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Multilateral Agricultural liberalization: What's in it for Africa?

By Mohamed Abdelbasset Chemingui,
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Abstract

This paper examines the implications for African economies of the possible outcomes from the ongoing agriculture negotiations in the Doha Round. The paper defines scenarios that capture key elements of the modalities negotiations and undertakes simulations using a global dynamic general equilibrium model to examine the impact of multilateral agricultural trade reforms on African economies. The scenarios vary in their level of ambition in the market access pillar through both the level of tariff cuts in the different tiers and the level of sensitive sectors defined both for developed and developing economies. Results show that ambitious coefficients in the market access pillar remain the best outcome for Africa. Even what might seem to be an insignificant definition of sensitive products for developed countries erodes potential benefits from deep tariff cuts for African countries. This suggests that utilizing sensitive products tariff lines by developed countries not only dampens the expected positive outcomes for agriculture negotiations in favour of Africa but could also actually wipe out such gains. The results further confirm findings of other studies showing that tariff cuts for agricultural goods yield higher gains than elimination of subsidies, and this applies mainly to net food importing developing countries. Thus, reduction of subsidies should go hand-in-hand with agricultural tariff reductions in order to ensure win-win outcomes.

JEL Codes: Q17, D6, C68, N57

Key words: Agriculture in International Trade, Welfare Economics, Computable General Equilibrium Models, Africa.

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I. Introduction

The need for African countries to continue reforming their agricultural policies is not in doubt. The level of agricultural productivity in Africa remains weak in comparison to other regions, making agricultural reforms imperative. Whereas the agricultural sector related reforms are to a large extent domestic in nature, there is also a significant component that relates to the international agricultural trade. Moreover, domestic agricultural policies in Africa must also take cognizance of the international context in which they are to be applied. The multilateral trading rules on agricultural production and trade are therefore key to the success or failure of the African agricultural sector in playing its role in the continent's development. As a result, it is important for African countries to continue to participate actively in the current multilateral negotiations on agricultural trade under the Doha Development Agenda (DDA) taking into consideration the parameters as agreed and set out in the Hong Kong Ministerial declaration. Current agricultural trade barriers together with exports subsidies and domestic support have led to inefficiencies in the allocation of resources in both developed and developing countries. There is a consensus that eliminating global policy distortions in agricultural markets could lead to significant welfare gains. Nevertheless, concerns have been expressed on the potential short and medium-term negative effects on some African countries, while some other African countries will only partially benefit from the removal of these distortions. The sensitivity of the African economies to elimination of global policy distortions in agricultural markets is explained by the crucial role that this sector is still playing in these economies. Its contribution to Gross Domestic Product (GDP) varies among countries of the continent, ranging from a high of about 50 percent to 60 percent for Liberia and Guinea Bissau to less than five percent for South Africa and Botswana. However, it is important to note that the limited contribution of agriculture to GDP in some African countries does not imply its irrelevance in employment generation. Most countries tend to have a sizeable agricultural population (20% to 90%) with a few such as Libya and South Africa where it accounts for less than 15 percent.

Given the high contribution of the agricultural sector in African economies, possible modalities for implementing the Hong Kong declaration on agricultural trade liberalization will certainly affect the economies of these countries much more than any other region in the world. These effects will include implications for growth and trade balances as well as employment and poverty patterns in the region.

Agriculture is at the heart of the Doha Round negotiations even though it accounts for an average of only 10 percent of world trade, because of the political significance of the sector in both developed and developing countries. Agricultural policies in the European Union (EU) and the United States of America (USA) remain the dominant issue at the Doha Round negotiations. Both have policies that are significantly protectionist, imposing tariffs and quotas on agricultural imports. In addition, they also provide production subsidies to their producers. The total estimated value of developed country

agricultural subsidies and protections is \$300 billion; six times the total foreign aid from these countries.¹ Direct production subsidies in the EU and the USA have been estimated at around \$100 billion and \$50 billion² respectively. The effect of these subsidies is to diminish market access for developing countries into developed countries markets, while driving global prices of agricultural products down by encouraging excess production.

This situation has led to three main effects. The first two effects are linked to downward pressure on global prices of some agricultural products as a result of agricultural policies implemented in the developed countries. Accordingly, these policies have artificially increased the competitiveness of developed countries' agricultural products on international markets, leading to reduction in the export levels of some African countries competing on the same products. The cases of cotton and bananas, which are produced and exported by many African countries, are among this category of products. However, for many other African countries that are net importers of other agricultural products, such as cereals and sugar, they have benefited from import prices that are much lower than the real costs which would have prevailed in a non-distorted market situation. These lower prices have allowed some African countries to reduce their food bill. The third effect relates to the high level of tariff and non-tariff protection applied in most developed countries as part of their agricultural policies. These barriers have adversely affected the degree of openness of the developed countries' markets to agricultural products, which are traditionally exported by African countries; this may include fruits and vegetables.

For these reasons, the agriculture sector in African countries is inseparable from any changes in the world market and from agricultural policies implemented in rich countries. Under these conditions, it is crucial to analyse to what extent and cost, the economies of the African continent will be affected by any of the potential modalities of implementing the Hong Kong declaration on reducing global distortions in agricultural trade. While the Hong Kong declaration contained some gains on agriculture³, most of the crucial decisions on agriculture were deferred. On the main agricultural issues, where Africa stands to gain most, significant work remains to be done within a tight deadline for agreement on modalities, and comprehensive country schedules by 31 July 2006 (a deadline which was missed). Moreover, the text offers few opportunities for increased access to Northern markets, which are able to protect an unspecified number of 'sensitive products' — a loophole that drastically reduces the value of any overall reductions. Thus, the issues are complicated and the ongoing negotiations are crucial for African countries to enhance their participation in international trade by improving their competitive edge in developed countries' markets. And so the question remains, how should African countries position themselves with

1 World Bank, Cancun Trade Talks an Opportunity to Lift Millions out of Poverty, September 4, 2003.

2 Ibid.

3 For example, while the year 2013 is settled as an end-date for export subsidies, it is still not clear how much developed countries have to reduce export subsidies before this deadline. Furthermore, there was also strengthened language on domestic support which, should lead to cuts into rich country subsidies, not just the difference between bound and applied levels, but the wording gives no real insurance concerning the closing down of the loopholes that enable countries to exempt their subsidies via the Green Box. Although the wording is ambiguous, the text opens the way for tightening disciplines on the Blue Box.

respect to the ongoing multilateral negotiations on the status of agriculture in world trade? What are the potential effects of agricultural trade liberalization on welfare, employment, and growth? These issues have to be addressed for a better understanding of the challenges and opportunities for Africa's agriculture in the context of multilateral trade reforms. This paper attempts to address these questions, utilizing quantitative tools related to trade liberalization analysis.

In a situation where a large number of distortions are present, the theory of international trade is inadequate if used alone and one must use computational tools in an attempt to assess and unravel the consequences of the envisaged multilateral reforms from the Doha Round. Computable general equilibrium models (CGE) are usually used for this. Their main advantage lies in offering a coherent framework for analysis based on highly detailed statistics and a fully explored corpus of economic theory. The extensive use of these models in developing countries is mainly due to the fact that they can be run on the basis of a one-year database. So far, there is a large body of qualitative as well as quantitative research regarding the effect of multilateral agricultural trade liberalization (Anderson et al, 2006; Bouet et al., 2003 and 2004; Keeney et al., 2005). However, there is a lack of consistency in the modelling framework in the existing literature. A large number of papers on African countries use general equilibrium modelling, most of the time in static framework, while the implementation of DDA will be progressive over many years. This sequential dimension of the implementation of DDA in relation to the agriculture sector is very important given the adjustment effect of any given economy during the reform phase, which cannot be captured by static models. Hence, both the issue of coordination of policies and the net effect over time of these policies is also important and justifies the use of dynamic models. Furthermore, single-country models are not appropriate to analyse the impact of multilateral trade agreements, and by taking ad hoc estimation of international price changes and foreign demand many provide misleading, incomplete, and inconsistent results. For these reasons, a global framework is the best tool for assessing the effects of multilateral liberalization, since it produces interactions between countries, on international price and bilateral demand changes.

This work complements the previous modelling efforts undertaken by the Economic Commission for Africa (see for instance ECA, 2005) to assess the effects of multilateral trade liberalization in agricultural products on African countries by assessing more plausible scenarios on the extent and ways to implement the Hong Kong ministerial declaration on agricultural trade liberalization.

The analysis is organized as follows. Section II highlights the importance of agriculture sector in the African economies. Section III analyses the challenges faced by African countries under the DDA negotiations on agricultural trade and Section IV describes the main features of the agreement reached during the Hong Kong ministerial meeting. Section V presents the model used to assess the impact of the various proposals of implementing DDA on agricultural trade. Section VI looks at the impact of the proposals envisaged. The final section presents the conclusions.

II. Agriculture sector in Africa

Africa's agricultural sector is quite diverse and its economic contribution is important considering the stage of development of the countries of the continent. Its contribution to GDP ranges from a high of more than 50 percent for Burundi and Central African Republic to a low of less than five percent for South Africa and Botswana. The importance of the agricultural sector is more pronounced for sub-Saharan Africa, here it employs some 70 percent of the region's work force and generates an average 30 percent of the region's GDP. This high contribution to GDP is also reflected in the sector's contribution to economic growth. In the year 2003, the contribution of the agricultural sector in economic growth is also relatively diverse ranging from a high of more than 80 percent for Mali to as low as zero percent for Zimbabwe. Table 1 shows some basic indicators on the importance of agricultural sector in many African economies. The continent can be divided into three main categories to illustrate this importance. The first category includes countries that have succeeded in diversifying their economies, and where agriculture contributes less than 20 percent of GDP. The second category features countries highly dependent on the export of natural resources, such as oil and gas, without being able to give the necessary importance to the diversification of their economies (agricultural contribution to GDP less than 10%). The third and last category includes countries that have not been able to diversify their economies and where agriculture continues to play a dominant role, contributing more than 20 percent of GDP.

For the first category of African countries, despite the continuous decrease of the agricultural sector's contribution to GDP, due to the development of the service and industry sectors, the agricultural sector continues to play an important role⁴. Its importance can be seen in the level of the active population that it employs, the reduction of the trade balance deficit, and especially the regional equilibrium in these countries. The agricultural sector keeps on limiting the rural-urban migration exodus, and ensuring supplementary incomes to an important section of the population that works in the non-agricultural sectors. Tunisia and Morocco figure among the countries of this group. For both, and despite the continuous decrease of their agricultural sector's share in their economies, its contribution in total economic growth remains significant. Thus, in 2003, the agricultural sector contributed up to 10 percent of the total growth of Tunisia and zero percent for Morocco⁵. In other words, for an increase in the GDP equal to 6.5 percent realized by Tunisia in 2003, 0.65 points of the increase came from agriculture. The agricultural

4 15.6 % and 11.9 % of the contribution to the GDP and 8.7 % and 6.4 % in the total exports, respectively for Tunisia and Morocco.

5 The year 2003 was a drought year and agricultural production declined intensively. This is why this year does not reflect the real importance of the agricultural sector in the Moroccan economy given that agriculture drives Morocco's total GDP as it accounts for nearly 20 percent of the country's total GDP and employs around 40 percent of the local labour force during the past four decades. Thus, when annual growth in agricultural GDP averaged 6.7 percent between 1980 and 1990, annual growth in total GDP averaged 4.2 percent and when growth in agriculture dropped to -1.3 percent between 1990 and 2000, growth in total GDP averaged 2.2 percent. Furthermore, in 1999 and 2000, average growth in agricultural GDP were -19.8 and -14.0 respectively as a result of drought conditions, total GDP declined by 0.7 in 1999 and grew only by 0.8 percent in 2000 (Chemingui, 2005).

sector still plays an important role in the labour market and in the reduction of unemployment. Within this framework, almost 39 percent of the active population in Tunisia and Morocco is still employed in agriculture.

For the second group of African countries whose economies predominantly export natural resources, the agricultural sector needs to be developed as part of a global strategy of diversification. In fact, since the beginning of the 1970s, these countries have been able to achieve high living standards, compared with other African countries, and their economies have progressively moved towards economies dominated by the public sector. The wages granted by the public sector to the employees, have been over-valued and have induced the abandonment of agricultural activity, which does not generate competitive incomes. However, confronted by the sudden drop of the prices of oil products, since the middle of the 1980s and throughout the 1990s, the governments of these countries were no longer able to afford the necessary resources to carry on financing a growing public sector. Besides these budgetary problems, the labour supply kept accumulating without sufficient demand. The development of the agricultural sector has become a priority in the development strategies of these countries since the beginning of the 1990s, and the objectives that have been assigned to the agricultural sector have kept on broadening. Thus, for this group of countries, which are least dependent on the agricultural sector, the development of this sector takes on specific importance.

The third category of countries groups those in which the agricultural sector continues to play a prominent role in their economic and social development. Given its weight in the GDP (more than 20%) and its role at the social level (employment of more than 50% of the active population), the agricultural sector contributes up to 80 percent of total exports of products. For these countries, the development of the agricultural sector and consolidation of its competitiveness is considered vital. These countries are also characterized by high levels of unemployment and poverty, with un-diversified economies. The development of the agricultural sector is considered as the key means to improve their situation.

From this brief discussion of the importance of the agricultural sector in the African economies, it is evident that even in the countries that are least dependent on this sector its development takes on a particular importance. Thus, in the countries, where the economies are most diversified, the agricultural sector continues to play an important role in the macro-economic balances, alongside its social importance. Concerning the countries that mainly depend on export of natural resources, the population growth and the volatility of international prices of these products makes the diversification of their economies the best option for dealing with the economic challenges they face. In this context, the development of the agricultural sector also seems to be a pillar of this strategy. Finally, for the African countries that are most dependent on the agricultural sector, the development of this sector is all the more vital for their economies, which are confronted by various structural problems.

Africa is considered as a net food-importing region, except for a few countries such as South Africa. The largest share of imported products consists of cereals, livestock and dairy products, and fruits and vegetables to a lesser extent. Exports of agricultural products constitute an important source of foreign currency for several African countries. Its contribution to total merchandise exports ranges from a high of more than 80 percent for Sudan and Burundi to a low of less than one percent for Gabon and Equatorial-Guinea. The leading export destination is the EU and the most important commodities exported fall within the following groups: fish and crustaceans, fruits and nuts, cotton, and vegetables.

Despite signs of economic recovery, and as a result of higher energy prices, most African countries still suffer from a burden of structural problems as well as social and economic low achievements. In fact, in addition to the high levels of unemployment and poverty incidences, African countries are moving slowly towards global and regional integration. Most of these challenges could be related in one way or another to the performance of the agriculture sector, given its significance. A better market access to developed countries' markets and a significant reform in agricultural policies in these countries, will surely improve the competitiveness of African agricultural products in international markets, which, could lead to a higher and sustainable economic growth.

Table 1: Basic Indicators on the Importance of Agriculture in African Countries

	Agriculture as share of GDP, %	Labour Force in Agriculture as % in total	Agricultural Exports as % of total goods exports	Real agricultural GDP growth rate (%)	Real growth of GDP at market prices (%)	Contribution of agriculture sector to GDP growth rate (%)	Contribution of the rest of activities to GDP growth rate (%)
	2003	1990	1997	2003	2003	2003	2003
Algeria	8.6	26.1	0.6	4.0	3.9	10	90
Angola	8.2	74.5	0.1	11.7	3.4	30	70
Benin	35.7	63.5	57.2	5.0	5.6	30	70
Botswana	2.4	19.7	3.9	0.3	5.4	0.0	100
Burkina Faso	31.0	92.4	44.6	0.0	6.5	0.0	100
Burundi	51.0	14.8	85.2	-0.8	-1.2	30	70
Cameroon	43.1	69.7	21.9	6.8	4.5	70	30
Cape Verde	6.8	31	0.0	1.5	5.0	0.0	100
Comoros	41.1	77.3	10.0	2.9	2.1	60	40
Congo	6.2	48.7	0.8	6.3	0.8	50	50
Egypt	..	39	3.0	..	4.5		
Equatorial Guinea	4.6	74.7	0.9	-11.7	14.7	0.0	100
Eritrea	12.6	80.5	1.1	10.8	3.0	50	50
Gabon	8.1	51.6	0.3	5.4	2.8	20	80
Gambia The	27.0	82	6.3	19.7	6.7	80	20
Ghana	35.2	62.2	27.6	4.6	5.2	30	70
Guinea	23.4	87.2	6.3	2.9	1.2	60	40
Kenya	14.0	19.1	38.9	1.5	1.8	10	90
Liberia	52.8	72.3		..	-31.0		
Libya	..	10.9			
Madagascar	26.8	78.2	11.8	1.3	9.8	0.0	1.0
Malawi	36.3	54	63.1	7.3	4.4	60	40
Mali	35.1	85.8	41.9	17.7	7.4	80	20
Mauritania	16.8	55.2	9.4	0.2	5.4	0.0	100
Morocco	15.6	39	8.7	1.0	3.4	0.0	100
Mozambique	24.1	82.7	9.9	7.7	7.1	30	70
Namibia	9.7	53.4	11.6	3.2	3.7	10	90
Niger	39.9	7.8	15.0	6.0	5.3	50	50

	Agriculture as share of GDP, %	Labour Force in Agriculture as % in total	Agricultural Exports as % of total goods exports	Real agricultural GDP growth rate (%)	Real growth of GDP at market prices (%)	Contribution of agriculture sector to GDP growth rate (%)	Contribution of the rest of activities to GDP growth rate (%)
	2003	1990	1997	2003	2003	2003	2003
Nigeria	26.1	2.9	3.2	4.1	10.7	10	90
Sao Tome and Principe	17.1	..	26.3	3.2	4.5	10	90
Senegal	16.8	76.7	4.5	19.2	6.5	50	50
Seychelles	2.6	..	0.5	1.0	-6.3	0.0	100
Sudan	30.5	69.5	86.3	..	6.0		
Swaziland	7.6	24	27.6	0.3	2.4	0.0	100
Tanzania	41.3	84.2	31.4	4.0	7.1	20	80
Tunisia	11.9	38.9	6.4	6.5	6.5	10	90
Uganda	29.7	89.6	48.3	2.3	4.7	10	90
Zambia	20.7	74.7	4.3	5.0	5.1	20	80
Zimbabwe	15.7	24.3	36.5	-4.1	-14.0	0.0	100

Source: WB (2005) and authors' calculations.

III. Africa's Concern in DDA Negotiations in Agriculture

Since the launch of the agriculture talks in 2001 under the Doha Development Agenda (DDA), the African Group of WTO negotiators has submitted some sets of proposals. Many African countries have also submitted individual proposals, or joined with other countries and blocs on specific issues. Many of the African proposals address concerns in three of the areas mandated for agriculture trade reform at Doha: securing “substantial improvements” in market access, reduction (“with a view to phasing out”) all export subsidies and “substantial reduction” of domestic support deemed “trade distorting.” In what follows, these concerns are highlighted to reiterate the importance of an ambitious Doha Round outcome in agricultural negotiations.

The desire for effective market access for African export products has been one of the major issues for the African countries. Thus, improving market access for agricultural exports remains one of the key concerns of African countries. While it is acknowledged that African countries enjoy preferences under different schemes that are currently in place, such as African Growth and Opportunity Act (AGOA) and the Everything-But-Arms (EBA), or even the Cotonou preferences, it is also the case that there are significantly high tariffs, tariff peaks and tariff escalation, which limit African exports. African countries are therefore keen on a Doha Round outcome that would effectively eliminate tariff peaks and lead to significant reductions on all tariffs, especially in those products of the continent's export interests. And in order to allow the African countries to add value to the many primary products that the continent currently exports, there has been concern that the final modalities for tariff reduction should also deal with the problem of tariff escalation. Tariff escalation has tended to create a disincentive for African countries to carry out vertical diversification that would lead to the production of products for exports that are of higher value in the value chain.

Domestic support programmes, export subsidies and other export competition issues are another area of major concern for African countries in the on-going negotiations. These subsidies, be they for domestic production support or for the exporters, have been shown to have substantial distorting effects on international markets. These schemes are prominently used by developed countries in support of their agriculture sectors. The costs of the distortions from these subsidy programmes are borne by other agricultural producers and exporters, especially in developing countries including the LDCs, who may not be in a position to receive similar support from their governments. The distortion effects on the international cotton market of the subsidies provided to cotton farmers in the US has been a classic example of how domestic policies in developed countries end up hurting producers in poorer countries.

African countries are therefore seeking ambitious agricultural reforms from the Doha Round in order to eliminate the distortions caused in international markets by agricultural support measures. Elimination of the export subsidies and substantial reduction of the domestic support measures is seen as one way through

which African countries can benefit from the comparative advantage that they possess in agricultural production. Moreover, the phasing out of these subsidy schemes would also be fundamental in the creation of a level playing field, even in the African agricultural market itself, where African producers would be in a position to increase the share of intra-African trade on agricultural commodities.

IV. The Hong Kong's declaration on agriculture negotiations:

The collapse of the Cancun WTO ministerial meeting was remedied by an agreement in Geneva in July 2004 setting out a framework for the remainder of the current round. Since then, however, progress in Geneva was minimal. Then in October 2005, in order to rekindle momentum just before the Hong Kong WTO ministerial meeting, the USA and the EU made proposals on agriculture that purported to offer major progress on the three 'pillars' of the agriculture agreement. The EU focused on what it called a 'development package' of measures such as agreeing an amendment to the TRIPS (Trade-Related Aspects of Intellectual Property Rights) agreement to improve access to patented medicines for poor countries; duty-free, quota-free market access for LDCs (least developed countries); 'aid for trade'; and measures to address the problem of 'preference erosion'. However, sceptics portrayed the development package as an attempt to divert attention from the need for reform of the Common Agricultural Policy (CAP). Although these proposals were judged not enough or just a mere diversion, (offering few or no real cuts in subsidies or tariffs and insisting on numerous loopholes to allow governments to continue to heavily subsidize agriculture and dump the surplus on world markets), they led to revived discussions with other trading partners and raised hopes of progress in Hong Kong.

The Hong Kong Ministerial was supposed to set up an agreement for the current Doha round of trade talks. In a report entitled "*What happened in Hong Kong?*" (Oxfam 2005), it is argued that unless the EU and the US make immediate and genuine offers to reform their domestic farm subsidies and open their markets to developing countries, then the talks could quickly become mired in a long slow round stretching into the next decade. As an indictment to the developed countries, Oxfam states: "This would prolong an unjust world trading system that condemns developing countries to poverty."

The final ministerial declaration contained some minor gains on agriculture, especially setting 2013 – clearly linked to the period when the current EU common agricultural policy (CAP) reforms will be fully operational – as an end date for export subsidies (paragraph 6)⁶. However, what matters is the definition of 'substantial', in terms of how much export subsidies have to be reduced before 2013. Another outcome consist in providing developing countries with extra flexibility to protect their small farmers (paragraph 7)⁷. The final declaration also set a deadline of April 30 for working out a detailed blueprint for the negotiations, which would include specific figures for reducing agricultural tariffs and subsidies. Unfortunately, this deadline has since been missed. The declaration also introduces a direct link between the Doha round negotiations on agriculture and industrial market access. The text asks negotiators to "ensure that there is a comparably high level of ambition in market access for agricultural and NAMA".

6 Moreover, the text contains deliberately vague language calling on members not to wait until the last moment, but to 'frontload' subsidy cuts early in the period between an agreement and 2013

7 While not accepting the G33's proposal that developing countries should be able to designate up to 20 percent of all tariff lines as special products; it merely talks of an 'appropriate number' to be negotiated in Geneva in 2006.

It states that this ambition is to be achieved in “a balanced and proportional manner” consistent with the principle of special and differential treatment. This means that tariff cuts in agriculture and industrial market access should be about equal. Alternatively, it could mean that countries should not have to reduce their industrial tariffs to the degree that developed countries cut their agriculture tariffs (see Inside US trade, 2005).

As far as domestic support (paragraph 5) is concerned, (which should lead to cuts into rich country subsidies, not just the difference between bound and applied levels) there are no real guarantees on closing down the loopholes that enable countries to exempt their subsidies via the Green Box. Although the wording is ambiguous, the text opened the way for tightening disciplines on the Blue Box. In this respect, the declaration called for a greater reduction to overall trade-distorting domestic subsidies than to Amber Box support. Cuts to the overall subsidies would be made from the sum of the amounts spent on three categories of subsidies (Inside US trade, 2005).

On agricultural market access, the declaration locked in the ability of developing countries to self-designate “an appropriate number of tariff lines” as special products, which they could shield from market access concessions. Members are to select these products based on the criteria of food security, livelihood security and rural development. It also specified that developing countries will have recourse to a special safeguard mechanism based on import quantity and price triggers, and called for precise arrangements to be further defined. Regarding the issue of sensitive products that countries can exempt from a formula tariff cut, the final declaration recognizes “the need to agree on treatment of sensitive products, taking into account all the elements involved”. However, the declaration made no progress on the tariff-cutting formula, partly because the EU made it clear before Hong Kong that it would discuss no specific numbers at the ministerial.

There was also some progress on preventing the abuse of food aid as a disguised form of dumping, but on cotton, the steps agreed fell short even of those required by the cotton panel ruling against the USA. In fact, and while the case of cotton received a particular attention during the negotiations, the approved deal consists of eliminating the US export subsidies. However, it is not the cotton subsidies that the US has promised to remove by 2006.

While all the areas of negotiations are critical to delivering pro-development results favourable to African and other developing countries, taking a critical look at the text and proposals on modalities for the agriculture negotiations, it is possible to give an assessment regarding whether Africa’s concerns are being addressed. Some convergence was attained at Hong Kong for some of the areas in the agriculture negotiations, especially in the export competition pillar, but significant divergences remain in the other two pillars. It is evident that the levels of ambition in each of these pillars vary. A summary of the elements on modalities development as contained in the Hong Kong text under a number of the areas

of negotiations is provided in Annex 1 of this paper. This is compared with Africa's expectations as contained in the African Union Ministers of Trade Cairo and Arusha Declarations.

Regarding commitments on cotton, and in reality, as some estimates show it does not translate to more than \$30 million, which is insignificant even from the point of view of American cotton growers. In 2004, US cotton farmers got federal support to the tune of \$4 billion, which means \$10.1 million a day. In 2005, UN Human Development Report 2005 states the cotton growers were paid an additional \$700 million thereby raising the total subsidy to reach a staggering figure of \$4.7 billion. It is this huge subsidy support; much of it considered non-trade distorting that actually causes the global prices to slump pricing out competitive producers from West Africa from the international market. The Hong Kong declaration does not talk about reduction in domestic support in case of cotton. In fact, the contentious issue of domestic support for agriculture has remained untouched.

V. The MIRAGE model

This section provides a short description of the MIRAGE model that used in the empirical analysis of the implications of the various agriculture negotiations options on African economies. The MIRAGE model has been constructed in order to assess the impact of globalization on the individual regions in the global economy. The model is a relatively standard neo-classical model of economic activity. It is based on the latest release of the GTAP data set, version 6.0. The model is designed for analyzing dynamic scenarios. The scenarios are solved as a sequence of static equilibrium, with the periods being linked by dynamic variables — population and labour growth, capital accumulation, and productivity. Policy scenarios are compared to a baseline, or business-as-usual, scenario. The following section briefly describes the dimensions of the model and its main features⁸. The mapping from the GTAP regional and sector definitions to the corresponding aggregations defined for the MIRAGE model used in this study is provided in Annex 2. As far as dimensions are concerned, there are 3 essential dimensions for the MIRAGE model. The table below provides a complete description. Due to the existence of a flexible aggregation facility, the regional and sectoral definitions of the model are easy to modify. The aggregation defined in Annex 2 describes the scope of the MIRAGE model for the current study.

Table 2: Dimension of MIRAGE Model

Index	Description
l	Sectors (see Annex 2 for MIRAGE model dimensions)
r	Regions (see Annex 2 for MIRAGE model dimensions)
t	Time (currently 2001-2015)

In what follows, we present briefly the main characteristics of the model, which concern the modelling of demand, supply, capital, markets clearing and macroeconomic closure, and dynamic. Given the importance of domestic supply in the distortions currently affecting world trade in agricultural products, a short description of how domestic supply is modelled in MIRAGE is provided directly after presenting the main blocs of the model.

Demand. The demand side is modelled in each region through a representative agent, whose utility function is intra-temporal, with a fixed share of the regional income allocated to savings, the rest used to purchase final consumption. Below this first-tier Cobb-Douglas function, consumption trade-off across sectors is represented through a LES-CES function. Each sectoral sub-utility function is a nesting of CES functions, comparable to the standard nested Armington – Dixit-Stiglitz function (see e.g. Harrison et

⁸ The complete and detailed technical specification of MIRAGE model can be found in Bchir et al (2005)

al., 1997), with two exceptions. Firstly, domestic products are assumed to benefit from a specific status for consumers, making them less substitutable to foreign products than foreign products between each other. Secondly, products originating in developing countries and in developed countries are assumed to belong to different quality ranges⁹.

Supply. Production makes use of five factors: capital, labour (skilled and unskilled), land and natural resources. The first three are generic factors; the last two are specific factors. The production function assumes perfect complementarity between value added and intermediate consumption. The sectoral composition of the intermediate consumption aggregate stems from a CES function. For each sector of origin, the nesting is the same as for final consumption, meaning that the sector bundle has the same structure for final and intermediate consumption. The structure of value added is intended to take into account the well-documented skill-capital relative complementarity. These two factors are thus bundled separately, with a lower elasticity of substitution (0.6), while a higher substitutability (elasticity 1.1) is assumed between this bundle and other factors. Constant returns to scale and perfect competition are assumed to hold in agricultural sectors.

Capital, markets clearing and macroeconomic closure. The capital good is the same whatever the use sector, and capital is assumed to be perfectly mobile across sectors within each region. At the region-wide level, capital stock is assumed to be constant in the core simulations of this paper. Natural resources are also perfectly immobile and may not be accumulated. Both types of labour, as well as land, are assumed to be perfectly mobile across sectors. Production factors are assumed to be fully employed. All production factors are immobile internationally. As to macroeconomic closure, the current balance is assumed to be exogenous (and equal to its initial value in real terms), while real exchange rates are endogenous.

Dynamics. In a typical recursive dynamic framework, the time path of the model is solved as a sequence of static equilibrium in each year. In other words, the solution in any given year is not a function of forward looking variables, though it may be an explicit function of past variables, though known and therefore exogenous. While there are drawbacks in the recursive dynamic framework, particularly in the modelling of saving and investment behaviour, its one key advantage is that it is much easier to set up and solve (van der Mensbrugge, 1998). There are several backward linkages linking one period to another: population growth, productivity increases, and capital accumulation. Most of these linkages can be resolved outside of the modelling framework, or in other words, in between solution periods. One of the exceptions is the capital accumulation function. Before running any policy simulations in a dynamic framework, it is often required to define some sort of reference scenario, or as it is sometimes called, a business-as-usual scenario (BaU). The BaU scenario makes some assumptions about a broad range of dynamic variables — population and labour supply growth rates, the growth rate of factor

9 This is motivated by the fact that, following Abd-El-Rahman (1991), several empirical works have shown that, even at the most detailed level of classification (Combined Nomenclature, 10 digits, including more than 10,000 products), unit values differences are able to reveal quality differences (see e.g. Fontagné et al., 1998; Greenaway and Torstensson, 2000).

productivity, and other exogenous variables. If all productivity variables are pre-determined, as well as the population growth rates, the growth rate of real GDP is endogenous. However, the path trend in real GDP growth may be unrealistic, or at least inconsistent with the assumed trend from other studies or prospective outlooks. One way to resolve this dilemma is to make the growth of real GDP exogenous in the reference scenario, and to allow some other variable pick up the slack. In subsequent simulations, i.e. in simulations with policy shocks, the growth rate of capital and labour productivity, are exogenous, and it is the growth of real GDP and the capital-labour ratio, which are endogenous.

Mechanisms of implementing domestic support. While an agricultural version of MIRAGE was developed by Bouet et al (2004), which integrates a detailed modelling of the instruments of domestic support applied by the European and US, we resorted to using a more simpler way of modelling domestic support given the non-linearity of Bouet's version. This non-linearity could not allow running the dynamic version of MIRAGE. The approach used here for modelling domestic support follows the one developed by Walsh (2004)¹⁰. The results of the distribution of PSE are presented in the following table.

Table 3: Results of Distributing Domestic Support

	EU25	USA	Japan
Output Subsidies			
Amber	96.1	92.9	30.1
Blue	0.0	0.0	33.9
Green	3.9	7.1	36.0
Intermediate subsidies			
Amber	89.7	90.5	74.3
Blue	1.8	0.0	0.0
Green	8.5	9.5	25.7
Land-based Payments			
Amber	0.5	3.1	93.1
Blue	79.8	0.0	0.0
Green	19.7	96.9	6.9
Capital-based Payments			
Amber	6.5	91.6	84.6
Blue	51	0	0
Green	42.5	8.4	15.4

Source Walsh et al (2004)

Note: data are in percentage of distribution of domestic support among the three components for each county and each category.

¹⁰ In the GTAP database, the direct payments reported in the GTAP model are allocated to four different categories: output subsidies, intermediate input subsidies, land-based payments and capital-based payments. The source of the agricultural support data for non-market price support protection in industrialized countries is based on the estimation of the Producer Support Equivalent (PSE) carried out by the OECD (2002a). Walsh et al (2004) dispatch the amount allocated to each category of subsidies among the three boxes defined by the WTO.

To perform reduction in domestic support in the alternative scenarios, three major steps were forwarded. The first step consists of computing the new bound domestic support level and then the level of applied support, which is defined as the minimum between the new bound level and the current applied level. This step is justified by the fact that formulas cuts have to be applied on the bound support. The second step consists of taking into account the differences existing between the 2001 domestic support level, which is notified to WTO, and the level of support existing in the GTAP database. In order to address this issue, we simply computed the rate of increase of applied support as notified in the WTO and then we applied the rate of cut to the support level figured in the GTAP database. Finally, the implementation of the cut is done through endogenizing domestic support and exogenizing the new level of support.

VI. Impact of potential proposals of implementing DDA on agricultural trade

VI.1. Description of simulations.

After calibrating the baseline scenario that represents the business as usual growth path, we implement a number of alternative trade scenarios. Each scenario seeks to provide insights into possible trade deals on agricultural products under the DDA. In particular, we perform four alternative scenarios. The main difference between the scenarios is only on the market access pillar. The domestic support and the export competition pillars are the same in all the four scenarios. Therefore, the differences that are seen with respect to economic impacts, have got more to do with the market access pillar than with the other pillars although the economic impacts should be read as the combined outcome of market access, domestic support, and export competition liberalization. The scenarios are defined as follows:

Scenario 1: This scenario has the deepest cuts for developed countries (akin to US proposal) but conservative cuts for developing countries (akin to ACP proposal). The sensitive products are fixed at one percent of agriculture tariff lines for developed countries and at 20 percent of agriculture tariff lines for developing countries. The sensitive and/or special products were defined for each country to be the percentage of lines representing the highest MFN rates. Numerically, this scenario consists of the following commitments:

Table 4: Market access commitments under the first scenario

Tariff band (%)	Cuts by developed countries	Cuts by developing countries	LDC
0-20%	65%	20%	No liberalization
20-40%	75%	25%	
40-60%	85%	28%	
Above 60%	90%	30%	

Scenario 2: This scenario captures the G-20 proposal. In this simulation, we consider that sensitive and/or special products represent two percent of agriculture tariff lines for developed countries and 20 percent of agriculture tariff lines for developing countries. The different commitments to be implemented by developed, developing, and less developing countries are displayed in the Table 5 below.

Table 5: Market access commitments under the second scenario

Tariff band (%)	Cuts by developed countries	Cuts by developing countries	LDC
0-20%	20%	15%	No liberalization
20-40%	30%	20%	
40-60%	35%	25%	
Above 60%	42%	30%	

Scenario 3. This scenario defines higher thresholds for the four tiers but applies the same tariff cuts as in scenario 1. Under this simulation, sensitive products represent now eight percent of agriculture tariff lines for developed countries and 20 percent of agriculture tariff lines for developing countries.

Table 6: Market access commitments under the fourth scenario

Developed countries		Developing countries		LDC
Tariff threshold	Cuts	Tariff threshold	Cuts	No liberalization
0-20%	65%	0-20%	20%	
20-40%	75%	20-40%	25%	
40-60%	85%	40-60%	28%	
Above 60%	90%	Above 60%	30%	

Scenario 4: This scenario has higher threshold for developing countries and slightly lesser cuts for the same. Similar to the first scenario, sensitive products represent only one percent of agriculture tariff lines for developed countries and 20 percent of agriculture tariff lines for developing countries. Commitments by developed and developing countries are summarized in Table 7.

Table 7: Market access commitments under the fifth scenario

Developed countries		Developing countries		LDC
Tariff threshold	Cuts	Tariff threshold	Cuts	No liberalization
0-20%	65%	0-50%	25%	
20-40%	75%	50-100%	30%	
40-60%	85%	100-150%	35%	
Above 60%	90%	Above 150%	40%	

For all scenarios, we also assume that only developed countries will reduce their domestic support pillar. The date of implementation is 2007 over five years. Table 8 describes the reduction schema. Furthermore, we assume that the export subsidies will be eliminated at 2013 for developed countries. Finally, and regarding market access commitments, we consider that the liberalization of agricultural products is supposed to be implemented as from 2007 in a linear manner during five years for developed countries and seven years for developing countries for all simulations.

Table 8: Reduction Schema

Final Bound Total AMS Bands	Thresholds (US\$ billion)	Developed countries cuts
1	0-10	70%
2	10-60	75%
3	>60	80%
Amber Box Bands	Thresholds (US\$ billion)	Developed countries cuts
1	0-12	60%
2	12-25	70%
3	>25	83%

On the basis of the contents of each of the four scenarios described above, the first one, which includes only one percent of sensitive products and with deep cuts for developed countries, could be considered as the most ambitious scenario. However, the third scenario presents the lower ambition in the market access given the high rate of sensitive products among the agriculture tariff lines for these countries. The second scenario is less ambitious than the first scenario but more ambitious than the third and the fourth one. Essentially, the motivation behind scenario 2 is to show the implication of a one-percentage point increase of the sensitive products for developed countries on potential gains by African countries from the liberalisation.

VI.2. Trends in bilateral tariffs for African agricultural trade.

With the tariffication of most non-tariff barriers (NTBs) in the member countries of WTO after the implementation of Uruguay Round agreement on agriculture, tariffs became increasingly the primary policy instrument for protecting domestic agriculture sectors in most countries.¹¹ It is then necessary to analyse the structure and the magnitude of the current global tariffs imposed on agricultural trade

¹¹ However, many other instruments are more trade restrictive than tariffs. This may include the exchange rate regime, trade facilitation measures, norms and quality control, rule of origins, and quota rates. For many countries, these instruments play a protective role much more than tariffs, mostly in the case of agricultural trade. The case of North African countries is the best example of the existence of other restrictions than tariffs. For these countries, tariffs on agricultural imports from North African countries to the European Union are not seen as the most restrictive instrument given that most of their exports are realized under a free quota regime which allows a high protection for European products during the periods of high supply.

in order to get a full picture of their impact. Accordingly, we examine in this section both the current structure of tariffs imposed on African agricultural exports to the rest of the world as well as tariffs that African countries themselves apply on their imports of agricultural products from the rest of the world. Furthermore, we analyse the expected trends in both tariffs imposed on agricultural trade (from and to African countries) that will result from the implementation of the alternative scenarios of modalities for multilateral agricultural liberalization. In this respect, both defensive as well as offensive interests of African countries are reviewed by analysing how the developed countries market will be opened for African exports (offensive interest) and what the final modalities would do to the African agricultural development strategies (defensive interests). In other words, the openness that will occur in the developed countries markets for African exports and the level of new protection of the Africa agriculture sector are two crucial elements of this analysis. In our analysis, we start from the GTAP database, which uses tariffs revenue that are effectively collected and divided by the value of import of every sector. However, rather than using tariff rates estimated directly from GTAP database that are based on trade weighted techniques, we used the MacMap database which estimate tariff rates using the technique of Reference Group Weighted¹². Annex 3 gives data on import tariffs imposed by African countries on their imports of agricultural products from other countries and regions of the world as well as tariffs imposed by the other countries and regions of the world on their imports of agricultural products from African countries and regions. Tables in the same annex give the expected trends on tariffs; both applied by African countries on their imports and imposed on their exports, for the different simulations and by the end of the implementation period 2015. Concerning the initial tariff structure imposed bilaterally between some countries and regions estimated from MacMap database, figures show that tariffs imposed by the rest of the world on African countries agricultural exports are mostly very low, except for some products and some regions from the rest of the world. For Tunisia and Morocco, data shows that the G20 countries seem to be the most protective of their domestic agricultural sector. Average tariffs imposed by these countries vary between 18 percent and 90 percent with the highest rates applied on plants based fibre and cereals for Tunisia and on vegetables and fruits for Morocco. For the EU, the tariffs applied are higher for cereals; fishing; and vegetables and fruits imported from Tunisia and on vegetables and fruits and raw sugar from Morocco. As far as Japan is concerned, the high tariff rates are only applied on its imports of oil seeds from both countries. The USA seems to be the most opened market, behind the group of Cairns developed, where relatively high tariffs are applied on oil seeds and plants based fibres. For the rest of North African countries, mostly represented by Egypt the largest exporter of agricultural products, the EU applies high tariffs on Egyptian exports of raw sugar, paddy rice, wheat and other cereals. However, very high tariffs are applied by Japan on its imports of paddy rice followed by oil seeds imported from this region. The group of Cairns developed apply relatively high tariffs only on wheat imports from this region. The structure of tariffs applied by the group of G20 on their imports of agricultural products from the rest of North Africa region is almost the same as those applied on imports from Tunisia and Morocco. Regarding agricultural exports of the rest of African countries (SADCRSADC, RSACU, RSSAHAF,

12 More information on tariffs definition and categories could be found in Hinkle et al. (2003).

and SAF), the most protective country is still Japan applying the highest tariffs among all countries and regions. Japan is followed by the EU, and then by group of G20. The USA seems to be the least protective of countries behind the group of Cairns developed.

Turning now to the expected trends of tariff structure to be applied on African exports under the different scenarios, the simulations results show that tariffs imposed by developed countries on African exports will face significant decline which means a high improvement of market access for African countries. However, the degree of openness of the markets of the other regions will be much more smaller than what will be observed for developed countries. It is clear that the implementation of the alternative scenarios will improve the level of market openness for African countries, mostly those for developed countries.

From a defensive point of view, African countries impose very high tariffs on all their imports of agricultural products from all origins. However, the tariff reduction schema adopted in the different alternative scenarios will improve remarkably the level of openness of African countries to imported agricultural products. Tables in annex 3 presents the current tariff structure applied by African countries and regions on their imports of agricultural products from the rest of the world as well as the expected trends in tariffs expected from implementing each one of the four scenarios.

It is noteworthy that these figures give a good and clear view about the bilateral tariff applied among countries and regions, but it is important to clarify that tariff structures are losing their importance in trade regulation. In fact, with the implementation of many free trade areas (FTAs) between some African countries, especially North African countries and South Africa and their main partners from the developed world, tariffs are no more the main obstacle of trade between these partners. Tunisia and Morocco for example realize more than 90 percent of their agricultural exports free of duties in the context of tariff quota and other regulations. At the same time, most of European exports to these countries are realized also under a tariff quota offered by Tunisia and Morocco for most of their imported products under their respective commitments in the context of GATT agreement. It is then crucial to note that economic effects of phasing out or reducing these tariffs may not enhance trade between such African regions given that trade is already regulated by bilateral agreements than multilateral agreements for most countries and mainly for agricultural products. In deed, the issue of trade facilitation and sanitary and phyto-sanitary norms are currently playing a major obstacle in reducing trade flows.

VI.3. Simulation Results.

The results of the four scenarios are given in Annex 4. The results indicate deviations from base values, showing the impact of each of the four scenarios described above. Results for the more ambitious scenario 1 show improvements in GDP levels for all African countries until the year 2010. However, the phasing out of export subsidies will affect negatively all African countries, except Tunisia and the Rest of SADC countries. While the amplitude of gains is small, we can consider that the overall effect of this scenario

is positive. In this respect, this scenario produce a 1.32 percentage point increase in the overall growth performance of the Tunisian economy and 0.70 percentage point increase in GDP of the Rest of SADC economies. However, the effect of the first scenario is only a very small gain for Morocco in respect of GDP changes before the cutting of export subsidies. The rest of North Africa region will be affected negatively by the implementation of the first scenario both before and after phasing out export subsidies. As far as the other African countries are concerned (South Africa, Rest of SACU, and Rest of sub-Saharan Africa), the GDP performance experiences the same trend as for Morocco. While these results are largely due to the increase of world prices of agricultural products and the ability of each country and region to take advantage of them, the phasing out of export subsidies will clearly have a negative impact on most African countries and will more than offset the positive impact of the two other pillars (market access and domestic support). Tunisia seems to be the only country that wins even after cutting of export subsidies. This is largely due to the relative decline in the cost of inputs for the food processing sector in comparison to the EU, which will be manifested by an improvement in Tunisia's competitiveness on the European market and will spur increased exports of this sector. Moreover, these results can also be explained by the absence of quota limitation of Tunisian exports on the European market. The current quotas imposed on most Tunisian exports of agricultural and food products are the origin of the high protection offered to the European domestic market and are in a way limiting the expansion of many agro-food sectors in Tunisia. This instrument of protection (quota) is not considered in the MIRAGE models, which justify the need to develop a specific country model able to take into account the main features of supply and demand.

The implementation of the next three scenarios (scenarios 2, 3 and 4) does not generate a better performance in terms of total economic performance than the first scenario in line with *a priori* expectations given their lower levels of ambition. The changes in GDP and welfare are slightly lower than in the first scenario. Of note, for Tunisia, GDP registers almost the same percentage point increase for scenarios 4 and 1 in the year 2007. However, some additional gains are obtained during the years 2010 and 2015 when the fourth scenario is implemented. On the other hand, the implementation of the second and the third scenario generates a lower increase in GDP over the simulation period. For the rest of African countries, only the implementation of scenario 4 generates the same effects as scenario 1. The other scenarios (2 and 3) either generate a lower increase in GDP or accentuate the decline in overall economic performance compared to the first scenario during all the simulation period.

For Morocco, only the implementation of the third scenario generates a better economic performance than all the other scenarios. This specific situation could be explained by the positive effect linked with the differentiation of the level of tariff cuts between developed and developing countries with the level of bound tariffs. The commitments to reduce tariffs by 30 percent on rates above 60 percent in Morocco against 90 percent cuts in developed countries, will improve slightly the competitiveness of Moroccan agricultural products on European markets. For the rest of African regions (South Africa, Rest of SACU, Rest of SADC, and Rest of sub-Saharan Africa), the level of impact is highly linked with the level of

ambition, except for the fourth scenario, which produces almost the same effect on GDP as the first scenario.

With regard to the economy-wide welfare impacts, most of the African countries experience a significant gain, mainly before implementing export subsidies commitments. In the case of Tunisia, the implementation of all the scenarios will generate a positive welfare gain with the highest levels in scenarios 1 and 4. However, scenario 2 will generate the lowest level of welfare increase. For Morocco, the net effects of welfare will be negative in all scenarios. The rest of North Africa experienced the same welfare changes to Morocco. Still, for the rest of African countries and regions, welfare changes are positive (except Rest of SADC countries) for all simulations during the period 2007 and 2010. However, the implementation of export subsidies in 2013 will affect negatively the welfare of the Rest of sub-Saharan Africa and the Rest of SACU and this is explained by the fact that these countries are considered as net importer of food products and are not able to increase domestic production to a level able to compensate the increase of import bills. South Africa on the other hand seems to be able to ensure welfare gains in all cases. On the whole, it is only when export subsidies are removed that most African regions and countries experience more sensitive effects on GDP as well as welfare.

As far as impact on trade balance is concerned, results of the four simulations show that African countries could be divided into two groups: a group where trade balance will experience a net improvement and a second group for which a deterioration of trade balance is expected. The first group includes Tunisia, Rest of SACU, Rest of SADC countries, and the Rest of sub-Saharan Africa. Morocco, Rest of North Africa, and South Africa represent the second group. The difference in the level of impact of these scenarios on the trade balance between the two groups of countries and regions may be explained by the relative higher level of growth of import and exports of agricultural and food products for these countries during the simulation periods. For the countries that will benefit from these reforms by increasing their level of economic growth, the effect on trade balance will be positive while for those that will be affected negatively by these reforms, the effect on trade balances will be negative.

As expected, the overall impact of the different reforms tested in this study is an increase in the international prices of agricultural products and especially the most protected ones, such as cereals and sugar. The increase is much higher when export subsidies are phased out than when only the other reforms are undertaken. The overall gains for each country depends on its capacity to take advantage of the new situation by increasing domestic production and exports much higher than the increase in import bills for agricultural and food products. The detailed results on sectoral value added changes for each of the simulations showed clearly that those countries that experienced the highest gains are those that succeeded in increasing their domestic production at very high levels. For Morocco, which appears to be a loser from these reforms, sectoral value added for agricultural and food-processing sectors grew much lower than in Tunisia.

By and large, the simulation results show that ambitious coefficients in agriculture remain the best result for Africa. Introduction of sensitive products especially for developed countries as scenario 2 shows will result in Africa losing what appears to be important gains from the ambitious tariff cuts as reflected in the results of scenarios 1 and 4. Any trade-offs sought by the advanced developing countries on market access through sensitive products which automatically reduce ambition clearly hurt Africa's potential gains.

Notwithstanding the results of the four scenarios, the anticipated effects of implementing commitments for more transparency in international trade of agricultural products appear to be relatively low given the low diversification of African countries and the dominance of few activities in GDP and exports. The countries that gain most benefits from these scenarios are those more diversified.

As a final point, our results confirm the outcomes of past studies on quantifying the effects of agricultural trade liberalization such as ECA (2004). As shown in other studies such as the study by Cernat et al. (2002), tariff cuts for agricultural goods yield higher gains than elimination of subsidies, mostly for developing countries that are net importers of food products. In this respect, reduction of subsidies should go hand-in-hand with agricultural tariff reductions in order to ensure win-win outcomes. Moreover, and as suggested by other similar studies (Francois et al, 2003; Cernat et al, 2002; Hertel and Martin, 2001; and IMF & World Bank, 2002), a comprehensive tariff reduction strategy covering agricultural and non-agricultural goods is better than a partial approach. The estimation carried out by Cernat et al. (2002), show that global welfare gains from a 50% tariff reduction in agricultural protection across the globe would be nearly doubled by a comprehensive tariff reduction covering agricultural and industrial goods.

VII. Conclusion

The issue of quantifying the specific effects of the expected agricultural trade reforms on poor countries remains important to understanding the solutions to the development challenges that Africa faces. This study tries to provide preliminary answers on different plausible scenarios of implementing DDA on agricultural trade. Our results show that the overall impact of the reforms is an increase of the international prices of agricultural products and especially the most protected ones, such as cereals and sugar. The increase is much higher when exports subsidies are phased out than in the other reforms. The overall gains for each country depends on its capacity to exploit the new situation by increasing domestic production and exports *vis-à-vis* the increase in import bills of agricultural and food products. Sectoral value added improvements seem to occur in those countries that succeed in increasing their domestic production to higher levels. Overall, the simulation results show that ambitious coefficients in agriculture remain the best result for Africa with sensitive products weakening or even overriding those gains. Consequently, any trade-off by the advanced developing countries on market access, which inevitably would reduce ambition, may not be in Africa's interest.

Notwithstanding the results of the four scenarios, the anticipated effects of implementing commitments for more transparency in international trade of agricultural products appear to be relatively low given the low diversification of African countries and the dominance of few activities in GDP and exports. The countries likely to benefit most from ambitious reforms are those that are more horizontally and vertically diversified within the agricultural sector and related agro-industries. This study confirms results and conclusions from other studies that have shown and suggested that a comprehensive tariff reduction strategy covering agricultural and non-agricultural goods is better than a partial approach.

References

1. Abdel-Rahman K. Firms' Competitive and National Comparative Advantages as Joint Determinants of Trade Composition. *Weltwirtschaftliches Archive* 1991; 127; 83-97.
2. Anderson, K., E. Valenzuela, and L.A. Jackson (2006). "GM Cotton Adoption, Recent and Prospective: A Global CGE Analysis of Economic Impacts", World Bank and WTO, memo.
3. Bchir, M.H., L. Fontagné, and Sébastien Jean (2005). « From Bound Duties to Actual Protection: Industrial Liberalization in the Doha Round, memo, CEPII, Paris.
4. Bouet, A., J-C Bureau, Y. Decreux, and S. Jean (2003). « Is Northern Agricultural Liberalization Beneficial to Developing Countries », CEPII, memo, Paris.
5. Bouet, A. Bureau J.C, Decereux. Y and Jean S. (2004). "Multilateral Agricultural Trade Liberalization: The Contrasting Fortunes of Developing Countries in the Doha Round", CEPII working paper N 2004-18, November.
6. Chemingui, M.A. (2005). 'Analyzing Productivity Changes in Morocco », UNDP Research Programme, Vienna. Economic Commission for Africa, 2004, "Trade Liberalization under the Doha Development Agenda: Options and Consequences for Africa", *ATPC Work in Progress Paper Series*, African Trade Policy Centre, Economic Commission for Africa: August 2004 Addis Ababa, Ethiopia.
7. Fontagné L, Freudenberg M, Péridy N. Intra-Industry Trade and the Single Market. CEPR Discussion paper 1998; 1959
8. Hinkle, L.E., A. Herrou-Aragan, and K. Kubota (2003). "How Far Did Africa's First Generation Trade Reforms Go? An Intermediate Methodology for Comparative Analysis of Trade Policies", Africa Region Working Paper Series No. 58a (Volume I) & No. 58b (Volume II).
9. Keeney, R. and T. Hertel (2005). "GTAP-AGR: A Framework for Assessing the Implications of Multilateral Changes in Agricultural Policies", GTAP Technical Paper No.24, Purdue University.
10. OECD (2002). "Producer and Consumer Support Price Estimates", OECD Database 1986-2002, OECD, Paris.

11. Van der Mensbrugge (1998). "Model Specification for the JOBS Model", Memo, OECD Development Centre, Paris.
12. Walsh, k, *, Martina Brockmeier b and Alan Matthews (2004). "Implications of Domestic Support Disciplines for Further Agricultural Trade Liberalization", memo.
13. World Bank (2003). "Cancun Trade Talks an Opportunity to Lift Millions out of Poverty", Washington D.C.
14. ECA (2005). "l'Afrique et les Negotiations Agricoles", Addis Ababa
15. Francois, J., H. van Meijl, and F. van Tongeren (2003). 'Economic Benefits of the Doha Round for the Netherlands', Agricultural Economics Research Institute, The Hague.
16. IMF and WB (2002). "Markets Access for Developing Country Exports – Selected Issues", report prepared by the staffs of the IMF and the World Bank, Washington D.C.
17. Hertel, T.W. and W. Martin (2001). "Second-Best Linkages and the Gains from Global Reform of Manufactures Trade", Review of International Economics, Vol.9, No.2, pp. 215-232
18. Cernat, L., S. Laird, and A. Turrini (2002). "Back to Basics: Market Access Issues in the Doha Agenda", UNCTAD, Geneva.

Annexes

Annex 1:

Negotiations on Agriculture: Declaration of Hong Kong on Agriculture Negotiations compared with Africa's expectations as contained in the African Union Ministers of Trade Cairo and Arusha Declarations.

Issue compared	Cairo Declaration on agriculture	Arusha Declaration on agriculture	Hong Kong Ministerial Declaration on agriculture
Market Access: preference erosion	Specific and concrete mechanisms to address the problems of preference erosion	Specific and concrete mechanisms to address the problems of preference erosion, including through designation of sensitive products by developed countries	The importance of preferences is emphasized. There is a convergence on the need to reinforce capacity building on this matter, but divergence on the mechanisms to put into place to limit preferences erosion.
Market access: formula and cuts for African countries	Take into account the particular pattern of trade of African countries and their different tariff structures	a) Full operationalization of the principle of proportionality in the reduction of tariffs, and the need to take into account the different tariff structures of Members;	Agreement on the principle of four bands for structuring tariffs cuts, but no convergence on the threshold and cuts inside the bands. Lesser commitment of the developing countries, but general divergence on the threshold and cuts applied by these countries.
Market access: tariff escalation	The issue of tariff escalation must be addressed fully in accordance with paragraph 36 of the Framework Agreement without prejudice to the products benefiting from preferential arrangements,	Substantial improvement in market access for products of export interest to African countries. In this regard, special attention should be given to tariff escalation, tariff peaks and non-tariff barriers;	Clear divergence among WTO members on the tariffs caps. Some members reject this concept, others propose a differentiated cap for developed countries (75%-100%), and developing ones (150%).
Market access: full market access for LDCs	Developed countries, and other developing countries in a position to do so, must provide bound duty and quota free market access to agricultural products originating in LDCs	-	Unrestricted market access for LDCs is still discussed by WTO members.
Market access: Sensitive and Special Products, and Special Safeguard mechanism	[...] the development of meaningful modalities on Special Products (SPs) and the Special Safeguard Mechanism (SSM). [...] Modalities with respect to the designation of special products and treatment must be devised in a way that provides maximum flexibility to countries in Africa to reflect their particular domestic circumstances and development needs	Designation and treatment of the special products must be devised in a way that provides maximum flexibility to the African countries to reflect particular domestic circumstances and development needs .The SSM to be established for the developing countries should be operationally effective to address the specific circumstances of the African Countries;	Divergence among WTO members on the number for sensitive products. The proposals range from 1% to as much of 15% of the tariff lines for the developed countries. The treatment of the sensitive products is also debated. The WTO members agree on the principle of a greater flexibility for developing countries regarding sensitive products. They are also discussing on the criteria to designate the special products, as well as their type of treatment. It has been proposed that developing countries could designate at least 20% of their agricultural tariff lines as special products.

Issue compared	Cairo Declaration on agriculture	Arusha Declaration on agriculture	Hong Kong Ministerial Declaration on agriculture																								
Domestic support: formula for cuts	the formula to be agreed must result in meaningful and effective reductions in the subsidies granted by the major trading partners to their farming communities. [...] disciplines on domestic support (DS) should not lead to "box-shifting" the subsidies, African countries must be allowed to maintain policy space [...].	Modalities should include disciplines to prevent box shifting; African countries must be exempted from de minimis and AMS reduction commitments; African countries must be allowed to maintain policy space for the development [...]; African countries underline the importance of meeting the Doha objective of real reductions in trade distorting domestic support.	On the overall cut, the following formula is proposed: <table border="1" data-bbox="192 238 278 643"> <thead> <tr> <th>Bands</th> <th>Thresholds (US\$ billion)</th> <th>Developed countries cuts</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0-10</td> <td>31% - 70%</td> </tr> <tr> <td>2</td> <td>10-60</td> <td>53% - 75%</td> </tr> <tr> <td>3</td> <td>>60</td> <td>70% - 80%</td> </tr> </tbody> </table> With respect to reductions in the amber box measures, the following formula should apply: <table border="1" data-bbox="335 238 421 643"> <thead> <tr> <th>Bands</th> <th>Thresholds (US\$ billion)</th> <th>Developed countries cuts</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0-12/15</td> <td>37% - 90%</td> </tr> <tr> <td>2</td> <td>12/15-25</td> <td>60% - 70%</td> </tr> <tr> <td>3</td> <td>>25</td> <td>70% - 83%</td> </tr> </tbody> </table>	Bands	Thresholds (US\$ billion)	Developed countries cuts	1	0-10	31% - 70%	2	10-60	53% - 75%	3	>60	70% - 80%	Bands	Thresholds (US\$ billion)	Developed countries cuts	1	0-12/15	37% - 90%	2	12/15-25	60% - 70%	3	>25	70% - 83%
Bands	Thresholds (US\$ billion)	Developed countries cuts																									
1	0-10	31% - 70%																									
2	10-60	53% - 75%																									
3	>60	70% - 80%																									
Bands	Thresholds (US\$ billion)	Developed countries cuts																									
1	0-12/15	37% - 90%																									
2	12/15-25	60% - 70%																									
3	>25	70% - 83%																									
Domestic support: blue box and box shifting	Disciplines on domestic support (DS) should not lead to "box-shifting" the subsidies,	The tightening of the criteria for the Blue Box measures is critical; Modalities should include disciplines to prevent box shifting;	50%-80% cuts for de minimis tariffs applied by developed countries, reduced cuts / no cut at all for developing countries. Agreement on further constraining the use of the blue box. Discussion on the technique for achieving it, with two proposals: either reducing the current 5% ceiling to 2.5%, or increasing the discipline related to this type of domestic support.																								
Domestic support: green box	The developed countries must engage in the review and clarification of the green box criteria in a manner that will ensure that the green-box measures have no or at most minimal trade-distorting effects or effects on production.	Need to review the Green Box Criteria to provide policy space for developing countries; Review and tighten the Green Box Criteria for developed countries to ensure that it is non or minimally trade distorting;	Convergence on the need to make the Green Box more "development friendly", but divergence among WTO members on the rest of the discussion.																								
Export competition: end date	Place emphasis on the need for a credible end date for the elimination of all forms of export subsidies on agricultural products. This elimination shall be without prejudice to S&D treatment of NFIDCs and LDCs,	Stress the need for the elimination of all forms of export subsidies on agricultural products by 2010. This elimination shall be without prejudice to S&D treatment of NFIDCs and LDCs;	The WTO members agreed to ensure the parallel elimination of export subsidies and disciplines in all export measures with equivalent effects to be completed by the end of 2013. Convergence on disciplines with respect to export credits, export credit guarantee or insurance programmes with repayment periods of 180 days and below.																								

Issue compared	Cairo Declaration on agriculture	Arusha Declaration on agriculture	Hong Kong Ministerial Declaration on agriculture
Cotton	<p>Recommends to:</p> <ul style="list-style-type: none"> ñ Eliminate all export subsidies and domestic support measures on cotton, ñ Set up an emergency support fund for African countries and ñ Grant bound quota- and duty-free market access for cotton and its by – products from African LDCs, that are cotton producers and exporters. <p>Besides, bilateral and multilateral donors are urged to meet their commitment on the development-related aspects of the cotton initiative.</p>	<p>Stresses the need for:</p> <ul style="list-style-type: none"> ñ Total elimination by the 31st December 2005 of export subsidies; ñ Substantial reductions of domestic support measures that distort trade on cotton in three steps. ñ Elaboration of disciplines that prevent shifting of domestic support between different boxes ñ Setting up of Emergency Fund to address cotton revenue deficits resulting from cotton price depressions in the international markets; ñ Mobilization of the technical and financial assistance. 	<p>The WTO members agreed that:</p> <ul style="list-style-type: none"> ñ All forms of export subsidies for cotton will be eliminated by developed countries in 2006 ñ On market access, developed countries will give duty and quota free access for cotton exports from least-developed countries (LDCs) from the commencement of the implementation period. ñ Trade distorting domestic subsidies for cotton production should be reduced more ambitiously than under whatever general formula is agreed and that it should be implemented over a shorter period of time than generally applicable.

Annex 2: Concordance for the MIRAGE Model with GTAP 6.0

Regions

MIRAGEGTAP 6.0

1	EUR25	Austria, Belgium, Denmark, Finland, France, Germany, United Kingdom, Greece, Ireland, Italy, Luxemburg, Netherlands, Portugal, Spain, Sweden, Cyprus, Czech Republic, Hungary, Malta, Poland, Slovakia, Slovenia, Estonia, Latvia, Lithuania.
2	USA	The United States
3	Japan	Japan
3	Developed Cairns Group POE (CairDd)	Australia, New Zealand, Canada
4	Tunisia	Tunisia
5	Morocco	Morocco
6	Rest of North Africa	Algeria, Libya, Egypt
7	South Africa	South Africa
8	Rest of SADC	Botswana, Malawi, Mozambique, Tanzania, Zambia, Zimbabwe, Rest of SADC
9	Rest of SACU	Rest of South African Customs Union
10	Rest of sub-Saharan Africa (RSSAHAF)	Madagascar, Uganda, Rest of sub-Saharan Africa

11	ReG20	China, Indonesia, Malaysia, Philippines, Thailand, India, Argentina, Brazil, Chile, Uruguay, Rest of South America, Central America, Venezuela
12	Rest of the World	Rest of Oceania, Hong Kong, Korea, Taiwan, Rest of East Asia, Singapore, Vietnam, Rest of Southeast Asia, Bangladesh, Sri Lanka, Rest of SouthAsia, Mexico, Rest of North America, Colombia, Peru, Rest of Andean Pact, Rest of FTAA, Rest of Europe, Albania, Bulgaria, Croatia, Romania, Russian Federation, Rest of Former Soviet Union, Turkey, Rest of Middle East Sectors

Sectors

	MIRAGE	GTAP 6.0
1	PDR	Paddy Rice
2	WHT	Wheat
3	GRO	Cereals grains nec
4	V_F	Vegetables, fruits, nuts
5	OSD	Oil seeds
6	C_B	Sugar cane, sugar beet
7	PFB	Plant-Based Fibers
8	OCR	Crops nec
9	CTL	Cattle, sheep, goats, horses
10	OAP	Animal Products nec
11	RMK	Raw milk
12	WOL	Wool, silk, worm cocoons

13	FRS	Forestry
14	FSH	Fishing
15	AgroInd	Meat, cattle sheep, goats, horse; Meat products nec; Vegetable oils and fats; Dairy products; Processed rice; Sugar; Food products nec; Beverages and tobacco products.
16	TexVet	Textiles, Wearing apparel
17	IndBasTe	Leather products; Wood products; Paper products, publishing
18	IndMovTe	Petroleum and coal products; Chemical, rubber, plastic prods; Mineral products nec; Ferrous metals; Metals nec; Metal products; Manufacture nec.
19	IndLourd	Motor vehicles and parts, transport equipment nec, Electronic equipment, Machinery and equipment nec.
20	Services	Electricity, Gas manufacture and distribution, Water, Construction, Communication, Financial services nec, Insurance, Business services nec, Recreation and other services, Public administration/defense/health/education, Dwellings
21	Trt	Transport nec, Sea transport, Air Transport

Importer	Morocco				CAI04	EU25	Japan	FAO20	USA																													
	Base	Bound	Sim1	Sim2																																		
Average of Value	Base	Bound	Sim1	Sim2	Sim3	Sim4	Base	Bound	Sim1	Sim2	Sim3	Sim4	Base	Bound	Sim1	Sim2	Sim3	Sim4																				
Sectors	Base	Bound	Sim1	Sim2	Sim3	Sim4	Base	Bound	Sim1	Sim2	Sim3	Sim4	Base	Bound	Sim1	Sim2	Sim3	Sim4																				
Sugar cane, sugar beet	185.6	185.4	185.2	185.2	185.2	185.2	34	32.5	25.5	27.2	25.5	25.5	34	32.5	25.5	27.2	25.5	25.5																				
Cattle/sheep/goats/hor																																						
Foraging	33.9	23.0	25.0	25.0	33.5	8.1	8.0	8.0	38.8	25.0	23.4	23.4	4.8	188.4	197.5	197.2	197.2	197.2	39.8	23.6	23.4	23.4																
Fishing	39.4	23.2	23.6	23.6	33.8	38.4	38.4	38.4	33.1	38.8	38.0	38.0	38.0	33.3	23.3	23.3	23.3	23.3	38.3	24.8	24.7	24.6	24.6															
Cereals/grains/beans	48.8	23.2	23.6	23.6	33.8	38.4	38.4	38.4	33.1	38.8	38.0	38.0	38.0	33.3	23.3	23.3	23.3	23.3	38.3	24.8	24.7	24.6	24.6															
Animal products/beans	34.0	22.0	19.4	19.4	32.4	17.2	14.7	15.2	14.7	14.5	14.0	14.0	14.0	15.0	15.0	15.0	15.0	15.0	16.5	16.5	16.5	16.5	16.5															
Crops/beans	26.7	22.5	19.7	20.5	19.7	18.5	30.5	20.1	18.0	18.5	18.0	17.9	21.9	34.4	8.0	8.0	33.4	23.4	20.5	21.1	20.5	20.4	31.1	20.5	19.0	19.4	19.0											
Oil/seeds	88.0	16.5	16.4	16.4	16.4	76.8	22.1	22.2	22.1	22.2	22.1	22.1	46.8	32.9	27.6	28.6	28.1	28.1	11.1	11.2	11.2	11.2	64.9	9.4	9.4	9.4	9.4											
Paddy/beans	38.0	34.6	34.6	34.6	34.6	98.0	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7		
Plant-based fibers	19.0	2.5	2.5	2.5	2.5	19.4	0.0	0.0	0.0	19.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5		
Vegetables/fruit/nuts	34.0	32.9	26.2	27.7	26.2	34.0	33.9	27.8	27.8	34.0	33.8	29.2	28.2	28.2	34.0	33.1	28.6	29.0	30.3	28.6	29.0	30.3	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	
Wheat	88.2	28.3	28.3	28.3	28.3	92.8	29.4	29.4	29.4	29.4	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	
Wool/silk/worm																																						
coconuts	23.0	2.5	2.5	2.5	2.5	27.9	0.2	0.2	0.2	0.2	0.2	0.2	37.6	5.9	5.9	5.9	25.3	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8		
Importer RNA																																						
Average of Value	Base	Bound	Sim1	Sim2	Sim3	Sim4	Base	Bound	Sim1	Sim2	Sim3	Sim4	Base	Bound	Sim1	Sim2	Sim3	Sim4																				
Sectors	Base	Bound	Sim1	Sim2	Sim3	Sim4	Base	Bound	Sim1	Sim2	Sim3	Sim4	Base	Bound	Sim1	Sim2	Sim3	Sim4																				
Sugar cane, sugar beet	10.3	7.4	7.4	7.4	7.4	7.4	12.2	8.0	8.0	8.0	8.0	8.0	46.0	21.6	21.6	21.6	21.6	11.8	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2		
Cattle/sheep/goats/hor																																						
Foraging	20.5	5.0	5.0	5.0	5.0	19.8	5.1	5.0	5.0	5.0	5.0	5.0	17.9	10.6	10.0	10.0	10.0	3.8	18.6	6.5	6.3	6.3	6.3	6.2	20.7	6.6	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	
Fishing	49.3	28.1	28.1	28.1	28.1	33.1	21.7	21.7	21.7	21.7	21.7	21.7	14.4	16.8	16.7	16.7	16.7	16.7	23.6	18.8	18.8	18.8	18.8	33.4	22.4	22.3	22.4	22.4	22.3	22.4	22.4	22.3	22.4	22.3	22.4	22.3	22.4	
Cereals/grains/beans	9.6	6.0	6.0	6.0	6.0	8.0	5.9	5.9	5.9	5.9	5.9	5.9	6.8	4.2	4.2	4.2	4.2	4.2	4.2	5.3	5.3	5.3	5.3	5.3	5.1	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	
Animal products/beans	26.5	8.8	8.7	8.7	8.7	30.4	14.7	14.5	14.6	14.5	14.5	14.5	23.6	15.9	14.2	14.7	14.7	14.2	22.7	17.0	16.6	16.7	16.7	16.8	27.9	30.0	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	
Crops/beans	27.8	14.3	14.0	14.0	13.9	33.1	15.9	16.6	15.7	15.6	15.5	12.8	7.4	7.2	7.2	7.2	7.2	7.1	41.2	28.3	27.6	27.8	27.7	27.5	45.9	18.6	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	
Oil/seeds	5.7	5.7	5.2	5.3	5.2	5.1	8.0	5.3	5.8	5.7	5.6	5.5	24.0	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	
Paddy/beans	28.0	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	20.0	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2
Plant-based fibers	15.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Vegetables/fruit/nuts	45.0	12.0	11.8	11.8	11.8	45.0	12.0	11.8	11.8	11.8	11.8	11.8	45.0	12.0	11.8	11.8	11.8	11.8	45.0	12.0	11.8	11.8	11.8	11.8	45.0	12.0	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
Wheat	5.0	3.2	3.2	3.2	3.2	5.0	3.2	3.2	3.2	3.2	3.2	3.2	5.0	3.2	3.2	3.2	3.2	3.2	5.0	3.2	3.2	3.2	3.2	5.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2		
Wool/silk/worm																																						
coconuts	5.0	10.5	10.0	10.2	10.0	9.9	5.0	8.4	7.9	8.0	7.9	7.8	5.8	6.7	6.0	6.2	6.0	5.9	5.3	10.3	9.7	9.6	9.6	9.6	5.1	6.0	5.5	5.6	5.5	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	
Importer																																						
TUN																																						
Average of Value	Base	Bound	Sim1	Sim2	Sim3	Sim4	Base	Bound	Sim1	Sim2	Sim3	Sim4	Base	Bound	Sim1	Sim2	Sim3	Sim4																				
Sectors	Base	Bound	Sim1	Sim2	Sim3	Sim4	Base	Bound	Sim1	Sim2	Sim3	Sim4	Base	Bound	Sim1	Sim2	Sim3	Sim4																				
Sugar cane, sugar beet	10.3	7.4	7.4	7.4	7.4	7.4	12.2	8.0	8.0	8.0	8.0	8.0	46.0	21.6	21.6	21.6	21.6	11.8	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2		
Cattle/sheep/goats/hor																																						
Foraging	20.5	5.0	5.0	5.0	5.0	19.8	5.1	5.0	5.0	5.0	5.0	5.0	17.9	10.6	10.0	10.0	10.0	3.8	18.6	6.5	6.3	6.3	6.3	6.2	20.7	6.6	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	
Fishing	49.3	28.1	28.1	28.1	28.1	33.1	21.7	21.7	21.7	21.7	21.7	21.7	14.4	16.8	16.7	16.7	16.7	16.7	23.6	18.8	18.8	18.8	18.8	33.4	22.4	22.3	22.4	22.3	22.4	22.3	22.4	22.3	22.4	22.3	22.4	22.3	22.4	
Cereals/grains/beans	9.6	6.0	6.0	6.0	6.0	8.0	5.9	5.9	5.9	5.9	5.9	5.9	6.8	4.2	4.2	4.2	4.2	4.2	4.2	5.3	5.3	5.3	5.3	5.3	5.1	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	
Animal products/beans	26.5	8.8	8.7	8.7	8.7	30.4	14.7	14.5	14.6	14.5	14.5	14.5	23.6	15.9	14.2	14.7	14.7	14.2	22.7	17.0	16.6	16.7	16.7	16.8														

Importer	PSADAC												USA																		
	Exporter						Importer																								
	Base	Bound	Sim1	Sim2	Sim3	Sim4	Base	Bound	Sim1	Sim2	Sim3	Sim4		Base	Bound	Sim1	Sim2	Sim3	Sim4												
Sectors	122.7	15	15	15	15	15	148.0	193	133.6	156	133.6	136	148.1	15	15	15	15	15	15	15	15	15	174.4	103	103	103	103	103			
Cattle/sheep/goats/hor	1103.8	4.0	4.0	4.0	4.0	4.0	1017.3	3.3	3.3	3.3	3.3	3.3	1053.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	3.7	193.0	12.7	12.7	12.7	12.7	12.7		
Forestry	183	2.5	2.5	2.5	2.5	2.5	183	4.4	4.4	4.4	4.4	4.4	144.0	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	7.5	7.5	53.6	6.1	6.1	6.1	6.1	6.1	
Cereals/grains/nec	123.5	3.6	3.6	3.6	3.6	3.6	123.1	8.7	8.7	8.7	8.7	8.7	140.1	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9
Animal products/nec	123.5	2.2	2.2	2.2	2.2	2.2	123.5	20.0	19.9	19.9	19.9	19.9	137.5	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2
Crops/nec	138.3	2.9	2.9	2.9	2.9	2.9	138.3	4.1	4.1	4.1	4.1	4.1	133.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Plant-based fibers	138.3	2.9	2.9	2.9	2.9	2.9	138.3	4.1	4.1	4.1	4.1	4.1	133.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Plant-based oils	7.0	1.2	1.0	1.0	1.0	1.0	43.4	0.8	0.8	0.8	0.8	0.8	23.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.4	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1
Vegetables/fruit/nuts	158.6	15.9	15.9	15.9	15.9	15.9	117.6	13.8	13.8	13.8	13.8	13.8	122.3	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Wheat	86.7	4.6	4.6	4.6	4.6	4.6	88.3	4.8	4.8	4.8	4.8	4.8	89.4	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Wool/silk/worm cocoons	143.3	1.2	1.2	1.2	1.2	1.2	146.7	2.7	2.7	2.7	2.7	2.7	141.1	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	138.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Sectors	52	0.0	0.0	0.0	0.0	0.0	26.0	20.0	19.5	20.0	20.0	19.5	30.2	20.0	19.5	20.0	20.0	19.5	20.0	20.0	19.5	20.0	19.5	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Cattle/sheep/goats/hor	9.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Forestry	19.8	1.6	1.6	1.6	1.6	1.6	26.9	4.7	4.7	4.7	4.7	21.9	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	31.7	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	
Fishing	41.5	2.6	2.6	2.6	2.6	2.6	40.9	3.0	3.0	3.0	3.0	47.2	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	39.7	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	
Cereals/grains/nec	2.6	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	41.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	
Animal products/nec	2.6	0.4	0.4	0.4	0.4	0.4	2.6	0.3	0.3	0.3	0.3	2.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	
Oil/seeds	45.6	8.9	8.9	8.9	8.9	8.9	50.0	8.8	8.8	8.8	8.8	39.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	41.7	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	
Plant-based fibers	7.8	0.0	0.0	0.0	0.0	0.0	21.4	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Plant-based oils	68.2	13.2	13.2	13.2	13.2	13.2	59.4	13.0	13.0	13.0	13.0	65.5	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	59.6	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	
Vegetables/fruit/nuts	46.8	8.6	8.6	8.6	8.6	8.6	41.4	8.8	8.8	8.8	8.8	33.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	42.2	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	
Wheat	192.3	21.4	21.4	21.4	21.4	21.4	63.6	31.8	31.8	31.8	31.8	63.7	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	37.9	62.2	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	
Wool/silk/worm cocoons	3.7	0.0	0.0	0.0	0.0	0.0	14.9	1.9	1.5	1.6	1.5	1.4	13.2	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
Sectors	63.6	19.0	19.0	19.0	19.0	19.0	86.5	15.1	15.1	15.1	15.1	67.0	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	62.2	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	
Cattle/sheep/goats/hor	34.6	10.0	10.0	10.0	10.0	10.0	71.3	10.8	10.8	10.8	10.8	47.7	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	53.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	
Forestry	63.8	17.8	17.8	17.8	17.8	17.8	59.4	12.7	12.7	12.7	12.7	48.0	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	38.5	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	
Fishing	62.2	10.1	10.1	10.1	10.1	10.1	58.1	10.1	10.1	10.1	10.1	58.1	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	76.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	
Animal products/nec	65.8	8.9	8.8	8.8	8.8	8.8	94.5	12.3	12.3	12.3	12.3	69.4	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	89.8	15.0	14.9	14.9	14.9	14.9	14.9	14.9	14.9	
Crops/nec	59.8	4.4	4.4	4.4	4.4	4.4	61.1	4.9	4.9	4.9	4.9	65.8	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	68.1	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	
Plant-based fibers	63.3	12.7	12.7	12.7	12.7	12.7	62.9	6.0	6.0	6.0	6.0	26.0	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	38.4	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	
Plant-based oils	63.3	12.7	12.7	12.7	12.7	12.7	62.9	6.0	6.0	6.0	6.0	26.0	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	38.4	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	
Vegetables/fruit/nuts	68.5	21.9	21.6	21.7	21.8	21.5	92.1	37.2	37.1	37.1	37.1	88.7	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	56.0	72.0	25.7	25.6	25.6	25.4	25.4	25.4	25.4	
Wheat	105.7	8.6	8.6	8.6	8.6	8.6	105.1	9.1	9.1	9.1	9.1	105.2	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	96.7	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	
Wool/silk/worm cocoons	59.7	8.5	8.5	8.5	8.5	8.5	58.7	8.5	8.5	8.5	8.5	59.0	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	56.7	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	

Annex 4: Detailed simulation results (global model)

Table 1: Variation of the GDP (in volume)

Year	2007				2010				2015			
Region	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4
North African countries												
Tunisia	0.20	0.10	0.18	0.20	1.18	0.46	1.05	1.19	1.32	0.28	1.11	1.34
Morocco	0.01	0.00	0.02	0.01	0.06	0.01	0.12	0.06	-0.29	-0.38	-0.24	-0.29
Rest of North Africa	0.00	-0.01	0.00	0.00	0.03	-0.01	0.00	0.03	-0.22	-0.28	-0.25	-0.22
Sub-Saharan Countries												
South Africa	0.05	0.03	0.05	0.05	0.20	0.09	0.16	0.20	-0.02	-0.15	-0.07	-0.02
Rest of SACU	0.04	0.03	0.00	0.04	0.22	0.09	0.00	0.22	-0.08	-0.27	-0.38	-0.08
Rest of SADC countries	0.12	0.03	0.00	0.12	0.58	0.11	0.00	0.58	0.70	0.07	-0.06	0.70
Rest of sub-Saharan Africa	0.05	0.04	0.03	0.05	0.16	0.11	0.09	0.16	-0.33	-0.39	-0.42	-0.32
Rest of developing countries												
Non African G20 countries	0.06	0.03	0.03	0.06	0.23	0.10	0.12	0.23	0.21	0.06	0.09	0.22
Rest of developing countries	0.02	0.01	0.01	0.02	0.09	0.03	0.04	0.09	-0.06	-0.13	-0.12	-0.06
Developed regions												
European Union	0.02	0.00	0.00	0.02	0.08	0.01	0.02	0.08	0.06	-0.03	-0.01	0.06
USA	0.01	-0.02	-0.01	0.01	0.12	0.00	0.06	0.12	0.18	0.02	0.09	0.18
Japan	0.06	0.03	0.04	0.06	0.21	0.10	0.14	0.21	0.31	0.15	0.21	0.31
CAIRNS developed countries	0.20	0.08	0.10	0.20	0.77	0.22	0.30	0.77	1.03	0.33	0.44	1.03
Rest of developed countries	0.06	0.02	0.03	0.06	0.20	0.06	0.10	0.20	0.19	0.03	0.07	0.20

Note: Relative Variation according to the baseline scenario

Source: Authors simulation using the MIRAGE mode and MacMap data base for Market access

Table 2: Welfare impacts

Year	2007				2010				2015			
	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4
North African countries												
Tunisia	12,15	5,29	11,13	12,28	113,17	44,04	100,11	113,73	168,35	15,06	136,76	169,38
Morocco	-6,37	-6,87	-4,28	-6,37	-12,98	-16,04	-3,74	-12,98	-105,38	-113,47	-93,15	-105,39
Rest of North Africa	-35,71	-36,13	-36,24	-35,59	-65,60	-76,99	-73,67	-65,18	-320,79	-360,16	-345,51	-320,38
Sub-Saharan Countries												
South Africa	27,17	15,51	24,72	27,22	113,56	52,38	92,98	113,81	228,72	125,40	181,95	229,25
Rest of SACU	8,02	7,00	4,70	8,02	45,17	28,12	14,67	45,18	37,78	-16,64	-43,95	37,77
Rest of SADC countries	5,66	1,11	-0,47	5,66	36,90	6,16	-1,56	36,92	75,88	16,53	3,57	75,92
Rest of sub-Saharan Africa	17,30	14,01	12,46	17,73	78,18	57,82	49,90	79,94	-201,24	-240,28	-255,76	-198,33
Rest of developing countries												
Non African G20 countries	242,65	18,40	54,30	245,07	1719,52	453,76	639,12	1728,51	2984,19	630,94	969,81	2996,62
Rest of developing countries	-71,88	-144,30	-135,18	-70,86	284,23	-165,04	-93,27	289,48	-1539,44	-2461,29	-2299,00	-1525,84
Developed regions												
European Union	-13,11	-428,58	-349,57	-12,12	1525,29	79,32	383,56	1530,55	9425,73	7596,45	8059,47	9441,00
USA	561,46	517,58	555,04	561,99	1575,19	1307,31	1562,92	1578,56	2559,58	1873,76	2477,50	2568,44
Japan	764,98	-131,81	94,84	765,13	3539,50	262,19	1045,47	3540,41	2468,24	-587,00	-4,43	2470,11
CAIRNS developed countries	327,54	98,77	147,11	328,32	1663,41	453,92	712,36	1667,39	2803,85	871,52	1313,47	2813,20
Rest of developed countries	10,09	-151,60	-81,84	11,06	251,67	-333,00	-69,12	254,12	-727,46	-1250,29	-994,40	-727,47

Note: Absolute variation according to the baseline scenario
Source: Authors simulation using the MIRAGE mode and MacMap data base for Market access

Table 3: Trade balance impacts

Year	2007				2010				2015			
	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4
North African countries												
Tunisia	2,21	1,75	2,56	2,23	13,99	7,87	14,94	14,07	28,00	15,33	28,35	28,18
Morocco	-1,38	-1,79	-0,12	-1,38	-4,59	-6,06	2,35	-4,61	-10,07	-14,19	0,86	-10,13
Rest of North Africa	-14,28	-13,76	-13,32	-14,25	-37,19	-33,78	-32,45	-37,06	-68,35	-59,84	-60,94	-68,18
Sub-Saharan Countries												
South Africa	-26,35	-25,10	-25,31	-26,34	-62,40	-60,92	-57,61	-62,35	-104,35	-137,13	-109,33	-104,23
Rest of SACU	1,35	1,97	1,13	1,35	4,83	6,95	2,50	4,85	8,28	9,64	2,28	8,31
Rest of SADC countries	3,19	0,83	0,25	3,19	19,87	4,38	1,34	19,87	38,07	7,23	1,81	38,07
Rest of sub-Saharan Africa	10,59	7,89	6,78	10,68	34,88	21,63	15,78	35,29	36,62	10,75	0,78	37,45
Rest of developing countries												
Non African G20 countries	68,72	-58,37	-33,79	69,84	368,72	-137,50	-52,84	375,18	272,85	-256,12	-185,59	288,90
Rest of developing countries	-73,36	-59,79	-69,25	-73,36	-149,47	-84,11	-130,65	-149,59	-77,44	26,31	-54,49	-77,80
Developed regions												
European Union	426,21	471,36	473,53	425,25	1321,96	1735,67	1679,89	1317,64	1020,73	2171,41	1842,36	1010,67
USA	703,69	692,73	686,34	704,00	153,90	-21,34	42,66	155,20	-706,71	-1009,84	-699,35	-704,83
Japan	-194,77	-206,31	-189,70	-195,11	-145,52	-202,42	-147,91	-147,58	82,10	13,98	59,87	76,61
CAIRNS developed countries	-503,64	-477,41	-489,90	-503,94	-578,87	-627,82	-640,18	-579,43	416,10	-344,97	-239,89	417,75
Rest of developed countries	-402,20	-333,99	-349,18	-402,16	-940,11	-602,54	-697,82	-941,46	-935,82	-432,56	-586,71	-940,78

Note: Absolute variation according to the baseline scenario

Source: Authors simulation using the MIRAGE mode and MacMap data base for Market access

Table 4: Sectoral world price variation

	2007				2010				2015			
	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4
Agricultural sectors												
Paddy rice	-1,52	-1,33	-1,36	-1,52	-2,52	-1,69	-1,84	-2,53	-2,16	-1,25	-1,47	-2,18
Wheat	0,42	0,26	0,31	0,42	1,68	1,05	1,25	1,69	2,56	1,91	2,14	2,56
Cereal grains nec	0,31	0,25	0,28	0,31	1,39	1,13	1,26	1,39	3,81	3,55	3,64	3,81
Vegetables. fruit. nuts	0,19	0,18	0,21	0,19	0,66	0,61	0,70	0,66	1,26	1,18	1,26	1,26
Oil seeds	-0,58	-0,63	-0,62	-0,58	-0,07	-0,30	-0,24	-0,07	0,69	0,41	0,48	0,68
Sugar cane. sugar beet	0,20	0,17	0,17	0,20	0,62	0,48	0,50	0,62	0,93	0,79	0,81	0,93
Plant-based fibers	0,20	0,16	0,17	0,20	0,75	0,57	0,61	0,75	1,54	1,29	1,35	1,54
Crops nec	0,24	0,22	0,23	0,24	0,80	0,69	0,71	0,80	1,21	1,08	1,09	1,21
Cattle.sheep. goats. horses	0,90	0,86	0,87	0,90	2,76	2,57	2,60	2,76	4,64	4,53	4,49	4,65
Animal products nec	0,49	0,48	0,48	0,49	1,27	1,22	1,25	1,27	1,82	1,80	1,81	1,82
Raw milk	0,27	0,25	0,26	0,27	0,85	0,78	0,79	0,85	2,56	2,48	2,50	2,56
Wool. silk-worm cocoons	0,24	0,17	0,19	0,24	0,77	0,42	0,51	0,77	1,19	0,69	0,82	1,19
Forestry	0,00	-0,03	-0,02	0,00	0,19	0,04	0,07	0,19	0,44	0,26	0,29	0,44
Fishing	-0,07	-0,08	-0,08	-0,07	-0,04	-0,11	-0,10	-0,04	0,09	0,00	0,01	0,09
Industrial Sectors												
AgroInd	0,17	0,16	0,16	0,17	0,48	0,43	0,43	0,48	1,84	1,81	1,81	1,84
TexVet	0,06	0,03	0,04	0,06	0,22	0,10	0,12	0,21	0,45	0,29	0,32	0,45
IndBasTe	0,04	0,01	0,02	0,04	0,18	0,05	0,08	0,18	0,32	0,16	0,20	0,32
IndMoyTe	0,02	0,00	0,00	0,02	0,10	0,01	0,03	0,10	0,22	0,10	0,12	0,22
IndLourd	0,01	-0,01	-0,01	0,01	0,07	-0,01	0,01	0,07	0,19	0,08	0,10	0,19
ResNat	0,03	0,01	0,01	0,03	0,16	0,04	0,07	0,16	0,36	0,19	0,23	0,36

Table 5: Sectoral value added for North African countries

	MOR											
	2007				2010				2015			
	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4
Agricultural sectors												
Paddy rice	-1,36	0,00	0,75	-1,36	-9,28	-1,18	2,27	-9,28	-13,33	-0,94	2,87	-13,32
Wheat	0,52	0,52	0,48	0,52	1,83	1,76	1,64	1,84	4,61	4,58	4,43	4,61
Cereal grains nec	0,13	0,18	0,16	0,13	0,23	0,46	0,36	0,23	2,08	2,38	2,25	2,08
Vegetables. fruit. nuts	0,27	0,01	0,32	0,27	1,10	-0,01	1,39	1,10	1,44	-0,10	1,83	1,44
Oil seeds	1,57	1,60	1,56	1,57	3,44	3,56	3,39	3,45	4,74	4,91	4,69	4,76
Sugar cane. sugar beet	-0,23	-0,12	-0,17	-0,23	-0,97	-0,44	-0,67	-0,97	-0,25	0,50	0,17	-0,25
Plant-based fibers	0,20	0,22	0,19	0,20	0,38	0,46	0,35	0,38	0,52	0,61	0,50	0,52
Crops nec	0,44	0,49	0,44	0,44	1,22	1,44	1,22	1,21	0,52	0,98	0,58	0,49
Cattle.sheep. goats. horses	-0,01	0,00	0,00	-0,01	-0,03	0,03	0,03	-0,03	0,15	0,21	0,23	0,16
Animal products nec	-0,05	-0,02	-0,04	-0,05	-0,20	-0,06	-0,12	-0,20	-0,18	0,00	-0,06	-0,18
Raw milk	-0,11	-0,04	-0,06	-0,11	-0,46	-0,12	-0,24	-0,46	0,37	0,82	0,68	0,37
Wool. silk-worm cocoon	-0,04	-0,03	-0,06	-0,04	-0,10	-0,08	-0,22	-0,10	-0,50	-0,50	-0,68	-0,50
Forestry	0,00	0,02	-0,01	0,00	0,07	0,12	0,00	0,07	-0,09	-0,03	-0,17	-0,08
Fishing	0,05	0,08	0,06	0,05	0,15	0,28	0,20	0,15	-0,07	0,11	0,02	-0,06
Industrial Sectors												
AgroInd	-0,29	-0,14	-0,18	-0,29	-1,14	-0,49	-0,67	-1,14	0,22	1,06	0,82	0,22
TexVet	-0,04	-0,04	-0,08	-0,04	-0,07	-0,09	-0,26	-0,07	-0,71	-0,76	-0,98	-0,71
IndBasTe	-0,06	-0,05	-0,08	-0,06	-0,19	-0,15	-0,24	-0,19	-0,64	-0,59	-0,69	-0,64
IndMoyTe	-0,06	-0,05	-0,07	-0,06	-0,18	-0,14	-0,23	-0,18	-0,49	-0,43	-0,54	-0,49
IndLourd	-0,11	-0,09	-0,12	-0,11	-0,34	-0,25	-0,41	-0,34	-0,95	-0,82	-1,03	-0,95
ResNat	-0,05	-0,05	-0,07	-0,05	-0,14	-0,15	-0,30	-0,15	-0,65	-0,71	-0,95	-0,65

	RNA											
	2007				2010				2015			
	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4
Agricultural sectors												
Paddy rice	0,34	0,47	0,39	0,30	0,23	0,99	0,53	0,05	0,75	1,47	0,66	0,27
Wheat	0,50	0,41	0,44	0,50	1,72	1,30	1,45	1,73	3,31	2,81	3,00	3,31
Cereal grains nec	0,45	0,43	0,45	0,45	1,14	1,05	1,13	1,14	2,26	2,13	2,23	2,25
Vegetables. fruit. nuts	0,04	0,02	0,04	0,04	0,16	0,10	0,17	0,16	0,49	0,40	0,49	0,49
Oil seeds	1,61	1,58	1,59	1,61	3,99	3,78	3,88	3,99	5,98	5,59	5,79	5,97
Sugar cane. sugar beet	0,01	0,00	0,00	0,01	0,11	0,03	0,05	0,10	1,60	1,47	1,50	1,58
Plant-based fibers	0,56	0,57	0,56	0,56	1,30	1,36	1,32	1,30	1,70	1,74	1,70	1,70
Crops nec	0,22	0,27	0,24	0,21	0,61	0,83	0,65	0,55	0,62	0,97	0,66	0,48
Cattle.sheep. goats.horses	0,05	0,02	0,03	0,05	0,25	0,09	0,17	0,24	1,02	0,81	0,91	1,02
Animal products nec	0,01	0,01	0,01	0,01	0,08	0,05	0,06	0,08	0,64	0,58	0,60	0,64
Raw milk	0,03	0,01	0,02	0,02	0,14	0,08	0,09	0,14	1,24	1,14	1,16	1,23
Wool. silk-worm cocoons	0,07	0,05	0,06	0,07	0,27	0,14	0,21	0,27	0,18	-0,06	0,06	0,19
Forestry	0,00	0,01	0,01	0,00	0,06	0,10	0,08	0,06	0,03	0,07	0,05	0,03
Fishing	-0,02	-0,02	-0,02	-0,02	-0,02	-0,03	-0,03	-0,03	0,02	0,00	0,01	0,02
Industrial Sectors												
AgroInd	0,00	-0,02	-0,02	0,00	0,09	-0,02	0,00	0,08	2,01	1,85	1,88	1,99
TexVet	-0,07	-0,06	-0,07	-0,07	-0,23	-0,17	-0,21	-0,23	-0,78	-0,69	-0,75	-0,77
IndBasTe	-0,04	-0,03	-0,04	-0,04	-0,11	-0,08	-0,10	-0,11	-0,28	-0,24	-0,26	-0,28
IndMoyTe	-0,06	-0,05	-0,05	-0,06	-0,21	-0,14	-0,17	-0,21	-0,51	-0,42	-0,45	-0,51
IndLourd	-0,11	-0,08	-0,09	-0,11	-0,38	-0,24	-0,29	-0,37	-0,93	-0,74	-0,81	-0,92
ResNat	-0,02	-0,02	-0,02	-0,02	-0,10	-0,07	-0,09	-0,10	-0,33	-0,29	-0,32	-0,33

	TUN											
	2007				2010				2015			
	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4
Agricultural sectors												
Paddy rice	-0,51	0,55	0,69	-0,49	-4,16	0,03	0,13	-4,09	-2,78	1,43	2,16	-2,66
Wheat	-1,79	-1,61	-1,78	-1,79	-9,75	-8,23	-9,62	-9,73	-16,43	-14,08	-15,94	-16,39
Cereal grains nec	0,35	0,35	0,38	0,35	-0,62	-0,14	-0,38	-0,61	4,93	5,64	5,37	4,95
Vegetables. fruit. nuts	0,04	0,01	0,07	0,04	0,46	-0,06	0,51	0,46	1,38	0,02	1,30	1,37
Oil seeds	1,56	1,31	1,49	1,55	6,21	3,97	5,72	6,19	12,34	6,98	11,23	12,30
Sugar cane. sugar beet	1,31	0,57	1,20	1,31	9,62	3,14	8,49	9,58	18,06	5,74	15,76	17,99
Plant-based fibers	-0,15	-0,01	-0,16	-0,15	-1,42	-0,18	-1,31	-1,41	-2,69	-0,65	-2,44	-2,68
Crops nec	0,34	0,49	0,34	0,34	0,25	1,51	0,41	0,25	0,55	2,53	0,90	0,56
Cattle.sheep. goats.horses	1,40	0,65	1,28	1,39	9,88	3,43	8,75	9,84	18,33	6,14	16,06	18,27
Animal products nec	0,79	0,33	0,72	0,78	5,81	1,73	5,10	5,76	11,07	3,12	9,61	10,97
Raw milk	1,00	0,47	0,92	0,99	6,79	2,35	6,01	6,77	11,96	4,00	10,46	11,92
Wool. silk-worm cocoons	-0,09	0,08	-0,11	-0,09	-1,65	0,07	-1,52	-1,63	-3,25	0,01	-2,87	-3,23
Forestry	-0,09	0,13	-0,07	-0,08	-1,35	0,46	-1,08	-1,31	-2,17	0,93	-1,65	-2,07
Fishing	0,12	0,07	0,12	0,12	1,05	0,40	0,96	1,05	2,31	0,72	2,04	2,30
Industrial Sectors												
AgroInd	1,61	0,70	1,48	1,60	11,39	3,72	10,06	11,35	20,07	6,40	17,52	20,00
TexVet	-0,13	-0,03	-0,13	-0,13	-1,18	-0,20	-1,08	-1,17	-2,25	-0,16	-1,98	-2,24
IndBasTe	-0,12	-0,04	-0,11	-0,12	-1,00	-0,24	-0,87	-0,99	-1,93	-0,41	-1,63	-1,92
IndMoyTe	-0,16	-0,06	-0,15	-0,15	-1,16	-0,29	-1,02	-1,15	-1,97	-0,38	-1,69	-1,96
IndLourd	-0,36	-0,15	-0,33	-0,36	-2,45	-0,70	-2,14	-2,44	-4,59	-1,46	-3,99	-4,57
ResNat	-0,09	-0,03	-0,08	-0,09	-0,80	-0,20	-0,72	-0,80	-1,72	-0,30	-1,50	-1,71

Table 6: Sectoral value added for Sub-Saharan countries

	SADCRSADC											
	2007				2010				2015			
	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4
Agricultural sectors												
Paddy rice	0,10	0,11	0,07	0,10	0,60	0,35	0,13	0,60	2,05	1,29	0,91	2,05
Wheat	0,69	0,41	0,45	0,69	2,85	1,40	1,49	2,85	5,60	3,42	3,37	5,61
Cereal grains nec	0,06	0,03	0,02	0,06	0,36	0,13	0,10	0,36	0,83	0,40	0,32	0,83
Vegetables. fruit. nuts	0,00	0,01	0,06	0,00	-0,04	0,03	0,21	-0,04	-0,08	0,02	0,19	-0,08
Oil seeds	0,67	0,66	0,65	0,67	1,52	1,44	1,39	1,52	2,16	2,00	1,91	2,16
Sugar cane. sugar beet	0,12	0,07	0,01	0,12	0,82	0,34	0,03	0,82	2,11	1,08	0,58	2,11
Plant-based fibers	0,70	0,73	0,78	0,70	1,30	1,59	1,84	1,30	1,40	1,99	2,38	1,41
Crops nec	0,44	0,42	0,39	0,44	1,35	1,27	1,15	1,35	1,95	1,81	1,58	1,94
Cattle.sheep. goats.horses	0,11	0,05	0,00	0,11	0,84	0,30	0,01	0,84	2,18	1,05	0,57	2,18
Animal products nec	0,04	0,03	0,01	0,04	0,31	0,17	0,03	0,31	0,86	0,48	0,24	0,86
Raw milk	0,06	0,03	-0,01	0,07	0,55	0,21	0,00	0,55	1,55	0,80	0,44	1,55
Wool. silk-worm cocoons	0,03	0,01	-0,01	0,03	0,28	0,09	-0,01	0,29	0,79	0,35	0,18	0,80
Forestry	-0,08	-0,07	-0,06	-0,08	-0,22	-0,14	-0,11	-0,22	-0,32	-0,23	-0,19	-0,32
Fishing	0,02	0,00	-0,01	0,02	0,21	0,07	-0,02	0,21	0,55	0,23	0,08	0,55
Industrial Sectors												
AgroInd	0,19	0,09	0,00	0,19	1,35	0,51	0,00	1,35	3,42	1,70	0,91	3,42
TexVet	-0,18	-0,15	-0,12	-0,18	-0,70	-0,45	-0,27	-0,70	-1,18	-0,66	-0,38	-1,18
IndBasTe	-0,11	-0,09	-0,07	-0,11	-0,45	-0,29	-0,16	-0,45	0,01	0,30	0,46	0,01
IndMoyTe	-0,15	-0,11	-0,09	-0,15	-0,71	-0,41	-0,28	-0,71	-1,40	-0,82	-0,62	-1,40
IndLourd	-0,22	-0,17	-0,14	-0,22	-1,02	-0,61	-0,41	-1,02	-2,32	-1,50	-1,18	-2,32
ResNat	-0,06	-0,05	-0,04	-0,06	-0,36	-0,21	-0,11	-0,36	-0,88	-0,51	-0,29	-0,88

	RSCU											
	2007				2010				2015			
	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4
Agricultural sectors												
Paddy rice	0,40	0,55	0,59	0,40	0,00	0,88	1,14	0,01	-0,26	1,17	1,63	-0,25
Wheat	1,24	0,77	0,74	1,24	6,36	3,04	2,76	6,37	14,09	7,29	6,49	14,10
Cereal grains nec	0,32	0,13	0,10	0,32	1,76	0,50	0,28	1,76	3,34	0,97	0,52	3,34
Vegetables. fruit. nuts	0,25	0,11	0,43	0,25	0,98	0,37	1,83	0,98	1,74	0,71	2,56	1,73
Oil seeds	0,90	0,61	0,54	0,90	3,68	1,65	1,24	3,68	6,59	2,59	1,85	6,60
Sugar cane. sugar beet	1,12	0,31	0,09	1,12	6,61	1,45	0,30	6,61	11,82	2,86	1,04	11,82
Plant-based fibers	-0,01	0,16	0,20	-0,01	-0,76	0,29	0,54	-0,77	-2,10	-0,31	0,10	-2,11
Crops nec	0,39	0,22	0,17	0,39	2,06	0,81	0,50	2,06	4,16	1,51	0,94	4,16
Cattle.sheep. goats.horses	0,81	0,25	0,13	0,81	4,80	1,15	0,45	4,80	9,09	2,39	1,16	9,09
Animal products nec	0,50	0,23	0,15	0,50	2,91	0,95	0,51	2,91	5,71	1,77	0,98	5,72
Raw milk	0,92	0,26	0,08	0,92	5,48	1,23	0,27	5,48	9,98	2,47	0,93	9,98
Wool. silk-worm cocoons	0,30	0,14	0,08	0,30	1,74	0,55	0,25	1,74	3,58	1,28	0,78	3,58
Forestry	-0,15	-0,03	-0,01	-0,15	-0,77	-0,11	0,00	-0,77	-1,50	-0,54	-0,37	-1,50
Fishing	0,43	0,21	0,15	0,43	2,52	0,87	0,48	2,52	5,08	1,64	0,91	5,08
Industrial Sectors												
AgroInd	1,33	0,36	0,09	1,33	7,45	1,61	0,30	7,45	12,59	3,02	1,08	12,59
TexVet	-0,24	-0,04	0,02	-0,24	-1,49	-0,19	0,12	-1,49	-3,90	-1,69	-1,20	-3,90
IndBasTe	-0,21	-0,04	0,02	-0,21	-1,30	-0,20	0,10	-1,30	-3,70	-1,89	-1,42	-3,70
IndMoyTe	-0,51	-0,17	-0,10	-0,51	-2,62	-0,66	-0,34	-2,62	-3,96	-0,90	-0,43	-3,96
IndLourd	-0,31	-0,09	-0,03	-0,31	-1,74	-0,38	-0,08	-1,75	-2,54	-0,28	0,17	-2,54
ResNat	-0,17	-0,04	-0,01	-0,17	-1,28	-0,26	-0,04	-1,28	-4,16	-1,93	-1,49	-4,17

	RSSAHAF											
	2007				2010				2015			
	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4
Agricultural sectors												
Paddy rice	-0,09	-0,04	-0,04	-0,10	-0,41	-0,11	-0,14	-0,42	0,81	1,19	1,14	0,79
Wheat	1,26	0,99	1,12	1,26	4,53	3,34	3,97	4,54	9,67	8,35	9,18	9,67
Cereal grains nec	-0,01	0,00	0,00	-0,01	-0,06	0,01	-0,01	-0,06	0,13	0,24	0,20	0,13
Vegetables. fruit. nuts	0,41	-0,05	-0,03	0,41	1,91	-0,14	-0,06	1,91	2,61	-0,32	-0,24	2,61
Oil seeds	2,20	2,25	2,24	2,20	5,22	5,45	5,44	5,22	7,91	8,28	8,26	7,91
Sugar cane. sugar beet	-0,07	-0,04	-0,05	-0,08	-0,26	-0,08	-0,12	-0,27	0,68	0,92	0,87	0,66
Plant-based fibers	1,25	1,27	1,30	1,25	2,77	2,83	2,99	2,79	3,18	3,22	3,46	3,21
Crops nec	0,31	0,45	0,40	0,32	0,81	1,41	1,19	0,82	0,91	1,80	1,46	0,92
Cattle.sheep. goats.horses	-0,03	-0,01	-0,02	-0,03	-0,10	-0,02	-0,04	-0,10	0,19	0,30	0,26	0,18
Animal products nec	-0,04	-0,01	-0,02	-0,05	-0,17	0,00	-0,04	-0,18	0,01	0,27	0,20	0,00
Raw milk	-0,02	-0,01	-0,02	-0,03	-0,06	-0,02	-0,02	-0,06	-0,05	0,02	0,01	-0,05
Wool. silk-worm cocoons	-0,05	-0,04	-0,03	-0,05	-0,11	-0,09	-0,03	-0,12	0,26	0,24	0,36	0,25
Forestry	-0,05	-0,04	-0,03	-0,05	-0,06	-0,04	-0,02	-0,06	-0,19	-0,19	-0,16	-0,19
Fishing	-0,02	0,00	-0,01	-0,02	-0,06	0,02	0,00	-0,06	0,38	0,49	0,46	0,37
Industrial Sectors												
AgroInd	-0,07	-0,03	-0,04	-0,08	-0,27	-0,05	-0,12	-0,29	1,08	1,40	1,31	1,06
TexVet	-0,14	-0,15	-0,13	-0,14	-0,34	-0,41	-0,32	-0,34	-0,79	-0,91	-0,76	-0,78
IndBasTe	-0,13	-0,12	-0,11	-0,13	-0,39	-0,36	-0,32	-0,38	-0,78	-0,74	-0,68	-0,78
IndMoyTe	-0,11	-0,11	-0,10	-0,11	-0,35	-0,32	-0,29	-0,35	-0,85	-0,80	-0,76	-0,84
IndLourd	-0,24	-0,22	-0,21	-0,24	-0,84	-0,74	-0,69	-0,83	-2,02	-1,86	-1,78	-2,02
ResNat	-0,06	-0,06	-0,05	-0,06	-0,19	-0,20	-0,17	-0,18	-0,52	-0,59	-0,53	-0,52

	SAF											
	2007				2010				2015			
	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4	sim1	sim2	sim3	sim4
Agricultural sectors												
Paddy rice	1,201	1,18	1,087	1,201	3,1	2,841	2,393	3,102	5,627	4,844	4,154	5,632
Wheat	1,039	0,291	0,279	1,039	6,343	0,983	0,946	6,344	14,29	2,693	2,686	14,29
Cereal grains nec	0,489	0,401	0,584	0,489	1,76	1,314	2,24	1,76	3,615	2,864	4,282	3,617
Vegetables. fruit. nuts	0,521	0,201	0,719	0,522	2,252	0,739	3,348	2,256	4,273	1,712	6,032	4,283
Oil seeds	2,299	2,045	1,982	2,299	7,863	5,832	5,533	7,864	15,16	10,53	10,11	15,16
Sugar cane. sugar beet	0,231	0,103	0,119	0,231	1,174	0,46	0,565	1,176	2,725	1,513	1,749	2,728
Plant-based fibers	0,469	0,523	0,456	0,471	1,311	1,536	1,236	1,319	2,993	3,259	2,843	3,015
Crops nec	0,324	0,332	0,285	0,325	1,21	1,165	0,964	1,213	2,81	2,575	2,333	2,819
Cattle.sheep. goats.horses	0,241	0,106	0,116	0,242	1,205	0,461	0,541	1,206	2,663	1,449	1,655	2,666
Animal products nec	0,154	0,111	0,104	0,155	0,698	0,411	0,405	0,701	1,545	1,007	1,057	1,553
Raw milk	0,183	0,085	0,1	0,183	0,906	0,367	0,461	0,907	2,077	1,168	1,368	2,079
Wool. silk-worm cocoons	0,218	0,24	0,184	0,219	0,891	0,857	0,642	0,898	3,268	2,926	2,683	3,293
Forestry	-0,02	-0,01	-0,03	-0,02	-0,04	0,018	-0,06	-0,04	-0,64	-0,62	-0,71	-0,64
Fishing	0,091	0,062	0,062	0,091	0,575	0,326	0,351	0,575	1,517	0,949	1,04	1,519
Industrial Sectors												
AgroInd	0,307	0,133	0,169	0,307	1,463	0,561	0,745	1,465	3,163	1,746	2,08	3,168
TexVet	-0,03	-0	-0,02	-0,03	-0,14	8E-04	-0,09	-0,14	-2,57	-2,41	-2,53	-2,57
IndBasTe	-0,05	-0,03	-0,04	-0,05	-0,16	-0,06	-0,14	-0,16	-2,31	-2,22	-2,32	-2,32
IndMoyTe	-0,09	-0,05	-0,07	-0,09	-0,35	-0,15	-0,25	-0,35	-0,35	-0,07	-0,21	-0,36
IndLourd	-0,13	-0,07	-0,1	-0,13	-0,52	-0,23	-0,36	-0,52	-0,09	0,364	0,169	-0,09
ResNat	-0,06	-0,03	-0,04	-0,06	-0,22	-0,08	-0,15	-0,22	-1,28	-1,06	-1,16	-1,28

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