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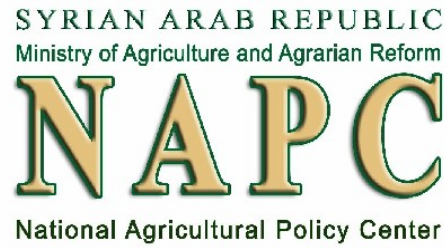
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# **The Impact of Syria's Accession to the WTO on Agricultural Sector**

Mahmoud Babili (editor),  
Amer Sleman, Somar Farfour

**Damascus, May, 2012**



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## Forward

This publication is the first study that examines the possible impacts of Syria's accession to the WTO on Syrian agricultural sector, and particularly the agricultural trade. Mahmoud Babili has written the research as well as the analytical chapters of the study. He has also edited the study as a whole. Amer Sleman has written the introductory chapters, and Somar Farfour has contributed in writing the section about special safeguard mechanism. The study was written originally in Arabic, and was translated into English by Mahmud Babili. The study team would like to thank each of Mr. Basheer Al hamwi, Chief of Trade Division in the National Agricultural Policy Center (NAPC); Mr. Haytham Al ashkar, the Scientific Director Deputy of the center; and Mr. Hamzeh Ismail, Director of the Center for their revision and comments on the study.



## **Abbreviations and acronyms**

WTO: World Trade Organization  
SPS: Sanitary and Phytosanitary Measures  
TBT: Technical Barriers to Trade  
IPRs: Intellectual Property Rights  
GATT: General Agreement on Trade and Tariff  
LDCs: Least Developed Countries  
TRIPS: Trade-Related Aspects of Intellectual Property Rights  
AMS: Aggregate Measures of Support  
NTBs: Non-Trade Barriers  
AoA: Agreement of Agriculture  
SSM: Special Safeguards Mechanism  
NAPC: National Agricultural Policy Center  
AA: association Agreement  
EU: European Union  
GDP: Gross Domestic Production  
SPC: State Planning Commission  
FTAs: Free Trade Agreements  
BTs: Bio Techniques  
GAFTA: Great Arab Free Trade Area  
MAAR: Ministry of Agriculture and Agrarian Reform  
CBS: Central Bureau of Statistics  
WITS: World Trade Integrated Solutions  
SMART: Single Market Partial Equilibrium Simulation Tool  
RTAs: Regional Trade Agreements  
RCA: Revealed Comparative Advantage  
UAE: United Arab Emirates  
USA: United States of America  
UNCTAD: United Nations Conference on Trade and Development





# Abstract

- The study's objective: investigating the various possible impacts of Syria's accession to the WTO on Syrian agricultural markets by simulation method, using partial equilibrium model.
- The outline:
  - Introduction about the WTO
  - Advantages and disadvantages of the WTO accession
  - The commitments and rights in the Agreement of Agriculture
  - Syria and the WTO Accession
  - Syrian Economy – Agricultural sector
  - Trade policies in Syria
  - Agricultural trade policies
  - Syrian trade developments
  - Syrian Agricultural trade developments
  - The research
  - Methodology
  - Analysis
  - Impacts on exports
  - Discussions on the results
  - Conclusions



# Chapter 1: Theoretical part

## 1. Introduction about the WTO

World Trade Organization (WTO) is the international body that deals with trade rules governing trader countries. The WTO establishment's agreement comprises the agreements that were negotiated and signed by member countries. The organization was "born" at 1/1/1995, yet the General Agreement on Trade and Tariff (GATT) launched trade governing rules since 1947.

### 1.1 Standard measures to join the WTO

Submitting huge amount of detailed information through "standard forms" that include a description of economic and social policies

Information about applied tariff system

A copy of laws related to trade facilitation or those represent trade barriers

Information about agricultural support (AT/ACC/4)

Measures of SPS and TBT (WT/ACC/8)

Measures of protecting IPRs.

### 1.2 Phases of WTO accession

First phase: contains the primary standard measures to join the WTO, where the information submitted by the acceding country are being examined by WTO member countries that decided to participate in the working party dedicated for the accession of the applicant country, as mentioned in article 12 (working parties include member countries that have trade interests in the acceding country's trade).

Second phase: the countries in the working party submit a number of written questions to the applicant country in order to have more information and clarifications, where the applicant country must send back written answers to these questions, and answer additional questions in the working party's meetings.

Third phase: comprises bilateral negotiations with the working party's member countries on market access facilitations. The negotiations are to be run on the basis of the "primary offer" covering market access and addressing the levels of agricultural domestic support and export subsidies; the primary offer is to be submitted by the acceding country.

Forth phase: involves drafting the various documents that consolidate the additional commitments of the applicant country, including the agreements to achieve the harmony among national legislatives and laws on the one hand and WTO rules on the other hand. The documents include tables of concessions and commitments as well as the working party's report and the organization decision on the accession request, beside the accession protocol.

Joining the WTO would consume undefined period (about 10 years on average), where the main determinant in terms of the period length is the applied strategy of the applicant country. The notable features of an accession strategy could be:

- Some countries seek quick accession, thus they are ready to do whatever they are asked to do, in order to facilitate the accession process.

- The accession process for some countries could be slow due to lack of human or financial resources needed for running the process, which demands a lot of resources (the applicant country can ask WTO secretariat for financial and technical assistant).
- The accession process for some countries could be slow due to the fact that they are satisfied with their current policies and they want to shrink the changes may be requested in charge of WTO membership (as in Syria).

### **1.3 The organizing rules for the accession process**

Establishing working party for investigating facts

The applicant country submits a request to the general director, as indicated in article 12. The general council considers the request and establishes a working party. The working party's tasks include examining the request to join the WTO as mentioned in article 12 and reporting its recommendation to the general council/ministerial conference (any member country can join the working party). The working party is to be headed by a chairman. The chairman is to be chosen through the consultations between WTO member countries and the applicant country.

As mentioned in article 12, the accession process requires examining the foreign trade system; therefore, after the formulation of the working party, the applicant country should present a memorandum that contains detailed description for its foreign trade system, accompanied with information about its applied custom tariff system and copies of related laws and legislations. The document should be written in one of three formal languages in the organization (English, French, or Spanish). In addition, the applicant country should present relevant statistics to be circulated to all member countries.

The memorandum should particularly include:

- Trade flows statistics
- Main economic indicators
- Import licensing procedures
- Executing and administrating custom valuation agreement

The general secretariat office is responsible for verifying the harmony between the memorandum and the general application, and then it informs the applicant country as well as the working party with the results.

Simultaneously, the applicant country submits a copy of its current custom tariffs, which should be prepared in the form of harmonized system, as well as currently applied legislations that should be modified according to the WTO's requirements to the working party's members. As respected procedures imply, the applicant country send full comprehensive copy of laws and legislations to the general secretary (where, if it is not too long, it should be translated into one of the formal languages). Occasionally, the general secretary assists the applicant country in terms of technical preparing of the memorandum.

After circulating the memorandum, the working party's members introduce their questions related to it in order to achieve further information about the trading system of the applicant country.

At the end of the working party's first meeting, or any next meeting, the chairman summarizes the coming steps needed for next meetings. Thus, more exchanges of written questions, answers and additional information documents take place.

In case of least developed countries (LDCs) and small economies' countries (SEs), technical assistant is being offered by general secretary in each phase of the accessions' phases.

#### *1.3.1 Bilateral negotiations*

When an advanced and proper stage of exploring foreign trade system is reached, working party's members and the applicant country launched bilateral negotiations on market accession for commodities

and services, and other conditions of the accession. The stage of negotiations interferes with the task of investigating facts about external trade system, where both of them occur in parallel with the other.

Market access negotiations form the most critical component in the process of WTO accession, where member countries require the applicant countries to offer concessions similar to those they enjoy in member countries' markets. The negotiations could be complicated, and market access commitments resulted from the WTO accession can be considered as the price of the "ticket" to join the WTO.

The outline of bilateral negotiations can be summarized as follows:

- Either the concerned member countries present their demands then the applicant country introduces their primary offers' tables.
- Or the applicant country produces draft of concessions and commitments to serve as a basis for negotiations. In both cases, the negotiations are conducted bilaterally.

In general, member countries expect the proposal of applicant country to be relevant in terms of trade and reflect the common advantages that the applicant country expect to achieve through the membership. After finishing the bilateral negotiations among concerned member countries and the applicant country, it is time for designing the tables of concessions and commitments supposed to be reviewed multilaterally, and attaching the protocol's draft as an unignorable part of the package. The accession protocol includes terms of accessions that were agreed on by the applicant country and working party's member countries. After finalizing the report and the protocol draft, as well as tables of negotiated commodities and services, the working party submits the whole package to the general council/ministerial conference to be approved. In case two third of member countries vote with yes for the agreement, it will be considered legal and approved by the general council/ministerial conference. Sometimes the parliament of the acceding country or its legislative council ratifies the agreement before finalizing the membership process. The acceding country becomes a WTO member 30 days after approving the package in the organization.

#### **1.4 The advantages and disadvantages of WTO accession:**

Advantages:

- The international trade agreements offer wider opportunities for accessing international markets in terms of both commodities and services.
- The agreements and their rules create a trading atmosphere that allows for the existence of reasonable amount of trade expectations, which helps for preparing marketing and exporting plans.
- Reviewing trade policies enables for permanent transparency in member countries' trade policies, which guarantees strict execution for rules with all parties, with a special mechanism implying predetermined procedures in case of rules unabiding.
- The agreements of Uruguay Round form a starting point for the multilateral trading system, thus the organization serves as a forum for future negotiations, which all countries must take part in.
- Special and deferential treatment for developing countries.

Disadvantages:

- losing independence in terms of designing national intervention policies.
- The very high costs of policy modifications to achieve harmonization with WTO rules
- The TRIPS agreement imposes higher protection for the IPRs than was prevailing previously, which can increase the financial burden for registering these IPRs (this negative impact is not restricted to the member countries only).

#### **1.5 The agreement of Agriculture:**

The aim of the agreement of Agriculture is to move gradually towards full liberalization of agricultural commodities' trade.

The idea is that international market's forces should be responsible for governing the global model for agricultural production and trade, with lowest level of state intervention.

There are three pillars for the Agreement of Agriculture:

- Domestic support
- Market access
- Export subsidies

That is, the commitments in the agreement demands increasing the facilitations that allow for market access and reduce the expenditure on each of domestic support and export subsidies.

The goals of agricultural negotiations:

- Enhancing the opportunities of market access through reducing tariffs, and reducing or eliminating NTBs.
- Enhancing the competition circumstances through the establishment of international disciplines for applying SPS measures on trade of commodities.

#### *1.5.1 The rules of Uruguay Round regarding domestic support:*

The agreement confirmed that all kinds of agricultural commodities' domestic support should abide to general organizing rules; the agreement included two kinds of commitments:

- Qualitative commitments: this package identifies a definition for domestic support policies that are excluded from reduction commitments.
- Quantitative commitments: this package identifies table of commitments related to agricultural products' support reduction

Three kinds of domestic support (boxes) were agreed on:

- Amber box: it includes producers' payments as well as other forms of domestic support that should be reduced (and not eliminated) by the government.
- Blue box: it includes direct payments in case these payments are linked to production-limiting programmes and built upon defined time base.
- Green box: subsidies included in the green box are those supposed not to distort trade, or at most they cause minimum harm.

The method to prepare domestic support commitments are viewed in the document titled "the modalities", and some parts of it are shown in annexes 3 and 4. The "modalities" implies a reduction of 20% (13.3% for developing countries and zero for LDCs) of AMS applied during the time base, provided with the sectioning reduction (annual dividend).

The administrative support for agricultural producers contains the following items:

Total support = Production/trade distorting support (AMS) above the de minimis level + de minimis support + Special & Differential Treatment support + Production-limiting support (the Blue Box) + Green Box support

#### *1.5.2 Uruguay rules concerning market access:*

The rules include the following:

- Regarding agricultural commodities, NTBs are completely forbidden
- Binding all non-special custom tariffs (binding the highest rates that can be applied at any time; the binding covers 17% of total tariff lines that were binded before Uruguay Round, and 57% for transition and developed countries).
- Decreasing these binded rates by agreed percentages during implementation's period, as follows:
  - Developed countries:

- Reducing support by 36% through six years (annual dividend = 6%).
- Reducing subsidized exports by 21% through 6 years (annual dividend = 3.5%)
- Developing countries:
  - Reducing support by 24% through 10 years
  - Reducing subsidized exports by 14% through 10 years

In addition, developing countries are allowed to:

- Subsidize agricultural marketing and international shipping
- Impose low fees on internal movement of exporting vehicles

### *1.5.3 Uruguay rules concerning export subsidies*

Export subsidies that should be reduced include:

- Direct subsidies, including in-kind subsidies
- Selling untradeable stocks with lower prices
- Export subsidies deducted from governmental fees and taxes
- Supporting external marketing (out of borders), and international freight's costs
- Low fees for exported shipments

### *1.5.4 Commitments and rights in the context of AoA:*

Commitments:

- Tariffication
- Binding and fixing custom tariffs
- Reducing domestic support and export subsidies

Rights:

- Binding and reducing custom tariffs in importing countries, including Tariffication
- Utilizing the reduction of domestic support in developed countries on the medium and long-run

SSM<sup>1</sup>

SSM is a measure that can be applied by countries which tariffied their NTBs simultaneously with the signature of the AoA. Each "tariffied" crop can be protected by the SSM.

The measure is factually tariffs that ensure temporary protection against the sudden import surge or the decrease in international prices. Countries can either set tariffs for their imports or set a general ceiling for tariffs, but they cannot apply both actions. In general, developed countries were the WTO members which tariffied their NTBs, and thus got the right to use the SSM.

Only twenty one developing countries could achieve the right to use the SSM. Although the SSM is an incomplete mechanism, it secures one of the simplest methods to protect the producers in a given country from import surge. A number of developing countries suggested the creation of a special kind of SSM to be dedicated for developing countries only. These suggestions are currently on the table of negotiations in the context of the-so-cold "development box".

## **2. Syria and the WTO accession**

Syria is one of the GATT's establishing countries, yet it withdrew due to political reasons. However, in light of the international trading developments, which have been branched and complicated according to

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<sup>1</sup> Based on <http://www.earthcouncil.com/>



countries' requirements and policies, Syria submitted a request for WTO accession in 2001 for the first time, and reiterated the request in 2004. This action represents an important step towards trade liberalization in Syria, and occupying an advanced rank among trading countries in the world.

## **2.1 The preparatory applied measures:**

Syrian prime minister issued the decision No. 2175 dated at 5-2-2002, which implies the establishment of four committees headed by the Minister of Economy and Commerce:

- General Committee for Preparation (for WTO accession)
- Committee for liberalizing trade in commodities
- Committee for liberalizing trade in services
- Committee for competition and IPRs protection

These committees are entitled to take measures and prepare documents, as well as following up the request for WTO accession.

### *2.1.1 Measures have been taken:*

- 1- Ministry of Economy created a related department that is dedicated for preparing for the coming accession to the WTO.
- 2- A specialized team work was formulated in the NAPC to take part in accession measures. In this respect, needed data were collected in order to practice the exercise of filling in WTO required tables, set up available options to start working, and prepare the memorandums to be ready when working party is established. The memorandums are as follows:
  - a. WTO/ACC/1 the template of the memorandum dedicated for foreign trade system
  - b. WTO/ACC/4 dedicated for information about agriculture
  - c. WTO/ACC/5 dedicated for information about services
  - d. WTO/ACC/8 dedicated for information about TBT and SPS
  - e. WTO/ACC/9 dedicated for information about TRIPS

### *2.1.2 Preparatory work that Syria is required to do:*

- Preparing for the tariffication of all agriculture and food NTBs (import quotas, import ban, unautomatic licenses ...etc.) and apply that after the completion of WTO accession.
- Binding all agriculture and food custom tariffs, and set up plans for their gradual reduction through time (it is recommended not to reduce them out of the working party's negotiations framework)
- Investigating kinds of support that can be adopted, and examining their harmonization with those exist in the WTO member countries; a huge pressures will be conducted to abolish any unharmonized or unjustified kind of support. It is also expected to face several technical question demanding details on current support programmes, and their practical work as well as their payments' information (currently, all agricultural support kinds were shifted to Agricultural Support Fund that was created recently).
- Set up an envisagement about the future role and tasks of public institutions, considering that a lot of pressures will be conducted to abolish all kinds of state export and imports monopoly.

Actions that are needed currently:

- Start preparing the memorandum about Syrian foreign trade system in the form that WTO standard models define, and in coordination with relevant bodies.
- Setting up the scenarios to choose the most relevant basis year (trade data for several years, on average, are to be considered relying on the chosen basis year), and doing the illustrative calculations for that data in order to increase the ability for anticipating various resulting effects on general level of tariffs, export subsidies and AMS.
- Calculating export subsidies (if not zeroed), and the AMS (if it is greater than the de minimis) in order to apply the gradual reduction in accordance with Uruguay Round indications.

- Preparation of needed data in terms of SPS and TRIPS, as well as all applied laws to check their harmonization with WTO rules, in a relatively early stage of accession.
- Defining the modifications must be conducted on Syria's economic policies; particularly agriculture (should be done early).
- Drawing the "red lines" for Syria's negotiators in all areas, including tariff rates (market accession)
- Defining probable scenarios, and setting up alternative policies in order to deal with the modifications or to mitigate their impacts.

## **2.2 Syrian economy – Agricultural sector:**

Trade is an important component in terms of payments' balance. Syrian government tried recently to liberalize the country's trade, and draw near international economic developments by modernizing Syrian systems and legislative structure. The role of private sector has become more extended, considering its involvement in setting up a number of regional and bilateral agreements with countries like Iran, Turkey, and Venezuela ...etc.

Syria tried to conduct financial and economic reform that help taking steps towards finalizing the AA with the EU and facilitating the WTO accession. It also tried to increase the number of Syria's trade partners, as well as simplifying foreign trade rules concerning imports and exports through the facilitations that have been put in place.

Recently, Syrian economy conducted an economic reforming programme, targeting faster increase of economic growth rates in order to reach a growth rate of 8% by 2015 and increasing total GDP. In addition, reforming and modernizing public sector institutions, promoting their competition and increasing the contribution of private sector in building the economy are among the government's goals. The ultimate goal is to achieve the targets of economic development strategy and meet the demands of increasing population growth, including the reduction of current unemployment rates, which were estimated at 8.4% in 2009, and increasing economic diversity. Also ensuring economic efficiency, social justice, promoting exports, rationalization of administrative spending and enhancing the environment of investment are included.

CBS statistics point that total working force reached 5 million habitants in 2009, which represents 25% of total populations. Services sector monopolizes 26% of total working force, followed by tourism (restaurants and hotels) 16.38%, industry (16.36%), structure and building (16.36%), agriculture (15.2%), transportation and telecommunication (7.6%), and lastly finance and insurance (2.2%).

Syria's economy made good progress during recent years. GDP's average growth rate between 2000/2002 and 2009 reached 5.9% in fixed prices (the basis year is 2000). The highest growth rate for GDP was registered in 2009 and reached 6.2%. In terms of GDP per capita, it reached 70666 S.P. in 2009, increasing by 2376 S.P. compared to previous year. Agricultural GDP contribution to total GDP was 19% in 2009 (fixed prices), whereas its contribution was higher by 1% in previous year.

## **2.3 Trade policies**

Syria progressed in terms of conducting comprehensive structural modification on its trade policies, in accordance with the reforming direction that the state adopted in order to make Syria a vital part of international market on the one hand, and in accordance with the strategy aiming at compounding economic growth demands and social development requirements. Therefore, it conducted several modifications that cover legislative, regulative and institutional issues. It eliminated most barriers to trade, issued hundreds of decisions that liberalized several commodities and conducted several economic and financial measures that support economic liberalization. These measures relate to developing administrative and legislative environment, simplifying custom relief procedures for imports, and reducing custom tariffs for most primary agricultural or industrial commodities to be around 1%. This reduces production costs and increases competitiveness of productive sectors. This was reflected on the performance of Syrian trade, where a study prepared by SPC as well as some other concerned institutions

in order to analyze the progress of Syrian foreign trade during 2000-2007 showed that imports were doubled three times and exports were doubled more than two and half times during the same period.

The government took several steps towards ensuring more trade openness. In this context, the ministry of industry launch the programme for enhancing the quality, which aims at enhancing Syrian goods' quality; the programme was financed by the EU. The programme is sought to promote industrial goods' quality and enhance Syrian foreign trade. In the framework of the programme, legislations will be developed to support Syrian infrastructure of quality. This will motivate the producers to promote their products' quality and enhance the ability of Syrian products to access international markets. Likewise, the preparation for establishing a national council for quality and a related supervising commission are taking place currently. In addition, Ministry of Economy and Commerce produced an index for trade harmful practices in order to inform Syrian producers about measures related to protect national product from foreign trade prejudices, such as dumping and unfair support.

Syria opened its markets for non-Syrian products imported from Arab countries and Turkey, in accordance with concerned FTAs. It also permitted the importation of most commodities from all countries, reduced custom tariffs for most imported commodities and eliminated most NTBs. Syrian imports' structure reflects trade policy that, through timely-offered facilitations, afforded the priority to the importation of mediated-commodities and production inputs, which help promoting economic development. Syria decided to terminate the monopoly, restriction and commissions enjoyed by some governmental institutions; this termination is detailed in the legislative decree 61/year 2009. The termination process is to be completed in one year through six gradual steps.

#### **2.4 Agricultural trade policies**

Agricultural sector is one of the most important sectors that help promoting national economy with its economic contribution. Agricultural development strategy and consequent fivefold plans have been targeting the promotion of the two branches of agricultural production: animal and plants. They have targeted also extending food and agricultural industry by linking agricultural production and industrial production, and exporting processed products in order to grasp higher added value besides achieving other general targets that enhance the quality of agricultural products and consequently promote their exportation. These include the application of BTs and decreasing use of chemical materials in agriculture, as well as developing organic agriculture.

The government took several steps to develop agricultural sector and meet its need to structural reform, which would enhance agricultural trade. Efforts were concentrated on re-distributing agricultural support to make it objective so to serve the goals of general developmental policy, achieve stabilization in terms of strategic crops and increase exports of tradable agricultural commodities.

The government is also putting efforts to increase agricultural investments through affording more incentives that help activating agricultural exports, which are still below the required level; total number of agricultural programmes utilizing investment incentives was not greater than 28<sup>2</sup>. The international financial crisis increased investors' fears regarding the establishment of agricultural investing programmes, though the impacts of the crisis on agricultural sector were very limited (a reduction in prices of exported goods due to the fall in the international markets was partly compensated by the reduction in the prices of agricultural imported commodities).

In terms of imports, Syria continued its trade policy that implies more openness regarding out-border markets and gradual liberalization of national markets, beside opening the doors for importing most agricultural products, except sensitive products that their importation may prejudice domestic production, as well as the cases were importation of a given commodity could be temporarily banned in order to protect national production or tackle an urgent situation.

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<sup>2</sup> SAT 2009

For instance, the government recently liberalized fertilizers' trade, and allowed importing all kinds of fertilizers. It also allowed importing wheat from Russia as well as Bulgaria in 2008 in order to compensate the reduction in its strategic stocks, which took place due to climatic conditions and drought circumstances.

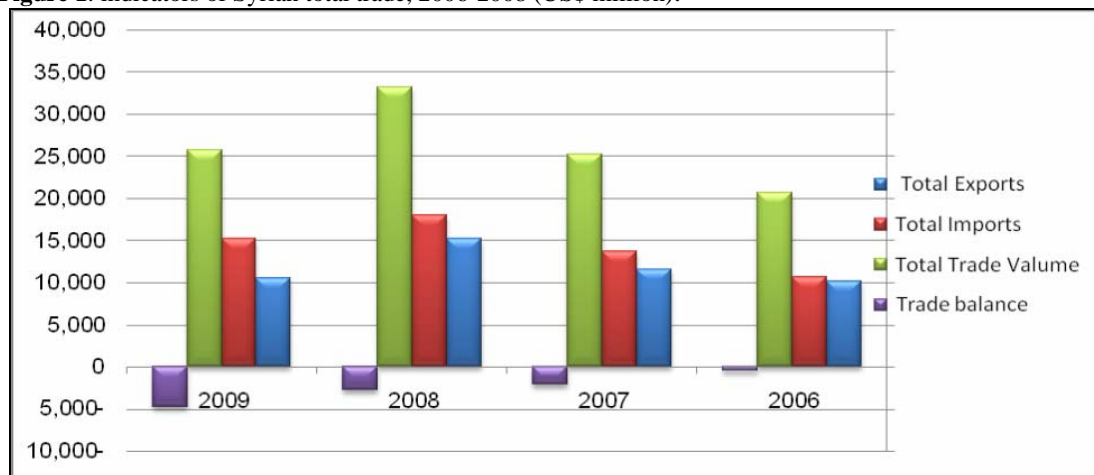
Identically, the government banned citrus importation, whatever the origin country is, except GAFTA member countries and Turkey, which commercial links with Syria are organized through FTAs. The reason for this ban was the local abundance of citrus besides those imported from GAFTA countries and turkey, all around the year. Furthermore, MAAR banned the importation of husked and unhusked almond because domestic production is sufficient. In addition, there was a ban on importing dried milk originated in China, as a temporarily precautionary measure, after that some Chinese children died due to consuming contaminated milk.

## 2.5 Developments of Syrian trade:

In the last decade, Syria witnessed a set of developments and actions aiming at promoting its trade, where the country sought to open its markets to the global markets through issuing a number of laws and legislations concerned imports and exports. Thus, Syria allowed the importation of many commodities that their importation was banned or restricted, and identically, Syria allowed the exportation of most commodities.

**Figure 1** shows the characters of Syrian foreign trade during 2006-2009, where the increase in trade volume is obvious. However, the increase in imports volume was greater than the increase in exports volume, which led to the deficit in trade balance; the deficit was US\$ 4781 in 2009.

**Figure 1:** indicators of Syrian total trade, 2006-2008 (US\$ million).



Source: SAT 2010.

Moreover, an important increase in regional trade with GAFTA member countries took place. The following table shows that total regional trade with GAFTA member countries increased annually by 25.7%; it increased from S.P. 843 billion to S.P. 526 billion between 2000-2002 on average and 2009. The non-agricultural trade dominated the largest share of the increase, and registered an annual growth rate equals 27.2%, while agricultural trade increased annually by 22.6%. Identically, the share of agricultural trade in total Syrian trade fell from 35% in 2000-2002 (average) to 29% in 2009, whereas the portion of non-agricultural trade increased during the same period from 65% to 71%. Nonetheless, the increase in total exports didn't reach the same level that the increase in total imports reached.

**Table 1:** the developments of Syrian total and agricultural trade with GAFTA member countries between 2000-2002 (average) and 2009.

item	Average 22000- 002	2003	2004	2005	2006	2007	2008	2009	Annual growth rate
Total non-agricultural trade (ex. & im.)	54,660	83,755	128,627	129,614	281,098	362,421	489,778	373,939	27.2
Agricultural trade	29,702	37,826	46,770	47,465	93,305	113,618	189,929	151,963	22.6
Total trade (ex.& im.)	84,362	121,581	175,397	177,079	374,403	476,039	679,707	525,903	25.7
Agricultural trade/total trade %	35	31	27	27	25	24	28	29	
Non-agricultural trade/total trade %	65	69	73	73	75	76	72	71	

Source: CBS statistics and NAPC database<sup>3</sup>.

On the other hand, Syria sought to geographically extend its export markets, aiming at increasing its exports in order to secure financial resources needed to meet the increasing demands on imports. In this sense, the government started in last decade issuing legislations that help accelerating the reform process, and promote exports and increasing export competitiveness as well as eliminating barriers hindering exportations. Currently, the focus is on producing and exporting processed products to utilize the added value on the one hand, and shrink their importation on the other hand.

Syrian trade progressed significantly in recent years, where the annual growth rate of Syrian exports between 2000-2002 (average) and 2009 reached 11%. Syria's involvement in several FTAs helped increasing exports' volume and reducing barriers that its trade face when accessing foreign markets. Despite the increasing growth of exports' volume, imports volume is still larger, where the annual growth rate of imports reached 16.9% during the same period (Av. 2000-2002 to 2009).

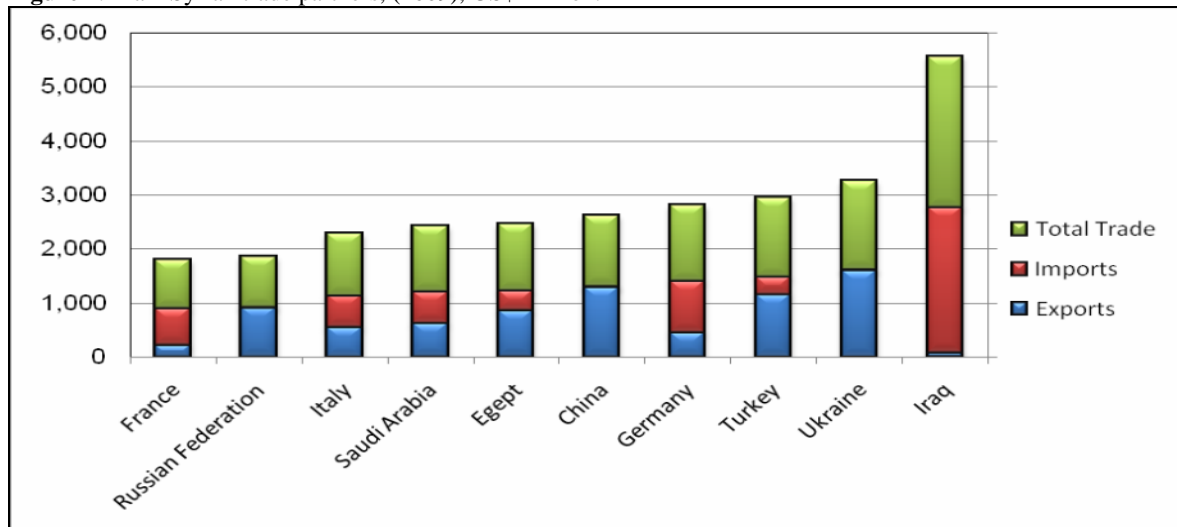
Iraq occupied the first rank among Syria's trading partners in 2009, where the bilateral trade valued US\$ 2775 million. The share of bilateral trade with Iraq represented 10.8% of Syrian total trade, followed by Ukraine (6.3%) then Turkey, the third Syrian trade partner, where the bilateral trade with Turkey valued US\$ 1475 million. Germany ranked after Turkey with a bilateral trade value equaled US\$ 1403 in 2009 (5.5%). Thereafter, China (5.1%), Egypt (4.8%), Saudi Arabia (4.7%), Russia Federation (3.6%) and France (3.5%) ranked respectively.

The major part of Syrian exports was directed to Iraq, with a trade flows valued US\$ 2697 million, and then came Germany (US\$ 953 million). France was the third destination market for Syrian exports (US\$ 675 million), Italy was the fourth (US\$ 591 million) and Saudi Arabia occupied the fifth rank (US\$ 588 million).

The total share of exports to these five countries in total Syrian exports was equal to 52.5% in 2009, with a slight increase compared to 2008 (50.5%).

<sup>3</sup> Figures are modified according to 2000 prices.

**Figure 2:** Main Syrian trade partners, (2009), US\$ million.

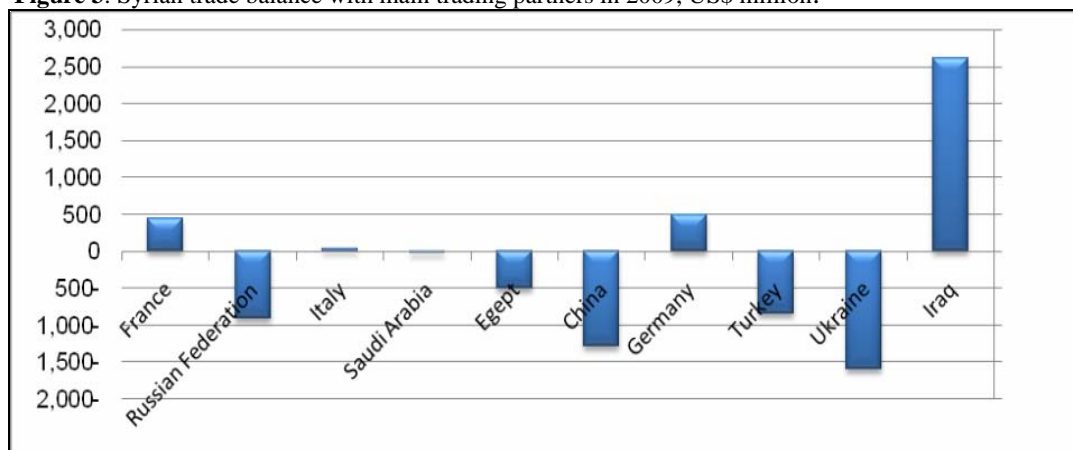


Source: SAT 2010

Trade balance with Ukraine suffered from a deficit of US\$ 1592 million in 2009. China followed Ukraine on this scale, where the deficit in Syria's trade balance with it reached US\$ 1282 million, then Russia (US\$ 903 million), Egypt (US\$ 503 million), Brazil (US\$ 489 million) and lastly the USA (US\$ 240 million). Furthermore, Syria was almost net importer from Ukraine and China.

On contrary, trade balance with each of Germany, France, Lebanon, Algeria, and Jordan was positive in 2009, as clarified in figure 3.

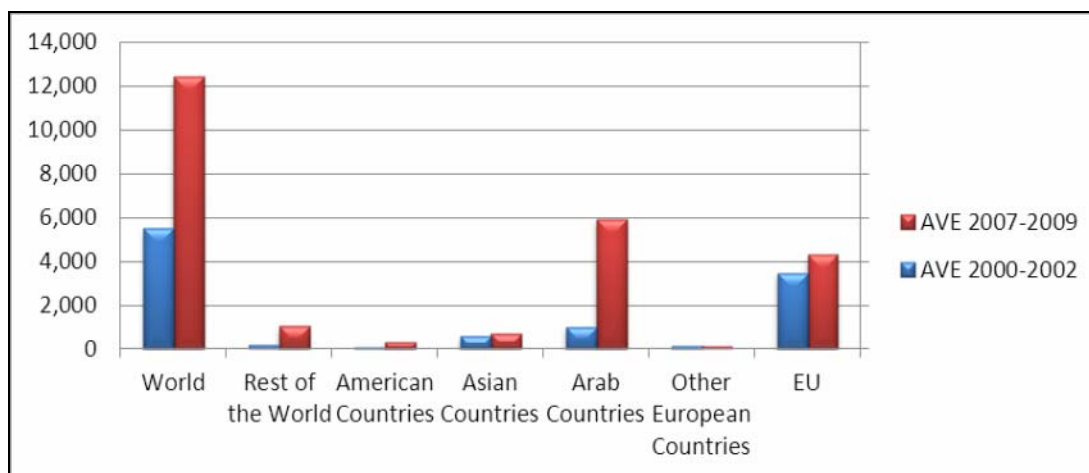
**Figure 3:** Syrian trade balance with main trading partners in 2009, US\$ million.



Source: SAT 2010

Concerning regional trade in 2009, Arab countries are still the main destination for Syrian exports, where Arab goods dominated 52% of total Syrian exports, followed by the EU (30%) and then Asian countries, as illustrated in this figure.

**Figure 4:** total Syrian exports by destinations, 2000-2002 (average) and 2007-2009 (average), US\$ million.



Source: statistics of CBS, General Department for Customs.

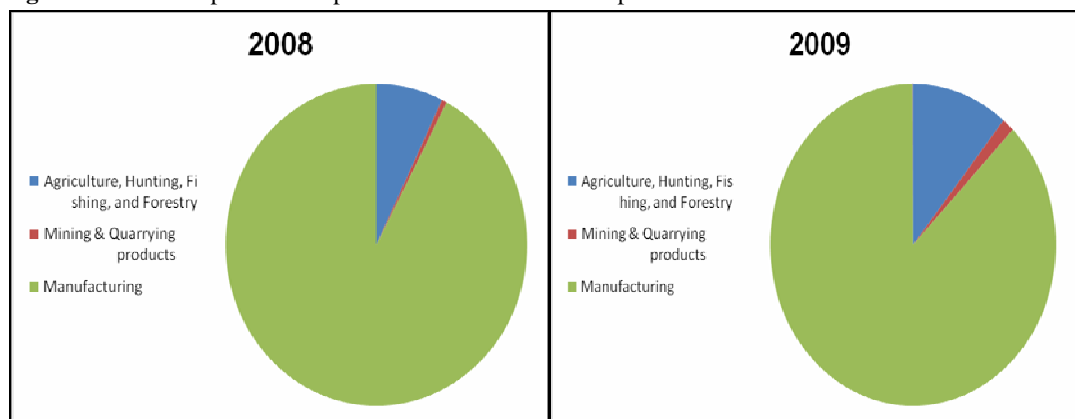
The exports belonging to two of the three main export sectors increased in 2007 and 2008; ores and minerals exports increased by 8% in 2007 and 36% in 2008. Exported manufactured goods also peaked in 2007 and 2008, where their growth rate reached 19.6% and 47% respectively. On contrary, agricultural exports fell sharply by 20% in 2008. The annual growth rate of agricultural exports was 14.9% in 2008, while it was 6% in terms of ores and minerals, and 48.8% regarding industrial products.

Concerning the distribution of exports according to the sectors, ores and minerals possessed 29% of total exports in 2009, whereas industry's share slumped from 54% in 2008 to 48% in 2009. Agricultural exports' share, however, advanced from 7% in 2008 to 14% in 2009.

Syrian imports developed noticeably, with an annual growth rate of 16.9% between 2000-2002 (average) and 2009, where main imported products are basically manufactured products, which grasped 87% of total imports in 2009. Agricultural products' share was 11%, while the shares of ores and minerals and other sectors were very small and not above 1% for each.

The following figure shows the development of imports' structures and its components' shares (percentages).

**Figure 5:** the development of imports' structures and its components' shares.



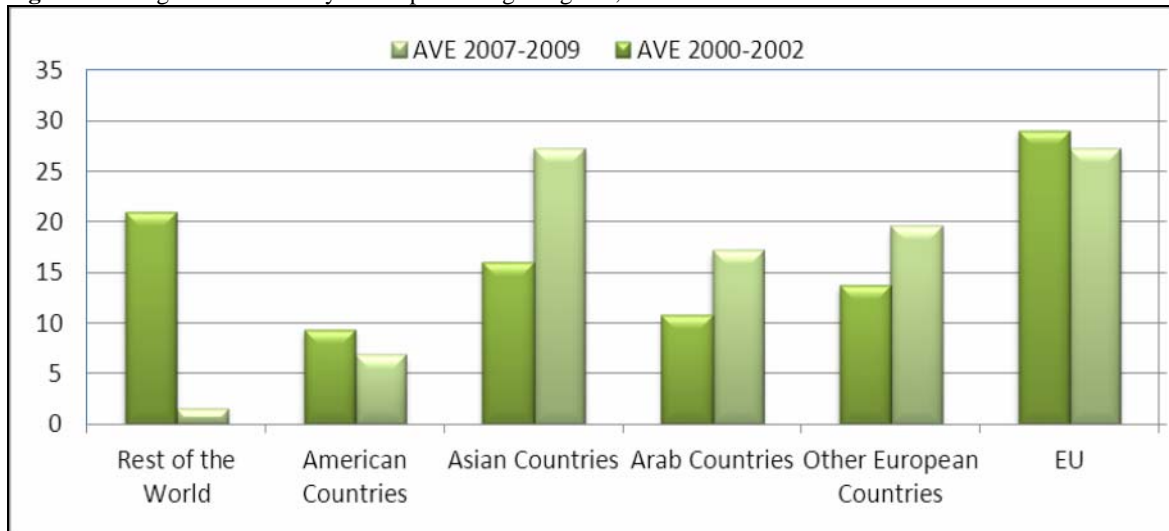
Source: statistics of CBS and General Department for Custom.

The major origins of Syria's imports in 2009 were Asian countries, which exported 31.2% of total Syrian imports (US\$ 4755 million), followed by the EU with a share equaled 23.6% (US\$ 3607 million). The non-EU European countries occupied the third rank, altering 18% of Syrian imports (US\$ 2758 million),

and then came Arab countries (16.4%, i.e. US\$ 2509 million). Furthermore, imports from American countries were 9.6%, while imports from the rest of the world equaled to 1% only.

The following figure demonstrates some changes marked imports' origins during the two periods 2000-2002 and 2007-2009. The fall in Syrian imports from the EU is clear in 2007-2009 comparing to first period, whereas the share of Arab and Asian countries obviously increased on the same scale.

**Figure 6:** changes in terms of Syrian imports' origin regions, 2000-2002 and 2007-2009.

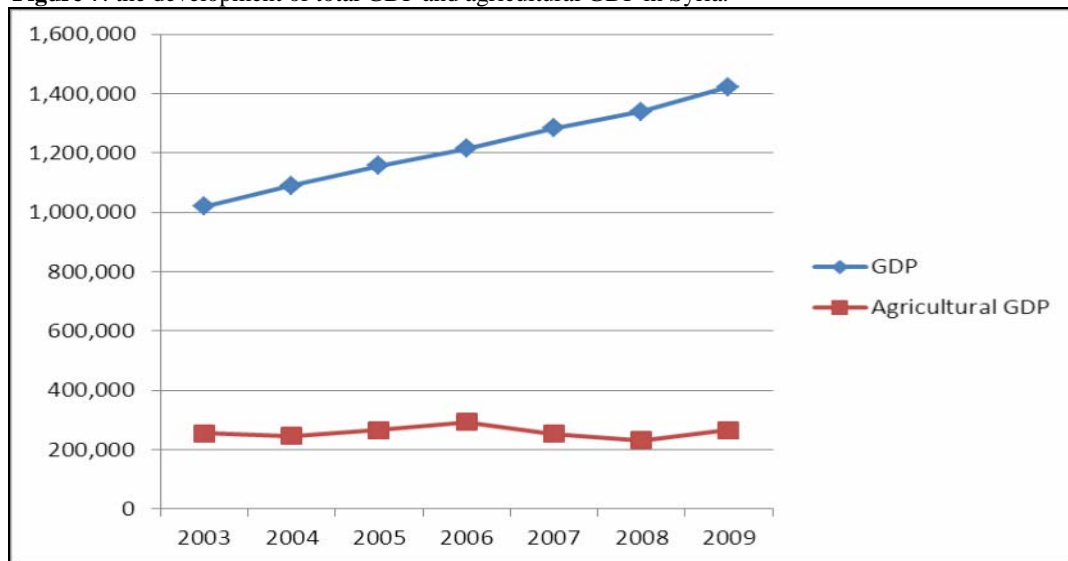


Source: statistics of CBS and General Department for Custom.

### 2.5.1 Syrian agricultural trade:

Agriculture contributes to most production, trade and manufacturing activities related to other sectors. Agricultural workers' total number is about 814,000. The contribution of agriculture in GDP equaled 19% (fixed prices) in 2009. **Figure 7** shows the linkage between the upward directions of agricultural GDP and total GDP till 2006; where after 2006 agricultural GDP slumped due to climatic conditions while total GDP continued rising.

**Figure 7:** the development of total GDP and agricultural GDP in Syria.



Source: SAT 2010.

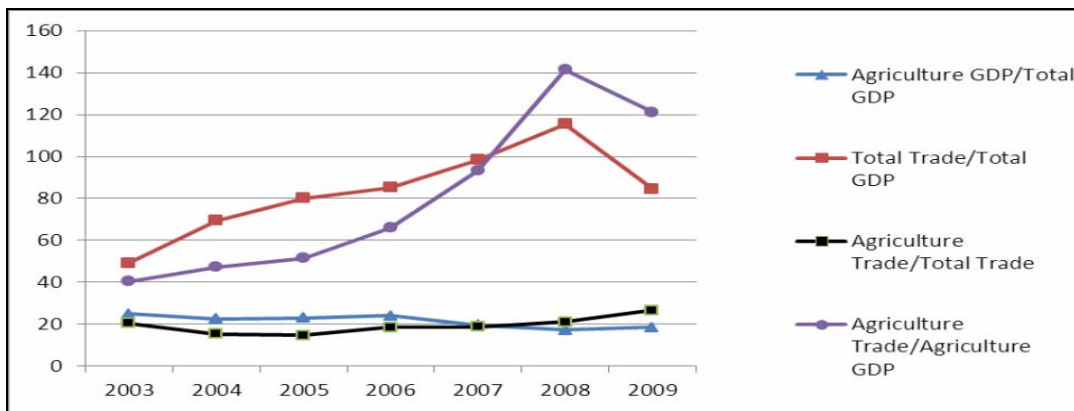


The value (by current prices) of Syrian agricultural trade doubled in the last decade, and formed 26.7% of total trade and 22.6% of total GDP, thanks to the accelerated rate of agricultural trade flows, which is enjoying significant development due to the increase in private sector participation in agricultural trade activities after issuing laws to abolish bans, restrictions and limitations on exporting and importing most agricultural commodities. Moreover, Syria enjoyed the establishment of several agricultural production and marketing projects, which contributed in increasing exportable agricultural production.

Agricultural trade flows practiced considerable promotion that was reflected as an increase in the annual growth rate of agricultural trade (about 27% in current prices) between 2000-2002 (average) and 2009. This promotion can be much more seen if the value of agricultural trade in 2000-2002 was compared to its value in 2007-2009; the increase equals 227% by current prices.

Next figure shows the share of total trade in total GDP, and agricultural trade in agricultural GDP, between 2003 and 2009.

**Figure 8:** total GDP and agricultural GDP, general trends, 2003-2009, (%).



Source: SAT 2010.

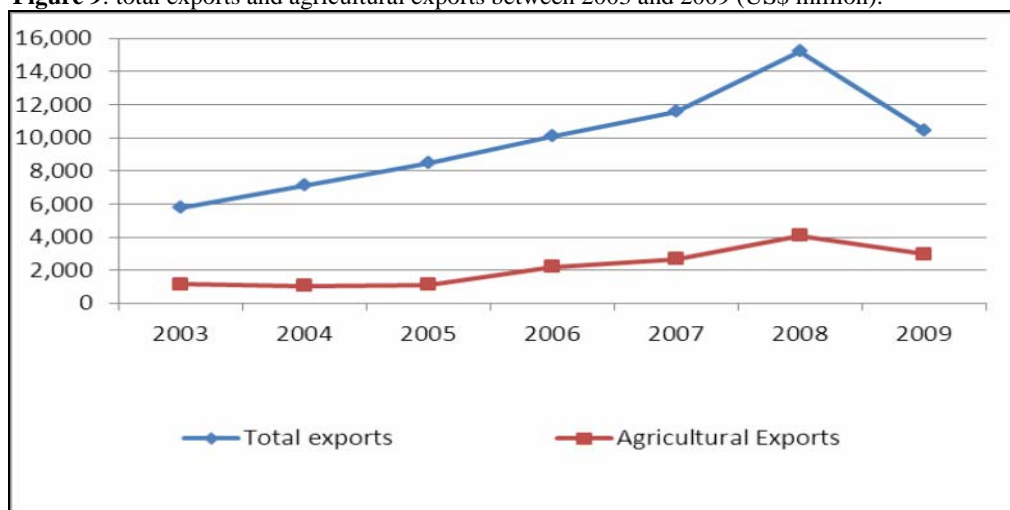
Syrian agricultural trade has been characterized by prominent effectiveness, as statistical indicators show. Although the competitiveness of Syrian agricultural commodities increased, their contribution in total agricultural exports decreased. The increase in imports has been exceeding the increase in exports, thanks to openness that allowed importing commodities that were banned in the past, as well as the barriers Syrian exports face in some countries. Accordingly, Syrian agricultural trade balance became negative recently, which led the government to take actions to supporting exports through enhancing the quality of Syrian products and advertising them, besides supporting crops of special importance.

Syrian agricultural exports are very concentrated. The largest share of Syrian agricultural export are just few commodities, therefore, exporting other commodities that may have greater competitiveness in foreign markets should be revisited.

#### 2.5.1.1 Syrian agricultural exports:

Agricultural exports have an important role in developing agricultural sector and enhancing its efficiency through their contribution in production, marketing and processing activities, besides acting as an attractive factor for agricultural investments. For this purpose, the government supported this sector by a number of measures that help enhancing the competitiveness of agricultural commodities, such as scrutinizing agricultural exports more effectively, focusing on quality issues and paying attention to pests' bio-control. This was reflected as a large increase in agricultural exports, where their annual growth rate between 2000-2002 (average) and 2009 reached 17%.

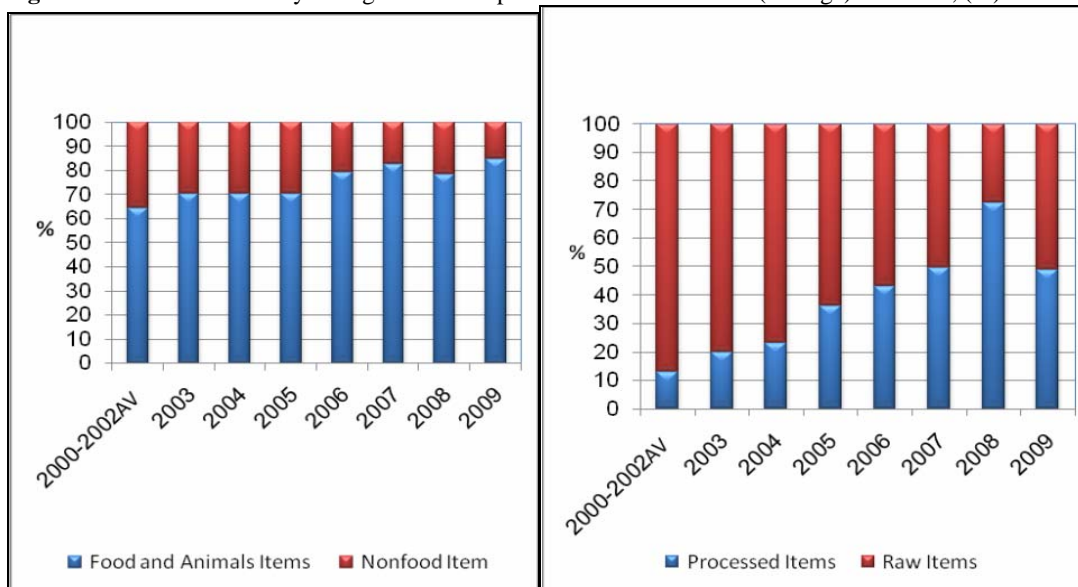
**Figure 9:** total exports and agricultural exports between 2003 and 2009 (US\$ million).



Source: statistics of CBS

Among the positive indications regarding agricultural exports' enhancement is the gradual shifting towards processed agricultural exports in order to benefit from the value added. Noticeably, the share of exported raw materials fell, while the share of processed exports increased. In this respect, the share of raw materials was 57% in 2006, whereas it became 51% in 2009. Simultaneously, the share of processed commodities in total agricultural exports increased from 43% to 49%. The first five major agricultural exported commodities represent 29% of total agricultural exports, and the first ten together have a share of 37%.

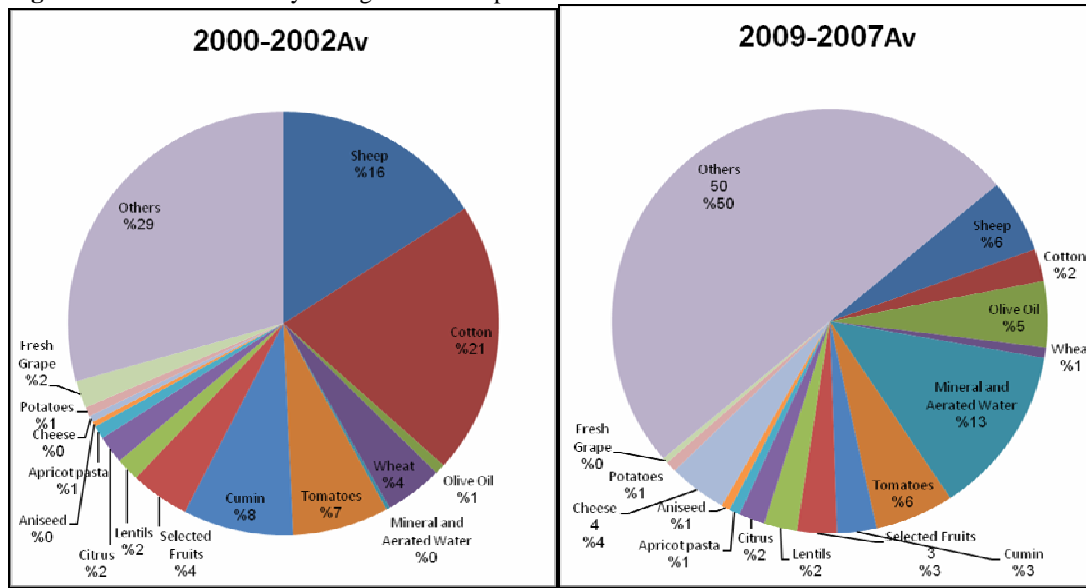
**Figure 10:** the structure of Syrian agricultural exports between 2000-2002 (average) and 2009, (%).



Source: NAPC database.

Next figure illustrates the developments in agricultural exports' structure in two periods: 2000-2002 and 2007-2009, where it shows the increase in shares of dairy (cheese) and olive oil but the decrease in shares of uncarded and uncombed cotton as well as sheep.

**Figure 11:** shares of main Syrian agricultural exports.



Source: NAPC database.

#### 2.5.1.2 Syrian agricultural imports:

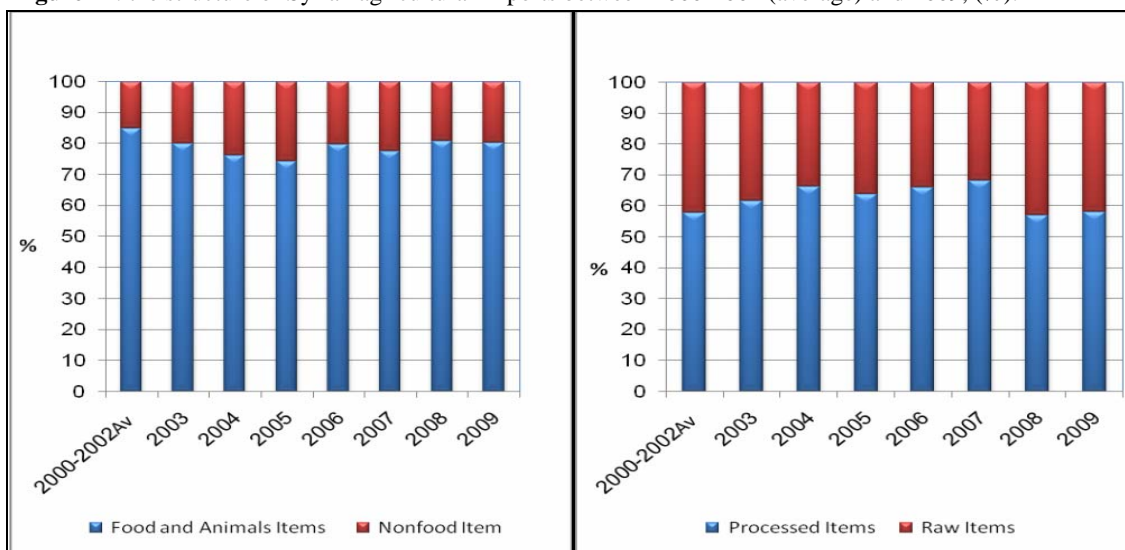
The agreements that Syrian government signed with a number of countries, as well as the contribution of private sector have been heightening the level of agricultural imports. The annual growth rate of Syrian agricultural imports between 2000-2002 (average) and 2009 reached 23%, which resulted in a deficit in agricultural trade balance in some years, yet it considerably contributed in securing consumer goods that are essential for populations and raw materials needed for agricultural production.

Most agricultural imports consist of food and/or processed commodities, where food products form 80% of total agricultural imports, and processed commodities form 58% (the share of imported processed commodities fall by 10% in 2009 comparing with 2007, according to the NAPC database and General Directorate of Custom).

The value of agricultural imports peaked in 2009, reaching the highest figure during the timebase (US\$ 3909 million), with a growth rate of 33.7% comparing to the previous year. The share of agricultural imports in total imports equaled 25.6%, which is the highest share compared to previous years. Furthermore, the values resulted from dividing agricultural imports on agricultural GDP and total GDP were 69% and 12.9% respectively (as shown in **figure 12**).

It can be noted that the structure of agricultural imports in 2009 was much more concentrated than agricultural exports; the first five imported agricultural commodities represented 40% of total agricultural imports, and the first ten represented 49%.

**Figure 12:** the structure of Syrian agricultural imports between 2000-2002 (average) and 2009, (%).



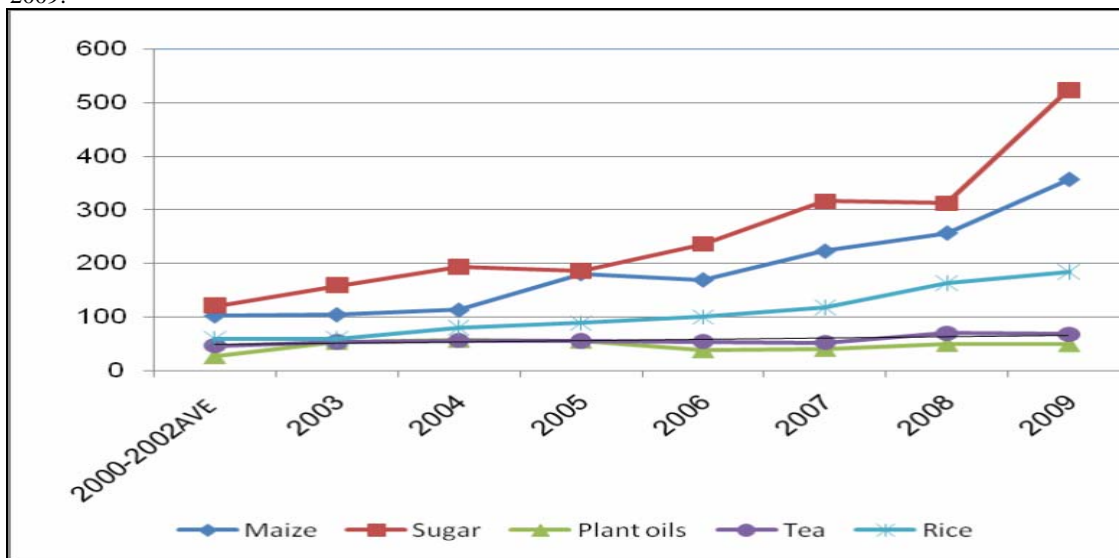
Source: NAPC database.

The main Syrian agricultural imports in 2009 (categorized as custom chapters) were: cereals, sugar and sweet products, fruits and industrial plants, oilseeds, coffee, tea, spices, milk and dairy, plant oils and animal fats, tobacco, wood and wooden products.

In the same year, cereals formed 25% of total agricultural imports, while the share of sugar and sweet product was (14%), oilseeds (12%), and plant oils and animal fats (6%) (Source: NAPC database and statistics of CBS).

Concerning individual commodities, the major imported commodities in 2009 were Sugar, tea, dried milk, maize, oil-cake, banana and barley. Sugar's share was 13.4%, soybean 8.6%, whereas shares of rice and oil-cake were 4.7% and 4.5% respectively.

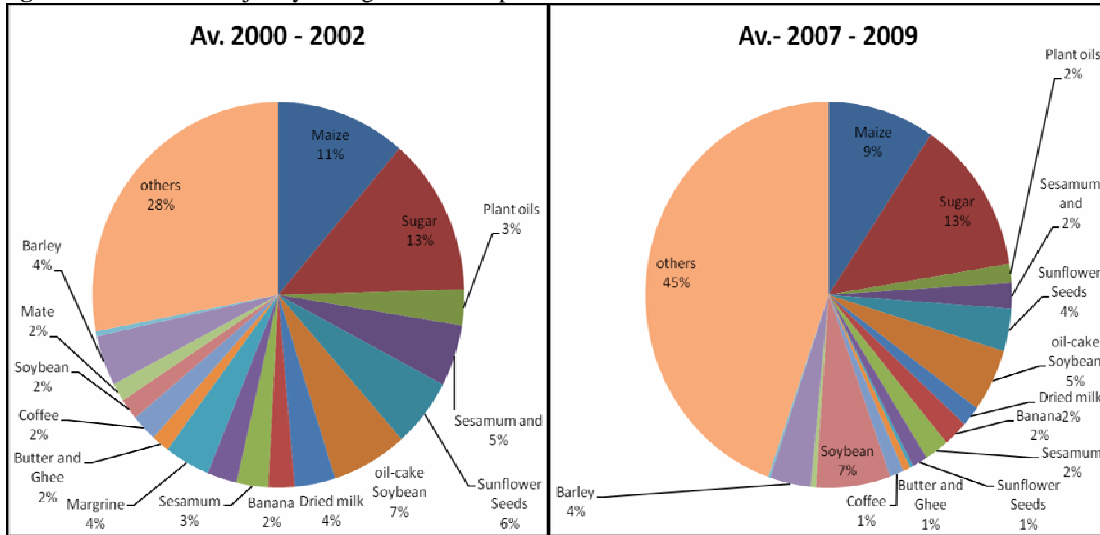
**Figure 13:** developments of import of some selected agricultural commodities between 2000-2002 (average) and 2009.



Source: NAPC database.

It can be noticed from the above figure that imports of most of the selected commodities increased, particularly in 2009. Since 2004, a significant shifting in soybean imports has been taking place. In this respect, while its imports value was limited to not more than US\$ 336 million, it reached US\$ 336 million in 2009, thanks to domestic markets' demand on this crop, which can be used either for soybean oil production or as animal feed; this clarifies the sharp changes in its importation.

**Figure 14:** Shares of major Syrian agricultural imports.



Source: NAPC database

As can be noted, there a reduction in imports of most major commodities, including tea, maize, plant fat, oil-cake, sesame seeds, coffee, sunflower and oils.

Sugar imports' value in 2009 was greater by US\$ 212 million than its value in 2008, thanks to domestic production insufficiency as well as the increased consumption of this commodity. The annual growth rate of sugar imports in 2009 reached about 39%. Similarly, imports of oil-cake residue from soybean process, cotton, and sunflower increased by 164.6%. Maize imports increased and reached US\$ 356 million. Syrian imports of rice have been increasing constantly between 2002 and 2009 due to the increased growth of total population number, as well as the shift in consumers' diet. Identically, imports of dried milk and tea decreased slightly in 2009

# Chapter 2: research and analysis

## 1 Research

**Methodology:** The partial equilibrium model SMART (Single Market Partial Equilibrium Simulation Tool) was used in this study. This model was developed by the World Bank through WITS (World Trade Integrated Solutions) facilities. The model focuses on single importing market and several trading exporter partners. The tool estimates numerically the impacts of different scenarios of custom tariff modification on all trade aspects.

**The hypothesis:** The smaller flows of a given agricultural tradable commodity in a specific region is controlled by Armington equations, while the larger flows is adjusted according to the requirements of international agricultural markets.

**Variables:** the model used in this study comprises all Syrian trading partner countries. In addition, ten exported agricultural commodities and fifteen agricultural imported commodities were chosen to be incorporated in the model. The choice was made upon a defined threshold.

**Characteristics of the used model:** in general, the equations used in the model have fixed elasticities for a given commodity. The equations make no difference when applied for different countries. However, the coefficients and values of the variables do differ. The model deals directly with all agricultural trade policy related to tariff modifications.

**Applied scenarios:** 5 scenarios were applied: the first one is a full zeroing of tariff. It serves as a reference case to help defining the most sensitive commodities. The other three scenarios are imaginary scenarios that Syrian primary offer in the coming accession's negotiations may theoretically consider/base on one of them. The three scenarios include: linear reduction of 50% for eleven imported commodities, protecting the rest four sensitive commodities from any reduction; a reduction by Swiss formula (coefficient = 0.16) for all ten imported commodities; a reduction by Swiss formula (coefficient = 0.16) for eleven imported commodities, protecting those four most-sensitive commodities from any reduction; and lastly an optimistic scenario that assumes an accession to the WTO with almost current tariff, applying a slight linear reduction of 20% for all agricultural imported commodities under study.

Regarding consumer behavior, the study relies on Armington assumptions, thus presuming the existence of incomplete competition. That is, similar products from different origins are not fully substitutive, where the consumer defines a specific level of expenditure for a given commodity, then allocates this expenditure among various sources, according to his/her preferences.

## 2. Impact of tariff reduction on imports:

In a given economy, there are two impacts for trade liberalization in general, and for reduction/elimination of custom tariff and import's fees in particular. These two impacts are **trade creation** and **trade diversion**. **Trade creation** is defined as the increase in import of a given commodity due to reducing its custom tariff and import's fees in a specific country. However, if this reduction is preferential, as in case of preferential agreements, importation of a third country, which can't benefit from the reduction, will be partially canceled, and the dismissed volume will be compensated by imports originated from the country that enjoys the preferences (i.e. the preferential partner in case of preferential agreements). That's to say there will be a substitution in imports' origins, but not necessarily an increase in imports' volume. This is the so-called "**trade diversion**".

Economists name replacing national production by one country's exports **trade creation**, because it results in increasing net trade. Replacing other countries' exports is called **trade diversion**, because it does not increase net trade but diversifies its sources. The important difference between trade creation and trade diversion is that the former may produce economic benefits differently from the latter. Although trade creation may harm some sectors, it is useful in general. Trade creation occurs only when the import price is lower than national production's cost. Therefore, it allows getting the same product by lower price; however, trade diversion is less probable to be useful. Some sectors may benefit from trade diversion, but that is only due to losing some returns for the benefiting country only.

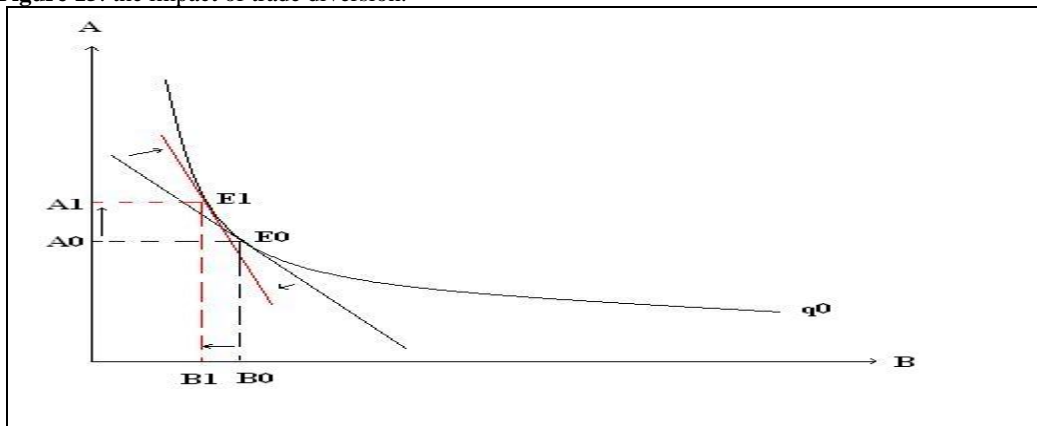
In general, RTAs are expected to increase both trade creation and trade diversion, but if trade diversion is bigger than trade creation, the result of the RTA may be a partial injury rather than a total benefit. Nonetheless, the more RTAs are launched, the more recent RTAs are expected to be less trade diversion, and more contradicting the previous RTAs trade diversion. At the end, establishing individual FTA with all countries in the world would eliminate trade diversion' influence completely and keep trade creation's impact only. Just as if the negotiations were multilateral.

Babili, 2008

## 2.1 The impact of trade diversion

The following figure illustrates the impact of trade diversion. If country A was offered a tariff reduction, its commodities will have competitive advantage, comparing with imports from the country B. The total volume of consumption of the commodity will not change; however, a new balance will emerge, where imports from country A will increase from A0 to A1, while imports from country B will shrink from B0 to B1. This is the impact of trade diversion.

**Figure 15:** the impact of trade diversion.

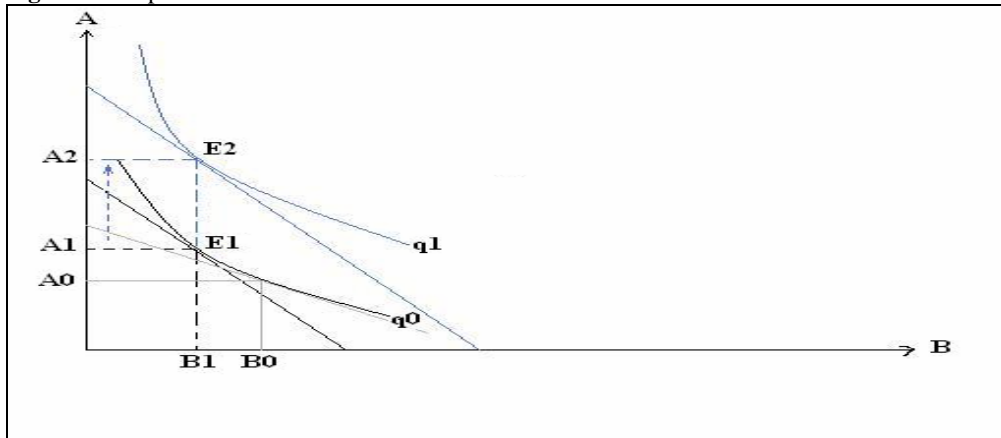


## 2.2 The impact of trade creation

Reducing tariff imposed on imports from country A will yield profitable impact; the same amount of spending can now grant a higher curve (the curve represents the possible compositions of total imports).

Furthermore, concerning exporter countries, the total trading impact is the sum of impact of trade creation plus the impact of trade diversion.

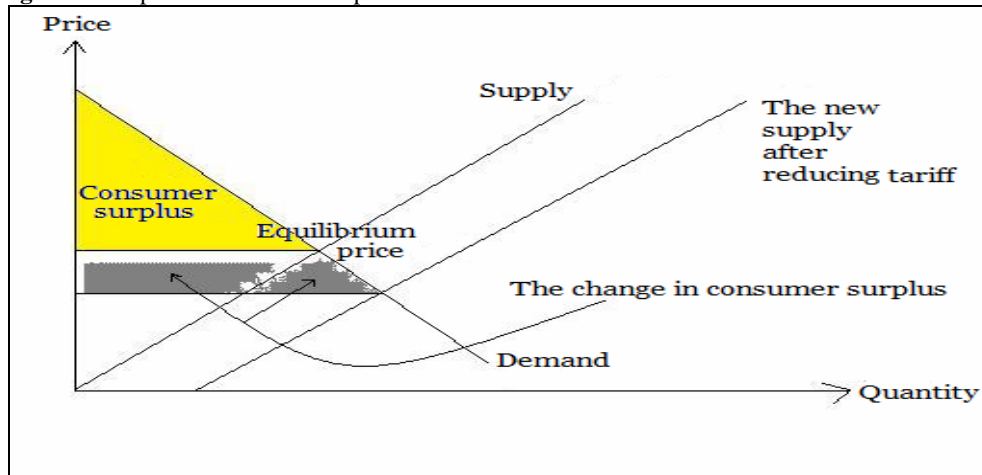
Figure 16: impact of trade creation.



### 2.3 The impact on consumer surplus and welfare

Reducing custom tariff will produce the so-called **consumer surplus**. Consumer surplus is defined as the water between what the consumer is willing to pay for a given commodity and what is he/she paying actually for it.

Figure 17: impact on consumer surplus.



Concerning the change in welfare, it is defined as the total revenues that a given economy gains due to reducing or zeroing custom tariff. It consists of consumer surplus, plus a small part related to tariff revenues.

### 3 Methods for tariff reduction<sup>4</sup>

1. Single tariff: that is, one single tariff for all commodities. This is the simplest method, and it is used usually in regional agreements, if the goal is zeroing or cutting substantially all sets of tariff.
2. Flat-rate percentage reductions: the reduction percentage is the same for all tariff lines, regardless how high or low the original tariff was.
3. Uruguay Round method<sup>5</sup>: developed countries cut 36% of all tariffs within 6 years (6% per year), yet the reduction for each single tariff line shouldn't be less than 15%. Developing countries cut 24% of

<sup>4</sup> Based on the WTO website

<sup>5</sup> The last round of the GATT and the establishing round for the WTO, 1986-1994.



all tariffs within 10 years, yet the reduction for each single tariff line shouldn't be less than 10%. LDCs are exempted from tariff reduction.

4. **Harmonized reduction:** it means cutting high tariffs much more than low tariffs, so all tariff lines would have close levels after applying the reduction. In this respect, there are two sub-methods: either there are different cut percentages for different tariff bundles (e.g. tariffs between 10% and 20% are to be reduced 5%, and those between 21% and 30% are to be reduced 8% ...etc.) or there is one single mathematical formula to be applied for all commodities (e.g. Swiss formula, which will be discussed later).

5. **Other methods:** for example, applying different cutting rates for different categories of products (let's assume greater tariff reduction for manufactured goods, comparing with raw materials; this method is used to answer the so-called tariff escalating, which aims at protecting manufactured goods and facilitating raw goods' importation), or a mix of more than one method.

#### 4 Syrian exports and imports incorporated in the model<sup>6</sup>:

Exports: the following exports were chosen basing on their exporting importance: eggs and hatched eggs, tomato, prepared foods obtained from unroasted cereal flakes, mineral water, cotton yarn, sheep, apples, preparations of a kind used in animal feeding, uncarded and uncombed cotton and beet sugar (they altogether dominate 48% of Syrian agricultural exports' value).

Imports: the following imports in **table 2** were chose.

**Table 2:** Syrian imports examined in this study.

Commodity	Tariff rate	Comments
Raw cane sugar	3%	Zeroed tariff for Arab countries
Maize	1%	Zeroed tariff for Arab countries
Soybean	1%	Zeroed tariff for Arab countries
Wheat and meslin	4%	Zeroed tariff for Arab countries
Oil-cake and other residues	1%	Zeroed tariff for Arab countries
chemically pure sucrose	7%	Zeroed tariff for Arab countries
Cigarettes	20%	Zeroed tariff for Arab countries
Semi-milled or wholly milled rice	3%	Zeroed tariff for Arab countries
Barley	1%	Zeroed tariff for Arab countries
Fiberboard of wood	6.5%	Zeroed tariff for Arab countries
Banana	40%	Zeroed tariff for Arab countries
Palm oil	1%	Zeroed tariff for Arab countries
Sesame seeds	1%	Zeroed tariff for Arab countries
Crude oil	1%	Zeroed tariff for Arab countries
Husked rice	3%	Zeroed tariff for Arab countries

<sup>6</sup> Please check annexes 1 and 2 to know the tariff lines (coded as harmonized system) that represent chosen exports and imports.

### Swiss formula

Considerably narrowing the gap between High and low tariffs is called the harmonizing method. Swiss formula is a special kind of the harmonizing method. It uses a single mathematical equation to achieve:

- A narrow threshold for final tariffs, starting from a wide set of primary tariffs
- A maximum final rate, regardless how high the primary tariff was

Usually, the required reduction is divided into annual dividend.

Switzerland was the country which proposed the formula during Tokyo Round (1973-1979). Nevertheless, Switzerland is now an opponent of using this formula in the current agricultural negotiations, and it prefers Uruguay Round approach, whereas the Uruguay itself prefers the Swiss formula!

The basic key is a figure to be defined by negotiations. This figure is to be 'inserted' in the formula. It is called "the coefficient" (it is A in the formula below). The figure determines the maximum final rate of tariff.

The formula:  $Z=AX/(A+X)$

Where:

'X' is primary tariff rate.

'A' is the coefficient and maximum tariff rate.

'Z' is the outcome minimum tariff rate (the tariff rate at the end of the transition period).

Source: based on the WTO website

These commodities represent together about 65% of total Syrian agricultural imports (measured by values).

Our underlying assumption is that the decision maker intends to protect each of wheat and meslin, barley, oil-cake and maize, bearing in mind that they are important crops; they are produced domestically and are vital for both food security and industrial security. Cigarettes, however, were treated as a normal commodity, because it is almost perceived as non-agricultural commodity, and it is categorized as 'prosperity commodity'.

**The first scenario:** zeroing custom tariff for all fifteen imported commodities.

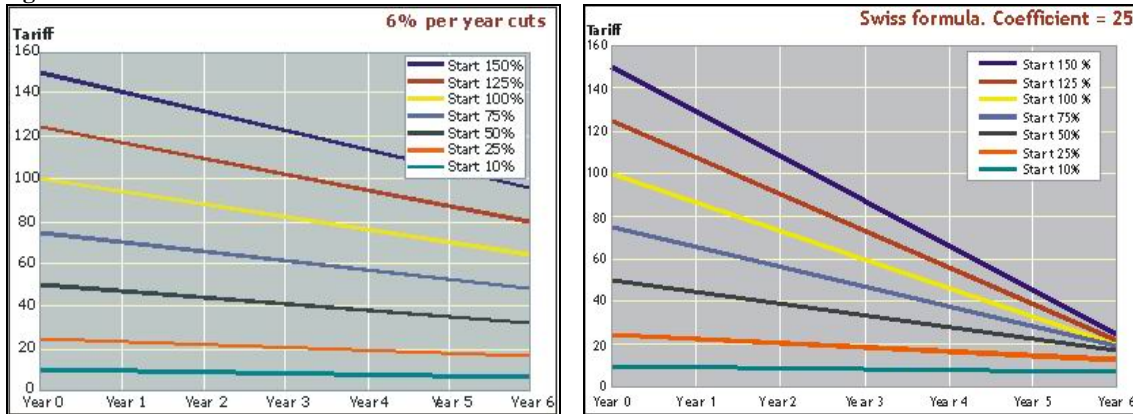
**The second scenario:** exempting the four basic commodities and conducting linear cut of 50% on custom tariff of the rest imported commodities.

**The third scenario:** exempting the four vital commodities and cutting custom tariff of the rest imported commodities by a Swiss formula with coefficient equals 0.16

**The fourth scenario:** cutting custom tariff of the fifteen imported commodities by a Swiss formula with coefficient equals 0.16

**The fifth scenario:** conducting linear cut of 50% on custom tariff of the fifteen imported commodities.

**Figure 18:** the difference between a linear reduction and a reduction with the Swiss formula.



Source: WTO website.

## 5 The methodology

The analysis conducted in the study uses the tool SMART, which is a tool for modeling the partial equilibrium, yet it focuses on one importing market against several trading partners who export their commodities to that market. The tool assesses the impacts of tariff modification scenarios by estimating new values for a set of variables. The tool counts of Armington assumption for modeling the consumer behavior, particularly the incomplete substitution approach that deals with different origins of import. Armington assumption implies that the representative agent maximizes his/her profits through two stages of selection:

- The first stage: assuming that a general price index exists, the agent chooses a level of total expenditure/consumption for a composition of similar commodities from different origins. The relation between changes happened to the index on the one hand, and total level of expenditure on the other hand is defined by a recognized and calculated elasticity that is the elasticity of demand on imports.
- Second stage: within the above composition, the total expenditure is being allocated among different commodities belonging to the same composition according to the relative price of each one. The distributive response level for each one according to its relative price is defined by Armington substitution elasticity.

**Armington approach to model substitution between imports from EU, from world market and from domestic supply**

The Armington approach describes the substitution between goods stemming from different markets by constant elasticity of substitution function (CES). The starting equation is an aggregation function for the demand quantities, the so-called "Armington" equation:

$$DEM = CNS + PRC + FED + INT$$

$$= asp [dpe IMPE^{-\rho} + dpw IMPW^{-\rho} + dpd SLS^{-\rho}]^{-1/\rho}$$

where:

- DEM is demand (final consumption, processing and feed use)
- IMPE are imports from the EU market
- IMPW are exports from the World market
- SLS are sales of goods from domestic supply
- asp is a shift parameter
- dp.. are the so-called distribution parameters:  $dpe + dpw + dpd = 1$
- $\rho$  is the constant substitution elasticity

The Armington equation has constant returns of scale, i.e. if all quantities on the right side are increased by one unit, total demand is increased by the same amount.

Source: Britz, 1998.

### **Revealed comparative advantage (RCA)**

The RCA shows if an exported commodity performs above the average Syrian export product in terms of world market shares. If the product has a large world market share, adjusted for the total participation of Syrian exports in world trade, it is said to reveal a *comparative advantage*.

$$RCA = \frac{E_{is}/E_{iw}}{E_s/E_w}$$

$i$  = commodity index

$E_{is}$  = value of exports of good  $i$  for Syria

$E_s$  = value of total Syrian exports

$E_{iw}$  = value of exports of good  $i$  for the world

$E_w$  = value of total world exports

Source: SAT reports

## **5.1 The tool's mechanism**

The software applies an imaginary simulation and estimates the impact of tariff changes on each of: tariff structures, imports, exports, trading partners, custom revenues, consumer surplus and gained welfare. It also offers some further calculations. The software depends on evaluating the comparative advantage of each product in its original exporting market in order to estimate the impact of tariff reduction in an importing country on its import's structure in terms of the multiple origins of the product. For that purpose, the software uses the measures of "Revealed Comparative Advantage" (RCA). Usually, countries that have similar RCA indications are not expected to promote their bilateral trading flows. However, tariff reduction may reveal additional untraditional exporting markets

. The analysis regarding the five proposed scenarios was conducted using 2009 statistics and counting on TRAINS database, which derive its statistics from UNCTAD database. Followingly, a summary of the main empirical results is introduced.

## **6 The empirical results (impacts on trade)<sup>7</sup>:**

*No results emerged in terms of agricultural exports, yet we will cover the export side in a separated section.*

*The impacts on selected agricultural imported commodities will be shown in details through the review of trade impacts of each scenario.*

First scenario's impacts on trade (full zeroing): This scenario would show noticeable impacts on nine imported commodities, besides minor unworthy impacts on one other imported agricultural commodity. Here are its impacts:

a. Wheat and meslin: Syria's import value of this product is US\$ 113.6 million. This scenario would increase trade (create extra importation) of wheat and meslin by 34%. Identically, it wouldn't ultimately produce trade diversion effect. Russia would be the main benefited country, where its extra trade

<sup>7</sup> The figure of agricultural imports are taken from UNCTAD database, yet there are some considerable differences with figures in NAPC database.

would reach 88% of the extra volume. Bulgaria and Romania would follow Russia respectively. The losses of custom revenues would reach US\$ 4.5 million.

b. Barley: the value of Syria's imported barley in 2009 equals US\$ 192.6 million. Barley trade would benefit slightly from first scenario, where trade creation would reach about 1% as an increase of original trade, while trade diversion would be almost zero. No specific country would benefit from this increase, but the international trade in general would utilize it. The losses of custom revenues would be US\$ 1.9 million.

c. Syria's imports of milled rice are estimated at US\$ 102.9 million. Extra trade of 1% would be created due to this scenario. On the other hand, a trade diversion effect of US\$ 1.1 million would happen. The benefited countries would be Thailand, Italy and Vietnam respectively. Egypt, which currently enjoys zero tariffs in the framework of GAFTA, would be the main loser; about 91% of diverted trade would be on Egypt's own. Syria would lose custom revenue of about US\$ 2 million.

d. Soybean: Syria imported soybean by US\$ 155 in 2009. There would be a slight impact for this scenario in terms of trade diversion. However, its impact is less smaller in terms of trade creation, where it would create an extra trade equals more than 1%. The single benefited country of this extra trade volume would be the USA. Losses of custom revenues would reach US\$ 1.5 million.

e. Sugar cane: Syrian imports of sugar cane valued US\$ 144.4 million. No diversion trade effect for this scenario, but it would create extra trade that reaches 2.1% of the original volume; Brazil would be the only beneficiary. Losses of custom revenues would be US\$ 4.3 million.

f. Sugar: Syria imported sugar by US\$ 108.3 million. Sugar trade would be influenced by this scenario, where an extra trade of about 3% would be created in favor of Brazil. The trade diversion effect would equal US\$ 2.8 million. From this diversion effect, more than 89% would be in favor of Brazil, and a small share would be in favor of Thailand. The major loser in this relevance would be the UAE, which is currently utilizing free access to Syrian markets due to GAFTA agreement. Syria would lose US\$ 4.1 million, which is the custom revenues from sugar importation, as a result of this scenario.

g. Oil-cake: Syria imported oil-cake by 122.2 US\$ million. The diversion impact is very weak, as well as trade creation impact, which amounts at less than 1%. The benefit of trade creation is not dedicated to specific countries, but the whole international trade would be the gainer.

h. Cigarettes: Syria's imports of cigarettes reached US\$ 108 million. This scenario would create considerable additional cigarettes trade; the value of extra trade would be 271% of the value before zeroing tariff. One third of the extra created trade would be allocated to France, followed respectively by these European countries: Switzerland, Cyprus, Germany, Poland, Holland and Spain. In General, the main beneficiary of this scenario would be the EU. The custom tariff losses would be US\$ 21.6 million; this big figure is a result of the high tariff imposed currently on this commodity.

2. Second scenario's impacts on trade (four commodities are protected, and others practice linear cut by 50% ): this scenario would show an estimatable impacts on the importation of four agricultural imported commodities, in addition to an impact on custom revenues regarding another commodity.

a. Sugar cane: there would be a creation of extra sugar cane trade by 1%. The single utilizer would Brazil. The losses of custom revenues would reach US\$ 2.1 million.

b. Sugar: this scenario would create extra trade by 3% in favor of Brazil. There would be also a trade diversion effect of about US\$ 1.4 million; Brazil would utilize 93% of this effect. Syrian losses of custom revenues would be US\$ 2 million.

c. Cigarettes: there is a trade creation impact for this scenario on cigarettes trade; an increase of 135.7%. One third of this increase would be in favor of France, followed by these European countries: Switzerland, Cyprus, Germany, Poland and Holland. There would be no trade diversion effect. Concerning Syrian trade revenues, there would be no losses, but rather, there would be more revenues due

to the increase in imports as a result of reducing the high tariff. In this respect, Syrian custom revenues would increase by US\$ 3.9 million.

d. Milled rice: there would be no trade creation impact for this scenario, but there would be a trade diversion impact of about US\$ 0.5 million. Thailand would utilize this impact, while Egypt would lose it. The loss in Syrian custom revenues would be US\$ 1 million.

e. Banana: there would be no trade creation or diversion impacts for this scenario, but there would be a considerable gain in custom revenues (US\$ 6.8 million). The reason for this gain is the high current tariff.

3. Third scenario's impacts on trade (four commodities are protected, and others practice cut through Swiss formula, the coefficient is 0.16): This scenario would have a trade impacts on the importation of three commodities.

a. Sugar: some trade creation would result from this scenario, and it would to equal 1% of total Syrian imports of sugar. No specific country would utilize that increase, but the total international trade. In addition, Brazil would enjoy a trade diversion impact of US\$ 0.8 million, while the UAE (a GAFTA member country)<sup>8</sup> would lose that amount. Syrian losses of custom revenues would be US\$ 1.2 million.

b. Cigarettes: cigarettes market would be heavily influenced by this scenario, where an extra trade of about 150.8% would be created. One third of this extra trade would be the portion of France; the rest would be allocated to these European countries: Switzerland, Cyprus, Germany, Poland and Holland. There would be no trade diversion impact on cigarettes importation from this scenario, but regarding Syrian custom revenues, they would increase rather than decrease, where this scenario would increase these revenues by US\$ 2.5 million as a result of reducing the high tariff.

c. Milled rice: there would be no trade creation, but there would be a small impact of trade diversion, equals US\$ 0.2 million. Thailand would utilize this effect while Egypt, the current trading partner in the framework of GAFTA, would lose it.

4. Fourth scenario's impacts on trade (the fifteen commodities practice cut through Swiss formula, the coefficient is 0.16): This scenario would have a trade impact on the importation of five commodities, besides an impact of custom revenues related to another imported commodity.

a. Wheat and meslin: in general, there would be an impact of trade creation; the extra created trade would form 6.8% of Syrian total imports, and Russia would be the single utilizer of this impact. Nonetheless, there would be a loss in custom revenues equals US\$ 1 million.

b. Maize: there would be a small impact of trade creation in terms of maize importation; the extra trade would amount at 0.6% of Syrian total imports of maize. The USA would utilize this impact 100% while there would be no important losses regarding custom revenues.

c. Sugar: an extra trade of about 1% would be created, but no single country would utilize that; the entire international trade would do. In addition, there would be a trade diversion impact equals US\$ 0.8 million; the UAE, a current GAFTA member country, would lose that in favor of Brazil. Syrian custom revenues' losses would be US\$ 1.2 million.

d. Cigarettes: concerning cigarettes, there would be a huge created extra trade that equals 150.8% of original trade. The same countries would utilize this impact in other scenarios would also utilize it here; that is, France (a share of more than one third), followed by Switzerland, Cyprus, Germany, Poland and Holland. Also there would be a surplus rather than a loss in custom revenues; this surplus would equal US\$ 2.5 million.

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<sup>8</sup> During the preparation of this study, the Arab League decided to suspend Syria's membership in the League, and consequently suspend its membership in GAFTA, which automatically abolish custom preferences that Arab countries were enjoying in Syrian markets. This, in turn, opens the door for other non-Arab countries to replace the shares of Arab countries in Syrian markets.

- e. Milled rice: there would be no trade creation due to this scenario, but there would be an impact of trade creation equals US\$ 0.2 million. Thailand would utilize that whereas Egypt would lose it.
  - f. Sugar cane: there would be no trade creation or diversion resulted from this scenario. Nevertheless, custom revenues' losses would be US\$ 1 million.
5. Fifth scenario's impacts on trade (the fifteen commodities practice linear cut by 20%): like the fourth scenario, this scenario would have a trade impact on the importation of five commodities, besides an impact of custom revenues related to another imported commodity.
- a. Wheat and meslin: as in previous scenario, there would be an extra created trade that equals 6.8% of Syrian total importation of this commodity; Russia would be the only beneficiary. There would be also a loss in custom revenues by US\$ 1 million due to this scenario.
  - b. Maize: this scenario would create an additional trade of about 2% of Syrian total maize imports. The USA would chiefly benefit from this increase; 61% of that increase would be allocated to the USA. Argentina would follow the USA with a humble share. The scenario wouldn't ultimately have a trade diversion impact, but custom revenues' losses would be US\$ 1 million.
  - c. Sugar: trade creation impact would not exist, but the value of trade diversion impact would be US\$ 0.6 million. The UAE, a current GAFTA member country, would be the loser and Brazil would be the gainer. Furthermore, Syria would lose US\$ 1 million as lost custom revenues due to this scenario.
  - d. Cigarettes: There would be a trade creation of about 54.3% of Syrian total cigarettes imports; the same previous countries and the same French share would be in place. There would be no trade diversion impact. However, Syrian custom revenues would be increased by US\$ 5.1 million due to this scenario; this increase is the highest among all other scenarios.
  - e. Milled rice: There would be no trade creation but trade diversion of about US\$ 0.2 million. The loser would be Egypt and the gainer would be Thailand.
  - f. Sugar cane: as in the case of last scenario, there would be no trade creation or diversion due to this scenario, but custom revenues' losses would be US\$ 1 million.

Note: regarding fiberboard of wood, no results have appeared in the analysis. The reason is that the software automatically removed it because its H.S. tariff line (44.11.10.00) is unavailable in UNCTAD database (probably it's a matter of data unavailability), which is the database used by the software in its analysis. Yet, the database includes the H.S. section 44.11, but using it instead of the required tariff line would produce wrong results, considering that it contains several extra tariff lines. Furthermore, a similar non- H.S. tariff line is available (the H.S. system is the one we chose to define the commodities that have been incorporated in the analysis), and a single analysis can be conducted separately for it, but this would be non-academic and incorrect behavior, particularly in light of the uncertainty in terms of full similarity between the two H.S. and non H.S. tariff lines.

## 6.1 The impact on exports

Theoretically, the effect of trade liberalization on trade balance in general is something difficult to measure or estimate. Nevertheless, it is possible later, after liberalizing trade, to calculate that effect. In principle, it is clear that trade liberalization affects imports more than exports, as all studies confirm. Some studies indicate an enhancement in export sector of countries liberalizing their trades, but some other studies state that there is little reliable evidence to claim a relation between trade liberalization and export growth. Generally, it seems that trade liberalization influences exports more than export-fees reduction does (presuming the existence of the later).

A study published in Oxford University's Economic Journal points that reducing export fees by 10% can have the same effect of trade liberalization on exports<sup>9</sup>. The study also notes that the impact of trade

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<sup>9</sup> Paulino and Thirlwall, 2004.

liberalization in the more protectionist economies would be greater than in economies which already reduced their custom tariffs and import's taxes (the case of Syria), including the negative impact on trade balance. The results of this study figure out that the impact of trade liberalization on import price elasticity is greater than on export price elasticity. The study concludes that trade liberalization covering both exports and imports is to increase the deficit of trade balance by 2% on average.

Concerning Syrian exports, which were chosen in this study (eggs and hatched eggs, tomato, prepared foods obtained from unroasted cereal flakes, mineral water, cotton yarn, sheep, apples, preparations of a kind used in animal feeding, uncarded and uncombed cotton and beet sugar), it is reasonable to conclude that "prepared foods obtained from unroasted cereal flakes" would be affected positively, in light of the fact that it is a manufactured commodity and it would benefit from the surplus of imported raw materials required for its manufacturing. Nevertheless, sugar beet tariff line is not the same tariff line of sugar or sugar cane, and sugar beet has different uses comparing with sugar and sugar cane. Therefore, it is unexpected that its exportation will be influenced by any of the studied five scenarios. Supplementarily, there would be a positive impact on sheep exports due to the increased availability of feed and consequently more births. Similarly, there may be an indirect positive impact on exports of eggs and hatched eggs for the same reason.

The increase in export volume of these four commodities is linked to elasticity of demand for exports and elasticity of supply for exports, besides manufacturing elasticity. These elasticities are to be estimated upon statistical surveys, which is out of this study framework. Nonetheless, in principle, elasticity of consumption has to be estimated in order to know how domestic market would consume of supply surplus available due to tariff reduction. Thereafter, manufacturing elasticity (e.g. regarding soybean imports, elasticities of oil-abstracting industry and feed manufacturing) has to be known in order to estimate the amount of that surplus to be manufactured, which promotes exportational targets. Lastly, export elasticity should be calculated to know the volume of new manufactured product to be exported.

We affirm here that we considered an infinite elasticity of supply for exports in order to obtain the maximum value of trade creation effect and total impact on trade (the sum of trade creation and diversion impacts) resulted from tariff reduction.

The results don't introduce any values for an impact on exportation of the selected exported commodities in the study; this is because the two lists don't share any item (tariff line), where the two lists are completely different.

Due to the fact that we presumed an infinite elasticity of supply for exports, the price impacts on domestic markets would be zeroed; the impact in such a situation would be embedded in increasing the quantities available in the market and not reducing its prices.

## **7 Results discussion**

At the first glance, the results indicate an advanced position for the first scenario in terms of gained economic welfare, which amounts at US\$ 30.4 million, while the last scenario (the fifth) would be the last on this scale, where it would create economic welfare equals US\$ 11 million. Nevertheless, this scenario would cause a losses in custom revenues estimated at US\$ 49.3 million. That means a gap between gained welfare and custom revenues losses of US\$ 19 million. The second scenario, in turn, would cause custom revenues losses of about US\$ 2.8 million, against a gained welfare of US\$ 22.1 million. The third scenario, however, would cause a very slight losses in custom revenues, while it would produce an economic welfare equals US\$ 23.6 million; that is to say it is the most efficient scenario in terms of the comparison of gained welfare and custom revenues losses. The fourth scenario would yield close results, where it would cause a loss of about US\$ 1 million, but a gained welfare of about US\$ 24 million, as shown in the next table.



**Table 3:** the examined scenarios, and their gains and losses.

Scenario	Applied reduction	Custom revenues' losses (US\$ million)	Million S.P.	The change in consumer surplus (US\$ million)	Million S.P.	Gained economic welfare (US\$ million)	Million S.P.
1	zeroing custom tariff for all	49.3	2465	30.4	1520	30.4	1520
2	exempting the four + 50% cut for the rest	2.8	140	22.1	1105	22.1	1105
3	exempting the four + Swiss formula cut for the rest (C.=0.16)	0.1	5	23.6	1180	23.6	1180
4	Swiss formula cut (C.=0.16)	1.1	55	23.9	1195	23.9	1195
5	0.2 cut for all	0.1	5	10.9	545	10.9	545

According to the above table, the third scenario (i.e. protecting wheat, barley, maize and oil-cake + Swiss Formula reduction for the rest with C=0.16) seems the most efficient. However, evaluating the scenarios is multi-dimensional, and there are more than one dimension to be considered. Subsequently, if the impact of trade agreements is put on the table, WTO accession would have a trade creation impact whatever. Trade creation impact for each commodity has been reviewed by scenarios in this chapter.

### 7.1 Estimating trade creation impact

In general, trade creation effect would reach its maximum level in the first scenario. This is not surprising because zeroing tariff would produce the greatest possible impact in terms of trade creation. Expressed as extra created trade, total trade impact of this scenario would amount at 270%. The first scenario is followed by third and fourth scenarios on this scale; each of them would create extra trade of about 151%. Second scenario would create extra trade of 136%, whereas the fifth scenario wouldn't create extra trade more than 54% only.

**Table 4:** Syrian imports' values (million S.P.) and the extra trade (%) would be created due to each one of the five scenarios.

Syrian imports' values	Wheat and meslin	Barley	Maize	Milled rice	Soybean	Sugar cane	Sugar	Oil-cake	Cigarettes	Total
US\$ million	113.6	192.6	324	102.9	155.0	144.4	108.3	122.2	108	1371
Scenario 1	34.0%	0.7%	9.6%	1.0%	0.7%	2.1%	3.0%	0.8%	271.4%	The increase in total trade (%)
Scenario 2	-	-	-	-	-	1.0%	1.5%	-	135.7%	
Scenario 3	-	-	-	-	-	-	0.9%	-	150.8%	
Scenario 4	6.8%	-	0.6%	-	-	-	0.9%	-	150.8%	
Scenario 5	6.8%	-	1.9%	-	-	-	-	-	54.3%	

Creating extra trade due to joining a FTA is useful for a concerned economy. Therefore, on the scale of trade creation, first scenario would be the best. Nevertheless, it is apparent that this scenario is unrealistic, and it was included just to get an image of the sharpest effect on trade that could be achieved due to a

possible WTO accession. Another reason for including this scenario was to recognize the most sensitive commodities. Accordingly, the most efficient scenario, apart from first scenario, would be the third or fourth scenario, where each of them would generate extra trade of about 151%.

Note: As mentioned before, there are disparities among Syrian trade figures in UNCTAD database and their counterparts in NAPC database. Consequently, if the figures of NAPC were considered in the analysis, the above percentages would represent greater absolute numbers regarding wheat, milled rice, soybean, sugar cane, sugar, oil-cake and cigarettes. Yet, the percentage concerning barley would represent smaller number, while nothing would change in terms of maize.

### 7.1.1 Countries to benefit from trade creation

Mainly, countries listed below in the table would benefit from the impact of trade creation<sup>10</sup>:

**Table 5:** Countries to benefit from trade creation, categorized by commodities.

Wheat and meslin	Maize	Soybean	Sugar cane	Sugar	Cigarettes
Russia	USA	USA	Brazil	Brazil	France
Bulgaria	Argentina				Switzerland
Romania	Romania				Cyprus
	Bulgaria				Germany
					Poland
					Holland
					Spain

Liberalizing trade of barely, milled rice and oil-cake would be beneficial for the international trade as a whole, rather than specific country.

Still, how far each one of the above countries would benefit is linked to the intended scenario, as the following table clarifies.

<sup>10</sup> Beneficiary countries of less than US\$ 1 were ignored in this table.

**Table 6:** the value that each beneficiary country would gain, by scenarios.

	Scenario no.	Beneficiated value (US\$ million)				
		1	2	3	4	5
Beneficiated countries	Russia	35.8	-	-	7	7.2
	Bulgaria	4.6	-	-	-	-
	Romania	3.2	-	-	-	-
	USA	21.4	-	-	1.3	4.3
	Argentina	11.4	-	-	-	2.3
	Brazil	6.1	3.1	-	-	-
	France	99	49.4	54.9	54.9	19.8
	Switzerland	70.8	35.4	39.3	39.3	14.2
	Cyprus	62.6	31.3	34.8	34.8	12.5
	Germany	25	12.4	13.8	13.8	5
	Poland	23.4	11.7	13	13	4.7
	Holland	11.2	5.6	6.2	6.2	2.2
	Spain	1.2	-	-	-	-

Note: colored cells represent the benefit of concerned countries due to cigarettes tariff reduction by Swiss formula (third and fourth scenarios).

At a glance to the table 6, one can easily note that France would be the first beneficiary in all scenarios, Switzerland would be the second and Cyprus would be the third. Russia, nevertheless, would be the fourth in case of tariff zeroing (first scenario) or linear reduction of 20% to all commodities (fifth scenario). That is, Russia would be the fourth beneficiary when zeroing tariff or cutting it linearly with no exceptions. Otherwise, Germany would be the fourth beneficiary.

On the other hand, it is noticed that countries to utilize cigarettes trade liberalization in the third and fourth scenarios (i.e. when protecting or unprotecting the four vital commodities) would utilize the same values, which may indicates that cigarettes are not linked to other commodities, and there is no complementary relation nor is there substitutive relation with other commodities.

## 7.2 Estimating trade diversion impact

Chiefly, two imported commodities would demonstrate trade diversion impact if their trade is liberalized: milled rice and sugar. Concerning milled rice, trade diversion beneficiary would be Thailand, Italy and Vietnam in case of the first scenario, and only Thailand in case of other scenarios. The loser would be Egypt, which enjoy currently free access to Syrian markets in the framework of GAFTA. Regarding Sugar, The beneficiary would be Brazil and Thailand in case of the first scenario, and only Brazil in case of other scenarios. The loser would be the UAE. The following table shows the impact of trade diversion on each of milled rice and sugar trades.

**Table 7:** trade diversion impact on the importation of milled rice and sugar.

Scenario No.	Impact on milled rice trade (US\$ million)	Beneficiary country	Loser countries	Impact on sugar trade (US\$ million)	Beneficiary country	Loser countries	Total (US\$ million)
1	1.1	Thailand, Italy, Vietnam	Egypt (about US\$ 1 million)	2.8	Brazil (more than US\$ 2.5 million), Thailand	UAE (more than US\$ 2.7 million)	3.8
2	0.5	Thailand	Egypt	1.4	Brazil (more than US\$ 1.2 million)	UAE (more than US\$ 1.3 million)	1.9
3	0.2	Thailand	Egypt	0.8	Brazil	UAE	1.0
4	0.2	Thailand	Egypt	0.8	Brazil	UAE	1.0
5	0.2	Thailand	Egypt	0.6	Brazil	UAE	0.8



## Conclusion

If the intended criteria is trade creation, third scenario or fourth scenario will be the most relevant. However, if the perspective is the gained welfare against losses in custom revenues, the third scenario will be the best. Therefore, it is logical to conclude that the best scenario in general would be the third one, which protects some important commodities but cut tariffs of other commodities relying on a harmonized approach rather than a linear approach. This primary result, which was demonstrated by the research in this study, needs further investigation and more detailed examination to define the most proper alternative within the framework of third scenario. We suggest making this the task of future studies, which should build upon the results concluded in this study. That is, this study would be a pilot study that several consequential detailed studies are to be derived from it.

On the other hand, France would be the first beneficiary of trade creation impact whatever the relied scenario is. Russia would be a beneficiary, but occupying the fourth rank, in case of first or fifth scenarios (zero tariff or linear cut without exemptions). Still, in shed of the pale horizon of Syrian-EU trade relations, and considering that the bilateral trade may fall, Russia is a candidate for greater role in terms of Syrian trade, even if the harmonized approach and the exemptions are in place. Also, it should be noted here that the used tool in this research doesn't take into account the political relations among countries, but rather, it has a pure technical perspective.

Regarding commodities, cigarettes would occupy the first rank among influenced commodities due to trade liberalization, where an extra cigarettes trade of 54% to 271% would be created. Wheat and meslin would rank second, where the extra created trade would reach 34% at most. The third rank is to be occupied by maize, followed assumably by sugar. The commodities which would bear minimum level of influence are barley and soybean.

In general, Russia seems to be the major beneficiary from probable wheat trade liberalization, followed by some eastern European countries, while the USA would be the main beneficiary from liberalizing maize trade, followed by Argentina. Nonetheless, the almost single beneficiary from liberalizing each of sugar and sugar cane trade would be Brazil. Furthermore, a number of European countries would benefit from cigarettes trade liberalization. Lastly, Thailand would dominate the gains from liberalizing milled rice trade, but Italy and Vietnam would partly benefit as well.

On contrary, Some Arab countries would lose some of their market shares in Syria due to trade liberalization, particularly Egypt and the AEU.

It is clear that cigarettes is the most sensitive commodity in terms of tariff changes, while wheat and meslin seems little sensitive towards these changes, where it didn't show much change when first scenario and fourth scenario were applied. Maize, nevertheless, showed some sensitivity against tariff modifications, as noticed when fourth and fifth scenarios are applied. Sugar cane and sugar showed less sensitivity regarding tariff changes, as can be noted from monitoring the impacts of second and third scenarios on them. Milled rice and oil-cake are weakly sensitive.

In terms of cigarettes, which enjoys a custom tariff rate of 20%, the Swiss formula (i.e. third and fourth scenarios) would create an extra trade that overpasses the amount created due to a linear cut of 50% (second scenario). However, in terms of sugar, whose custom tariff rate is 7%, Swiss formula would cut less than what a linear cut of 50% would do. This illustrates the functionality of Swiss formula, which cut more when commodities of higher tariff rates are concerned, and less when commodities of lower tariff rates are intended.

Lastly, liberalizing trade of cigarettes and banana (but not zeroing in case of cigarettes) would not cause any custom revenue losses, but rather, it would bring in more custom revenues. In particular, the smaller the tariff cut is, the higher the expected gains in cigarettes' tariff revenues are.

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## Annexes

**Annex 1: tariff lines (in Harmonized System) that represent selected agricultural export commodities in this study.**

Tariff lines	H.S.
(0407.00.90)	eggs and hatched eggs
(0702.00.00)	Tomatoes
(1904.20.00)	prepared foods obtained from unroasted cereal flakes
(2202.10.00)	mineral water
(5205.12.90)	cotton yarn
(0104.10.00)	Sheep
(0407.00.10)	eggs and hatched eggs
(0808.10.00)	Apples
(2309.90.90)	preparations of a kind used in animal feeding
(5201.00.00)	uncarded and uncombed cotton
(1701.12.90)	beet sugar
(0407.00.90)	eggs and hatched eggs
(0702.00.00)	Tomatoes
(1904.20.00)	prepared foods obtained from unroasted cereal flakes
(2202.10.00)	mineral water

**Annex 2: tariff lines (in Harmonized System) that represent selected agricultural import commodities in this study.**

Tariff lines	H.S.
(1701.11.10)	Raw cane sugar
(1005.90.00)	Maize
(1201.00.00)	Soya beans
(1001.90.90)	wheat and meslin
(2304.00.00)	Oil-cake and solid residues
(1701.99.00)	chemically pure sucrose
(2402.20.00)	Cigarettes
(1006.30.00)	Semi-milled or wholly milled rice
(1003.00.00)	Barley
(4411.10.00)	Fiberboard of wood
(0803.00.00)	Bananas
(1511.90.11)	Palm oil
(1207.40.00)	Sesamum seeds
(1512.11.90)	Crude oil
(1006.20.00)	Husked rice