more focus on the sustainability dimension while allowing more flexibility to be adapted to each country according to its own circumstances. In general, Arab countries have been assessed to have mixed performance regarding MDGs, whether we are focusing on the targets themselves or countries. Whereas a significant progress has been achieved regarding some targets (e.g. primary school enrolment and literacy as well as gender parity in education), other targets have lagged behind (e.g. those associated with hunger and food insecurity, and lack of access to water, lack of improved sanitation in rural areas, and child and maternal mortality) (ESCWA, 2014; LAS and UN, 2015). Such lagging indicators are highly associated with trade in agriculture as an enabler as well as the core, catalytic and, remote SDGs identified in our conceptual framework in Section One. Moreover, some countries have progressed positively regarding achieving MDGs (e.g. Gulf countries, Tunisia, and Egypt) whereas others have lagged behind (namely least developed Arab countries). Ironically, Tunisia and Egypt, despite having shown significant progress towards achieving MDGs, were among the countries where the Arab uprisings started. This indicates a "governance and participation deficit" as coined by ESCWA (2014), which are reflected in our catalytic SDGs.

Several Arab regional consultations took place on the post 2015 Agenda and reports were also released (for a review see ESCWA, 2014) indicating the consensus among Arab countries to go ahead with adopting and implementing SDGs. In relation to the scope of the paper, we emphasize the need of categorization of SDGs set in Section I to be able to identify and trace the role of trade in agriculture in achieving SDGs and whether its efficiency in performance is caused by factors associated with it or with the catalytic or remote SDGs. For example, the lack of fulfillment of MDG 8 (global partnership for development) which is now replaced by SDG 17 (revitalize the global partnership for sustainable development) where the target of increasing ODA to 0.7% of donor countries' GNI was not fulfilled could be a reason, or among the reasons why trade in agriculture among other enablers cannot be able to achieve the core SDGs. This implies that the failure to achieve a core SDG can be a result of inefficiency of another catalytic SDG using the terminology developed in our conceptual framework. We follow a thematic type of review of SDGs based on our SDGs' categorization identified in Section One and we trace how SDGs were raised in the national development plans and visions of Arab countries.

16 http://www.yemenwater.org/wp-content/uploads/2013/06/Vision2025.pdf

1. Core goal associated with poverty (SDG 1)

We identify at the outset that this goal does not have the same urgency in Arab countries due to the huge variations associated with the living standards in the region which incorporate countries among the lowest GDP per capita in the world as Yemen and those among the highest GDP per capita in the world as Qatar and United Arab Emirates. Reducing poverty and hence reporting on poverty is not quite a priority in the GCC countries, except for Saudi Arabia where 12.7% of the population live below the poverty line[17], and to a lesser extent Bahrain where 12.2% of the population live below 5 US dollars per day[18]. This is expected given the high living standards enjoyed by the citizens of those countries. Hence, Qatar National 2030 Vision and the Qatar National Strategy Plan (2011-2016)[19] have rarely mentioned the issue of poverty, with minor exceptions associated with the need of developing a relative national poverty line. United Arab Emirates does not have an official poverty line[20]. Yet, even in the case of Bahrain, tackling poverty was not mentioned among the goals of its Economic Vision 2030, despite the significant governmental efforts undertaken in this regard[21]. Also the Saudi Vision 2030 did not mention poverty as an issue to be tackled, but rather set increasing saving rate per household as percentage of household total income. In other non GCC countries, the issue of poverty gained more attention. In the case of Lebanon, there exist no integrated national strategy, hence we referred to a relatively recent report published by ESCWA (2015) on "The Sustainable Development Framework in Lebanon: A National Assessment"[22] which identified, despite the lack of data, the urgency of tackling such goal in Lebanon and pinpointed a number of programs undertaken by the government to identify the poor. The Sustainable Development Strategy, Egypt's Vision 2030[23] published by the Ministry of Planning and Administrative Reform, and Jordan 2025 A National Vision and Strategy[24] are among the most comprehensive national development strategies developed among the Arab countries. The Egypt Vision 2030 and Jordan 2025 Strategy have set the different dimensions, as well as policies, constraints and developed performance indicators to measure developments in achieving the developmental objectives. Among the important goals set in Egypt's Vison 2030 and Jordan 2025 Strategy was overcoming poverty issues and the Visions have included programs and projects to achieve this objective, but none was directly associated with trade in agriculture. The same applies for Morocco where its report Sustainable Development in Morocco: Achievements and Perspectives from Rio to Rio +20[25] only highlighted the importance of facing the poverty challenge.

2. Core goal associated with ending hunger (SDG 2)

Regarding core SDG2 and specifically the catalytic target 2.b associated with preventing trade restrictions associated with trade in agriculture, the case is different when compared to SDG 1 where we observe that food security is a concern for all Arab countries. For example, Qatar has identified that it aims to enhance its system of food security and has explicitly mentioned some of the supply side constraints as the lack of competition and cooling facilities associated with food imports[26]. Focus on this core SDG has been highly associated with food security in the national development visions and plans, but was rarely linked to trade in agriculture as an enabler as set in target 2.b. United Arab Emirates did not mention food security issues in its Vision 2021 National Agenda, but has started the necessary measures by improving supply chains, creating the necessary supply stocks[27], and establishing entities dealing with such issue. For example, the Food Security Centre-Abu Dhabi (FSCAD) was established by Abu Dhabi Executive Council in 2010 and has been tasked by ensuring food security for Abu Dhabi[28]. Saudi Vision 2030 did not tackle the issue of food security despite its importance, so as well other GCC countries with the exception of Qatar. In general and as a mean to achieve food security GCC countries have adopted low tariffs on agricultural goods[29] and shifting to agricultural investment abroad[30]. In the case of Lebanon and based on ESCWA (2015), the issue of food security surprisingly did not appear among the priority areas of the country. Jordan National Water Strategy 2016-2025 tackled the issue of food security from a water management perspective, so as well its national 2025 Strategy. Egypt's Vision 2030 has tackled the issue of food security and included projects that aim in meeting such challenge but the solutions suggested were mainly associated with upgrading the logistics infrastructure domestically. The food security was mentioned in the Moroccan Development Strategy but not with great emphasis.

3. Remote goal dealing with water management (SDG 6)

We observe that it has deserved a lot of attention in almost all Arab countries' national developmental visions and plans. It is highly associated with climate change (remote goal 13) as well as desertification and land degradation (remote goal 15) which represent major concerns in Arab countries.
In the case of Qatar National Development Vision 2030 and Qatar National Development Plan (2011-2016) such three issues have been heavily emphasized as three challenges that face the country and solutions were suggested including change of crop mix, application of more efficient methods of farming to increase agricultural productivity, save water, and reduce loss, but trade in agriculture was never mentioned as a way out.
United Arab Emirates Vision 2021 National Agenda has even gone further by establishing indicators on such goals. For example a water scarcity index was developed by the Ministry of energy which aims at is an indicator "that measures water overuse by monitoring fresh water usage (including surface water, renewable water and fossil water) as of overall renewable water in UAE. The result is weighted to take into account desalination and waste water treatment"[31]. As for climate change, the UAE has a ministry named Ministry of Climate Change and Environment indicating the importance of the issue in policy making and the political commitment to tackle challenges associated with climate change.
The Saudi Vision 2030 was surprisingly silent on water management issues. The 2008 decision of the government of Saudi Arabia to roll back the domestic support provided for wheat production and stopping it completely by end of 2015 is a clear example of undertaking the necessary actions to preserve water[32].
In the case of Lebanon and building on ESCWA (2015) water management is among the priorities of the government though not with high urgency as revealed from the report based on the National Water

17 https://english.alarabiya.net/en/business/economy/2013/11/03/Kingdom-has-tenth-lowest-poverty-rate-worldwide-says-World-Bank.html
18 http://www.bh.undp.org/content/bahrain/en/home/post-2015/mdgoverview/overview/mdg1.html
19 http://www.mdps.gov.qa/en/knowledge/HomePagePublications/Qatar_NDS_reprint_complete_lowres_16May.pdf
20 http://www.thepovertyline.net/uae/
21 http://www.bahrain.bh/wps/wcm/connect/38f53f2f-9ad6-423d-9c96-2dbf17810c94/Vision%2B2030%2BEnglish%2B%28low%2Bresolution%29.pdf?MOD=AJPERES
22 http://css.escwa.org.lb/SDPD/3572/Lebanon.pdf
23 http://www.mfa.gov.eg/SiteCollectionDocuments/SDS2030_English.pdf
24 http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/jordan/jo2025part1.pdf
25 https://sustainabledevelopment.un.org/content/documents/1010file.pdf
26 http://www.mdps.gov.qa/en/knowledge/HomePagePublications/Qatar_NDS_reprint_complete_lowres_16May.pdf
27 https://www.oxfordbusinessgroup.com/analysis/focus-food-security-gcc-nations-are-working-improve-logistics-and-supply-chains-well-secu-3
28 https://www.oxfordbusinessgroup.com/analysis/securing-supply-food-security-issue-and-government-and-private-sector-are-deploying-strategies
29 https://www.wto.org/english/tratop_e/tpr_e/s258_sum_e.pdf
30 http://www.oxfordbusinessgroup.com/news/saudi-arabia-focus-food-security
31 https://www.vision2021.ae/en/national-priority-areas/sustainable-environment-and-infrastructure
32 https://www.wto.org/english/tratop_e/tpr_e/s333_e.pdf

Strategy developed in 2010 by the Ministry of Energy and Water and approved by the Cabinet in 2012. In the case of Jordan, a separate sectoral strategy was developed by the Ministry of Water and Irrigation in 2016, namely National Water Strategy 2016-2025[33] where SDGs concerning water management and climate change were explicitly highlighted reflecting the urgency of the challenges. Yet linking such challenge to trade in agriculture remained absent.

Water management reserved a lot of attention in Egypt's Vision 2030 and was even extended to water security highlighting the transborder problems over the Nile water. Egypt's Vision 2030 also included several projects to face such challenge. The same is true for climate change and desertification and land degradation where they were highlighted in Egypt's Vision 2030, but again without direct link to trade in agriculture. The Moroccan Development Strategy put a lot of emphasis on water management, climate change, and desertification challenges. Moreover, it highlighted some of the projects aiming at facing such challenges.

4. Climate Change and Food Security[34]

Arab countries are highly vulnerable to the negative impact of climate change making the region the most highly vulnerable region in the world (UNEP, 2015; Sowers and Weinthal, 2010). The rise in average temperatures and fall in precipitation levels are likely to be larger than those estimated as a world average (UNEP, 2015; World Bank, 2011). The implications of scarcity of water will lead to soil degradation and further loss of existing arable land, which is already scarce. Hence, agriculture is expected to be seriously affected, with significant loss in crop yields and agriculture sector productivity. Such problems have been anticipated to lead to shrinking the agriculture sector participation in GDP and leading to its decline by 22.5% by 2030 (World Bank, 2010a). Water stress and higher temperatures will also threaten food security in the Arab region. For example, and by 2050, wheat yields might decline by 57% and potato yields are reduced by 30% in some Arab countries (World Bank, 2011). The reduction of yields on the global level is expected to drive prices up with unprecedented rates, which will exert extra pressure on food security in the Arab countries, given the fact that all of them are net food importers. As a result of global warming some studies have even estimated that crop yields in Syria are expected to decline by 15-20% by 2080 compared to their levels in 2000. In warmer countries as Egypt other effects are expected where several fruit species, such as olives, peaches and apples, are not likely to flower unless they are exposed to a minimum number of days of cold temperature, which will cause drastic threats to its food security (World Bank, 2010b).

33 http://www.mwi.gov.jo/sites/en-us/Hot%20Issues/Strategic%20Documents%20of%20%20The%20Water%20Sector/National%20Water%20Strategy(%202016-2025)-25.2.2016.pdf

34 The following two paragraphs depend heavily on Ghoneim, Ahmed Farouk and Nicolas Péridy (2012), " The Economic Costs of Climate Change in MENA countries: A Micro-Spatial Quantitative Assessment and a Survey of Policies", FEMISE Project n°34-03, available at http://www.femise.org

Box 2 elaborates on the challenges associated with water challenges in Morocco.

Box 2: Water Scarcity Challenges in Morocco

Morocco faces a growing challenge in the *water sector*. The main issues and constraints can be summarized as follows:

- The decline in available water resources; where the mean annual rainfall throughout Morocco under average seasonal conditions is estimated to total 150 billion cubic meters.
- The renewable water resources do not exceed 29 billion cubic meters (bcm). Taking into account potential storage sites and groundwater development possibilities only 20 BCM are divertible annually, 16 BCM from surface water and 4 bcm from groundwater.
- Some 103 large dams have been built increasing the storage capacity from 2.3 billion cubic meters in 1967 to 16 bcm in 2003. It has required a major investment spending estimated at 2.5% to 3% of the country's GDP or 18% of the public investments.
- Morocco is endowed with groundwater resources. Some 32 deep aquifers and more than 46 shallow ones scattered all over the country have been inventoried.
- Groundwater withdrawals have increased from I bcm in 1960 to 3.6 bcm in 2003.
- Some 11 bcm are now committed to agriculture, domestic and industrial uses.
- The sustainable upper limit or "carrying capacity" of water resources utilization will be approached by the year 2020 due to increase in population coupled with demands for high per capita domestic and industrial consumption.
- Per capita renewable water resources are expected to fall from 850 cubic meters to 410 cubic meters in 2020 when all renewable resources are projected to be mobilized.

Due to the aforementioned challenge, Morocco will be classified as *chronically water stressed* instead of being *water stressed* country. Water scarcity problem will be worsen by the rapid degradation of water quality, inadequate maintenance of existing infrastructure and silting of reservoirs, low level of potable water provision to rural population in addition to the low water use efficiency in irrigation.

Source: Barrio (2004).

5. Water management

The problem of water management is more acute in the Arab countries, relative to the rest of the world, which suffer from scarcity of water resources even in the absence of climate change problems. On average, Arab countries count for 7% of total world population whereas they acquire only 3% of water resources, and estimates for the future have expected a decline by 28% by 2030. The problem is further exacerbated by the disproportionate distribution of water resources within the Arab countries where rainfall is concentrated in few weeks in winter, frequent summer seasons face drought, and the regional distribution of water resources suffer from huge heterogeneity (Lahache, 2009). The projected increases in temperature during the irrigation season will significantly increase the demand for water which will cause an overall reduction in water availability. Also the increased demand for irrigation water will cause further stress on ground water resources (World Bank, 2010b). Moreover, there are specific problems associated with a number of countries. For example, in the case of Egypt, the sea level rise (SLR) is likely to intensify the water stress problem (El Raey, 2012). The 1 m SLR is expected to result in huge loss of GDP (estimated to be 6.5%) mainly associated with loss in agricultural GDP putting Egypt in the third rank worldwide likely to be negatively impacted by the SLR. Moreover, storm surge is expected to increase, which will further negatively affect the agricultural land and crops, where for example a reduction in the productivity of two major crops in Egypt: wheat and maize by 15% and 19% respectively by 2050 is expected (Ministry of State for Environmental Affairs, 2010). Jordan is

likely to suffer from more erratic rainfall patterns, reduced ground water availability, more frequent dust storms, and increased temperatures in the coming three decades. Such changes are likely to have a negative impact on agricultural productivity (especially barely grain yield) and sustainability. Sustainability is likely to be affected through two interrelated ways mainly through diminishing the long term ability of agroecosystems to provide food and fiber and by inducing shifts in agricultural regions that may encroach upon natural habitats, at the expense of floral and faunal diversity. Hence, such changes caused by climate change may encourage the expansion of agricultural activities into regions that are now occupied by natural ecosystems such as rangelands in the Badia region and forests (Khresat, 2009). In Syria water resources are highly limited resulting in classifying Syria as an arid or semi-arid country. The country is largely dependent on rain water. The total of surface water was estimated to approximately 10 billion m3, while the ground water amounted 5 billion m3. The average annual per capita share of water amounts to slightly over 1000 m3, a low figure compared to 7500 m3 at global level. The per capita share of water is expected to drop to 500 m3 in 2025. Due to persistent drought, population growth and the irrational use of hydrological resources, water availability is currently under pressure causing extra water stress (UNFCCC, 2010). Similar effects apply in other Arab countries, hence seriously threatening the agricultural sector.

In general, the increase in temperature and frequent occurrence of extreme events will reduce crop yield as well as cause changes in the agricultural distribution of crops. It will also negatively affect the marginal land and force farmers to abandon them hence increasing desertification and unemployment. The expected decrease in rainfall accompanied by coastal zone effects will have negative repercussions on the agriculture sector, especially when accompanied by the increased population growth rates which will divert water usages from agriculture to other consumption uses. This will create extra pressures on the governments of Arab countries to search for other water resources and import grain and food staples to satisfy the increasing need of food products (UNEP, 2015; Beshara, 2008).

6. Core and remote goal dealing with sustainable inclusive growth (SDG 8)

SDG 8 with targets 8.2 dealing with diversification, 8.3 dealing with creation of decent jobs, and 8.4 calling for more efficient methods in production and consumption, this goal has been highly stressed in all Arab countries' national developmental plans that we reviewed.
In fact, the issue of diversification of the economy and the need to shift from energy oriented economies in the case of the GCC countries has been the main theme of the National Developmental Plans with no exception including the 2035 Vision of New Kuwait[35], Qatar National Vision 2030, Economic Vision 2030 for Bahrain[36], Saudi Vision 2030, and UAE Vision 2021. Following the diversification goal, was creating decent jobs goal and then enhancing efficiency in production and consumption. Yet, none of the National Development Visions or Plans has linked such goal to trade in agriculture as a mean. It was also observed that policies to diversification were stated explicitly but indicators were rarely mentioned, with the exception of UAE Vision 2021 National Agenda which utilized a number of international organizations' indicators[37].

Diversification did not receive the same attention in none GCC countries' national developmental plans, probably as they have started diversification a long time ago before the GCC countries. Creating decent jobs was mentioned in some of the GCC countries' national development plans but was not highlighted as a major issue, but rather nationalization policy was devoted more attention. In Lebanon and building on ESCWA (2015) diversification was not even mentioned, yet employment was a major concern. Jordan Vision 2025 emphasized the need to boost the economy by setting specific targets to expand different sectors and adopting a cluster approach where industries are more integrated domestically as well as in the global value chain[38]. Egypt's Vision 2030 has also highlighted the issues of diversification and decent jobs but were not linked to trade in agriculture. The 5 years development plan of Tunisia (2016-2020)[39] and the Moroccan Development Strategy have also emphasized such aspects of diversification and creation of decent jobs, yet with no link to trade in agriculture.

7. Catalytic goal associated with infrastructure (SDG9)

We consider this goal as a major element in enhancing trade in agriculture especially in light of the supply side constraints explained in Section Two which hinder the development of trade in agriculture and increase its cost in the Arab region. The review of the National Development Plans and Visions in the GCC countries identified that such goal is highly paid attention to as a mean to achieve diversification as in the case of Qatar and United Arab Emirates, and in some cases specifically to address food security issues as in the case of Qatar. In other Arab non GCC countries, the upgrading of infrastructure in general received higher attention and it was identified that there is an urgent need to improve the quality of existing infrastructure as well as the completing the missing infrastructure projects and improving the institutional setup governing them. For example, Jordan 2025 Strategy emphasized the need to upgrade infrastructure for trade facilitation issues.

8. Remote goal associated with inequality (SDG 10)

Inequality is a sensitive topic in some of the Arab countries due to the political setup. However, it remains an evident problem, where for example in the case of Bahrain the richest 20% of the population own 41.6% of the total income earned[40]. Hence, we have not observed that it was mentioned in any of the GCC countries' developmental plans and visions reviewed. In some cases as in the case of UAE Vision 2021 it was mentioned that among the goals is to ensure the access of all citizens to public services, so as well as been the case of Bahrain 2030 Economic Vision and Qatar National Vision 2030. Outside GCC, Egypt's vision 2030 has highlighted the issue of inequality and set programs and projects to overcome different types of inequalities (rural/urban, rich/poor, upper Egypt/lower Egypt). The regional disparities have also received higher attention in the five year development plan of Tunisia (2016-2020).

9. Remote goal associated with sustainable production and consumption patterns (SDG 12)

Regarding, sustainable production and consumption patterns and specifically reducing food waste, we observe that most of the GCC development plans have not explicitly mentioned it, with the exception of UAE Vision 2021 and Qatar National Vision 2030 where some goals and policies associated with reducing food waste have been highlighted. It is expected that this goal does not evidently appears as it is highly associated with other goals and has been probably embedded in them when such

35 http://www.arabianbusiness.com/kuwait-launches-new-plan-transform-economy-by-2035-661652.html

36 http://www.bahrain.bh/wps/wcm/connect/38f53f2f-9ad6-423d-9c96-2dbf17810c94/Vision%2B2030%2BEnglish%2B%28low%2Bresolution%29.pdf?MOD=AJPERES

37 https://www.vision2021.ae/en/national-priority-areas/competitive-knowledge-economy

38 https://www.oxfordbusinessgroup.com/analysis/new-vision-government-introduces-10-year-economic-development-plan-0

39 http://allafrica.com/stories/201509110836.html

40 http://www.bh.undp.org/content/bahrain/en/home/post-2015/mdgoverview/overview/mdg1.html

national strategies were set. ESCWA (2015) in the case of Lebanon has highlighted the issue of waste management as a priority. Egypt's Vision 2030 has also tackled the issue of waste management from an environmental perspective, whereas Moroccan Development Strategy has tackled it from an energy perspective.

10. Catalytic goal associated with governance (SDG 16)

We observe that all countries have included different governance issues in all their national plans reviewed. However, by nature such governance goals remained broad and hence were differently and loosely articulated in the national developmental plans with certainly no specific link to trade in agriculture. The mechanisms for achieving such goal were in the majority programs and projects supported by the concerned government, but indicators were difficult to include, unless set implicitly (e.g. reaching XX% of automation and electronic communication as a mean to reduce interaction between humans which could result in red tape measures and corruption). But it is also important to pinpoint that Arab countries never emphasized in their national plans the issue of participating effectively on global levels to address issues of their concern.

11. Catalytic goal dealing with global partnership (SDG 17)

This goal is not expected by any means to appear in the national developmental plans as they rather target the developed countries to help developing countries through means of finance, investment, and trade. ESCWA (2015) identified this goal as an important element for Lebanon, and perhaps this was the only Arab country where such goal was heavily emphasized.

The review of national developmental plans and visions has revealed that several SDGs have been taken into consideration by the Arab governments when developing their own developmental perspectives. The plans and visions reviewed differed significantly in scope, size, level of details, and orientation, and hence it is expected that emphasis on SDGs and level of details associated with each SDG is not the same. Yet, what can be concluded from this review is that Arab countries have not thought of linking trade in agriculture to achieving SDGs. In fact, trade in general was rarely thought of as a mean to help countries achieve SDGs. Moreover, there are a number of constraints that have not been well articulated in the national plans and can affect our thinking of how trade in agriculture can help achieve SDGs, namely climate change, water management, and desertification.

IV. Proposing a Regional Platform of Action

On the one hand, Section Two revealed the status of trade in agriculture in the Arab region. In theory, or as revealed by the different RTAs that Arab countries are engaged in, trade in agriculture does not seem to face a lot of impediments. However, in reality, and as revealed by the status of implementation of PAFTA, and other RTAs that Arab countries are engaged in, trade in agriculture seems to suffer from several NTBs. A number of such NTBs are home grown arising from weak logistics, modest related infrastructure, and poor management of port related services.

On the other hand, Section Three revealed that SDGs are incorporated in the national development plans and visions of the Arab countries. The level of coverage, extent of details, and availability of indicators to measure performance differ from one country to another, but at least a number of Arab countries have been even explicitly mentioned SDGs in their national development plans and visions. Yet, the link between trade in agriculture and SDGs failed completely to be present in any of the reviewed national development plans and visions. In fact, trade in general did not play its expected role as an engine for growth and development. The mercantilistic view of enhancing exports was the dominant view whenever trade was mentioned. Yet, some Arab countries as UAE and Egypt, have pinpointed the importance of efficient logistics in their national development plans and visions. Moreover, such national development plans and visions hinted towards the challenges associated with food security, water management, and climate change, but did not explicitly reveal the threats associated with such challenges.

Based on the aforementioned review and analysis undertaken we can identify a number of gaps.

- First, trade in agriculture suffers from lack of monitoring of its performance in the Arab world, and there is no information on linking its performance to the reasons that can stand behind such performance.
- Second, there exist no studies that have tried to link trade in agriculture to different developmental objectives. Most of the studies have focused on trade in agriculture per se.
- Third, the link between SDGs and trade in agriculture needs to be more focused and studies on linking each of the identified SDGs in Section One and trade in agriculture deserves separate studies by themselves for each country.
- Fourth, the challenges associated with SDGs and trade in agriculture are voluminous and regional coordination can help to better tackle some of such challenges in more efficient way and less costly means.
- Fifth, the analysis has shown that due to the broad concepts and several dimensions associated with trade in agriculture and SDG, it would be better in the context of this paper to suggest some indicators that can help verify the relationship and/or measure the effect of trade in agriculture on achieving such SDGs.

1. Suggested indicators linking trade in agriculture to the core, catalytic, and remote SDGs

We suggest the following indicators that link trade in agriculture to the core, catalytic, and remote SDGs identified in Section One. Such indicators can be adopted by UNDP to monitor the role of trade in agriculture in achieving SDGs, provided that information are made available from the different countries or data are collected from other sister organizations on frequent basis. Some of the indicators

suggested are directly associated with trade in agriculture, whereas other can help the decision maker when deciding on an issue related but is not directly associated with trade in agriculture. the suggested indicators are adapted from the Report of the Inter-agency and Expert Group on Sustainable Development Goal Indicators adopted by ECOSCO, LAS in June 2016 as well as Annex III of the Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators (E/CN.3/2017/2) and agreed upon, including refinements on several indicators, at the 48th session of the United Nations Statistical Commission held in March 2017. They are complemented by the related indicators written in Italics.

SDG or Target	**Type of SDG or Target**	**Suggested Indicator**	**Relationship or Effect**	**Data Needed**
SDG 1 (end poverty)	Core	Percentage of food imports to total food consumption in relationship to food inflation *Proportion of population below the* *international poverty line, by sex, age, employment* *status and geographical location (urban/rural)*	Investigating whether food imports help to reduce domestic food inflation rates	National sources
SDG 2 (end hunger, achieve food security and improved nutrition and promote sustainable agriculture)	Core	Structure of food imports (including calories intake for each product) and comparison with necessary diet intake needed for healthy nutrition	Investigating whether food imports help to achieve food security objectives	National sources and FAO
Target 2.b (Correct and prevent trade restrictions and distortions in world agricultural markets)	Catalytic	Top 10 exports of each country and calculating applied tariffs, quotas, and domestic support measures in major importing countries *Agricultural export subsidies*	Identifying to what extent trade restrictions in major importing countries affect exports of interest to Arab countries	National sources and WTO

SDG 6 (Ensure availability and sustainable management of water…)	Remote	Water needs of first five major produced, exported, and imported crops *Change in water-use efficiency over time*	Identifying whether a country is managing water in line with its agricultural and food needs or not	National sources
Target 6.4 (water efficiency)	Remote	Tracing water usage for each five major produced, exported, and imported crops while adjusting for new technologies or methods of production *Level of water stress: freshwater withdrawal as* *a proportion of available freshwater resources*	Calculating whether a country has saved water or not over time	National sources
Target 6.5 (integrated water resources management including transboundary cooperation)	Remote	Number of joint regional and transboundary projects aiming at better water management and amount of saving in water *Proportion of transboundary basin area with an* *operational arrangement for water cooperation*	Investigating the impact of joint cooperation	National sources
Target 6.6 (protect and restore water related ecosystems..)	Remote	Domestic projects and programs initiated and implemented *Change in the extent of water-related ecosystems over time*	Tracing the projects of water management	National sources
Target 6.a (expand international cooperation and capacity building…)	Remote	Identifying the number and type of projects undertaken with foreign support and the type of support provided (technical and financial) *Amount of water- and sanitation-related* *official development assistance that is part of a* *government-coordinated spending plan*	Standing on the extent of foreign help and its terms	National sources
Target 6.b (support and strengthen the participation of local communities in water management)	Remote	Identifying if there exist any means of whether local communities are consulted in water management projects on local levels *Proportion of local administrative units with established and*	Standing on applying good governance	National sources

SDG 8 (promote sustained and inclusive economic growth, full and productive employment, and decent work for all)	Core and remote	Production/labor elasticity for each of the five major crops produced, exported, and imported	Job creation ability of each major crop	National sources
Target 8.2 (higher level of economic productivity through diversification..)	Core and remote	Diversification Index for agricultural production, exports, and imports	Extent of diversification over time	UNCTAD
Target 8.3 (support productive activities, decent job creation,..)	Core and remote	Number of jobs created per hectare in different parts within the country for major five crops while controlling for size of farm (direct and if possible indirect), tourism industry literature can help in this regard	Type and number of jobs created	National sources
Target 8.4 (improve resource efficiency in consumption and production..)	Core and remote	Tracing development of inputs per hectare of major five crops and productivity of hectare simultaneously over years	Standing on efficiency on input and output sides	National sources
Target 8.5 (full and productive employment and decent work for all)	Core and remote	Same as 8.3	Same as 8.3	National sources
Target 8.a (Increase Aid for Trade..)	Core and remote	Number and value of aid projects directed to trade in agriculture	Standing on international support	National sources

SDG 9 (Build resilient infrastructure..)	Catalytic	Tracing the quality and quantity of related infrastructure to trade in agriculture (ports, labs, roads, electronic interchange)	Standing on status of supporting infrastructure	World Economic Forum and national sources
Target 9.1 (develop quality, reliable, sustainable, and resilient infrastructure including regional and trans border infrastructure..)	Catalytic	Same as SDG 9 but with focus on regional projects	Focusing on regional projects	National sources
Target 9.a (facilitate sustainable and resilient infrastructure..)	Catalytic	Amount and type of international support devoted to infrastructure projects *Total official international support (official development assistance plus other official flows) to infrastructure*	Standing on international support	National sources
SDG 10 (reduce inequality within and among countries)	Core	Tracing the income development of rural population in comparison to urban population while segmenting if possible through surveys farmers who produce crops that are traded	Measuring the gap in income	National sources
Target 10.1 (achieve and sustain income growth of bottom 40% of population)	Core	Same as SDG 10	Same as SDG 10	National sources

Target 10.2 (empower and promote social, economic, and political inclusion of all..)	Core	Same as SDG 10	Same as SDG 10	National sources
Target 10.3 ((ensure equal opportunity and reduce inequalities of outcome..)	Core	Same as SDG 10	Same as SDG 10	National sources
Target 10.a (implement principle of Special and Differential Treatment for developing countries..)	Core	Reporting incidents of violation to S&D treatment in issues related to trade in agriculture to a regional focal point *Proportion of tariff lines applied to imports* *from least developed countries and developing* *countries with zero-tariff*	Identifying discrimination against Arab agricultural exports	National sources
SDG 12 (Ensure sustainable consumption and production patterns)	Remote	Global food loss index *Number of countries with sustainable consumption and production (SCP) national action plans or SCP mainstreamed as a priority or a target into national policies*	Identifying the extent of loss in food and agricultural products in Arab countries	FAO
Target 12.1 (developing capabilities of developing countries)	Remote	Same as SDG 12	Same as SDG 12	FAO
Target 12.2 (sustainable management and efficient use of natural resources)	Remote	Same as SDG 12	Same as SDG 12	FAO
Target 12.3 (reduce food losses along production and supply chains..)	Remote	Same as SDG 12	Same as SDG 12	FAO
Target 12.a (support developing countries to strengthen their scientific and technological capacity..)	Remote	Amount and type of international support devoted to food, land, and agricultural produce loss projects *Amount of support to developing countries on research and development for sustainable consumption and production and environmentally sound technologies*	Standing on extent of international support provided	National sources
SDG 13 (Urgent action to combat climate change and its impacts)	Remote	Number and size of farms and type of crops likely to affected by climate change	Identifying the effect of climate change on agriculture	National sources
Target 13.1 (strengthen resilience and adaptive capacity..)	Remote	Number and type of adaptive measures taken by each Arab country	Standing on efforts undertaken	National sources

Target 13.2 (integrate climate change measures into national policies, strategies, and planning)	Remote	Tracing adaptive and mitigation measures to climate change *Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)*	Standing on efforts undertaken	National sources
Target 13.3 (improve education, awareness raising and …)	Remote	Tracing the inclusion of climate change curricula in schools *Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary*	Standing on enhancing awareness	National sources

Target 13.a (implement the commitment undertaken by developed country parties..)	Remote	Amount and type of international support devoted to climate change projects *Mobilized amount of United States dollars per year between 2020 and 2025 accountable towards the $100 billion commitment*	Standing on extent of international support provided	National sources
Target 13.b (promote mechanisms for raising capacity for climate change related planning...)	Remote	Identifying educational and raising awareness projects on climate change *Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities*	Standing on enhancing awareness	National sources

SDG 15 (combat desertification…and reverse land degradation...)	Remote	Size of desertification and land degradation while focusing on agricultural land over time	Identifying the extent of problem over time	National sources
Target 15.3 (combat desertification…and reverse land degradation.)	Remote	Number and type of measures undertaken by each Arab country *Proportion of land that is degraded over total land area*	Standing on efforts undertaken	National sources
SDG 16 (promote peaceful and inclusive societies for sustainable development…accountable and inclusive institutions at all levels)	Catalytic	Type and number of institutions (including laws and organizations) that ensure sharing farmers in policy making and decision taking	Standing on the extent of farmers' participation in decision process	National sources
Target 16.5 (substantially reduce corruption…)	Catalytic	National surveys to identify purchasing of fixed price inputs from black market	Proxy for extent of corruption	National sources
Target 16.6 (develop effective, accountable and transparent institutions at all levels)	Catalytic	As SDG 16	Standing on the extent of farmers' participation in decision process	National sources
Target 16.7 (ensure responsive, inclusive, participatory and representative decision making at all levels)	Catalytic	As SDG 16	Standing on the extent of farmers' participation in decision process	National sources

Target 16.8 (broaden and strengthen the participation of developing countries in the institutions of global governance)	Catalytic	Representation of Arab countries in committees related to trade in Agriculture *Proportion of members and voting rights of developing countries in international organizations*	Standing on the extent of Arab countries' participation in global decision making	WTO and national sources
SDG 17 (Strengthen the means of implementation and revitalize the Global Partnership for Sustainable development)	Catalytic	Amount and type of aid provided to trade in agriculture projects	Standing on the extent of foreign help and its terms	National sources
Target 17.10 (promote a universal, rules, based, open…)	Catalytic	Top 10 exports of each country and calculating applied tariffs, quotas, and domestic support measures in major importing countries	Identifying to what extent trade restrictions in major importing countries affect exports of interest to Arab countries	National sources and WTO
Target 17.11 (significantly increase the exports of developing countries...)	Catalytic	Same as Target 17.10 *Developing countries' and least developed countries' share of global exports*	Same as Target 17.10	National sources and WTO

Target 17.12 (realize timely implementation of duty free and quota free access...)	Catalytic	Same as Target 17.10 *Average tariffs faced by developing countries, least developed countries and small island developing States*	Same as Target 17.10	National sources and WTO
Target 17.13 (enhance global macroeconomic stability...)	Catalytic	Difficult to handle at country level *Macroeconomic Dashboard*		
Target 17.14 (enhance policy coherence...)	Catalytic	Difficult to assess in relationship to trade in agriculture		
Target 17.15 (respect each country's policy space...)	Catalytic	Difficult to assess in relationship to trade in agriculture		

Enhancing trade in agriculture in the Arab context requires special attention to trade costs associated with inefficient logistics and trade facilitation mechanisms as well as home grown NTBs which deprive small farmers and private sector from being able to work on fair competition basis. Though such indicators have no room in the aforementioned table, yet they are of crucial importance, and building a database on the regional level tackling NTBs affecting agricultural trade, might be thought of. Further, the domestic market structure of agricultural products and the extent of engagement of small farmers in the value chains of food production need to be devoted specific national studies to stand on the hidden reasons that can be behind trade in agriculture playing an effective role in achieving the core SDGs.

V. Conclusion and Policy Recommendations

The paper identified that trade in agriculture in the Arab region faces several challenges of its own that prevent it from fully enjoying its potential as a mean to achieve SDGs. Several problems associated with proliferation of home grown NTBs, lack of modern related infrastructure (atomization, port services, trade facilitation measures), and modest agricultural productivity, hinder trade in agriculture from undertaking its role. Moreover, several exogenous factors as climate change, land degradation, desertification, etc add another layer of challenges concerning the agriculture sector and hence add additional burden on the role that can be played by trade in agriculture. SDGs remain broad in coverage which make their link with trade in agriculture not straightforward. In many cases SDGs interact with trade in agriculture from more than one dimension making the relationship between them a complex process. This paper has tried to figure out such dimensions and has elaborated on the nature and direction of causality between trade in agriculture and SDGs. Using some type of discretionary distinction between SDGs in terms of their relationship with trade in agriculture the paper the paper classified SDGs accordingly.

The paper has also elaborated on the extent of integrating SDGs in the national development strategies and visions of Arab countries in light of information available. The review of the development plans and visions has shown that Arab countries have incorporated most of the related SDGs in their national development plans and visions, yet with different degrees of urgency according to each country own circumstances. However, it was also pointed out that trade in general and trade in agriculture in specific did not deserve the expected attention in such plans and visions whether as an issue per se or as a tool to achieve developmental goals.

It is worth noting that several SDGs as well as the effectiveness of trade in agriculture could be better addressed on the regional level, where joint projects can help minimize costs and expedite the national efforts. The paper within this context suggested some indicators that can help link trade in agriculture to SDGs. Most of the indicators require data that if some sort of collective regional effort is undertaken to collect them can help inform decision makers on how to better achieve SDGs on national and regional basis. The paper also highlighted the financial and technical gaps where Arab countries would need help with to better achieve SDGs using trade in agriculture as a tool.

Trade in agriculture, and mainly intra Arab regional trade in agriculture, cannot be burdened alone with solving the challenges associated with food security and self-sufficiency (for a similar argument see Woertz, 2011). Water scarcity, limited arable land, and climate change conditions are all exogenous factors that hinder agriculture in general and intraregional agricultural trade in specific from attaining this goal. Yet, cooperation and enhancing trade among Arab countries can improve the status of food security by adopting measures that reduce waste and increase productivity, and reduce trade costs whether home grown or in other neighboring countries.

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