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Agricultural trade liberalization in West Asia and North Africa*

Nicholas Minot**
Senior Research Fellow
n.minot@cgiar.org

Mohamed Chemingui
United Nations Economic Commission for Africa
mohamed_chemingui@yahoo.fr

Marcelle Thomas**
Research Analyst
m.b.thomas@cgiar.org

Reno Dewina**
Research Analyst
r.dewina@cgiar.org

David Orden**
Senior Research Fellow
d.orden@cgiar.org

** Markets, Trade, and Institutions
International Food Policy Research Institute

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Although trade liberalization has reduced barriers to trade in numerous sectors, the agricultural sector remains highly protected in many countries. Most countries use a variety of measures, including tariffs, tariff rate quotas and non-technical barriers, to protect their farmers from import competition. Some countries (particularly high-income countries) provide direct support to farmers in the form of subsidized inputs and price supports. As a result, agriculture is one of the most distorted sectors in the world economy. Economic theory and most empirical studies suggest that the benefits of trade liberalization exceed the costs, at least on aggregate (Anderson, Martin and Van der Mensbrugge 2005; USDA 2001; Beghin and Van der Mensbrugge 2003). However, policymakers are reluctant to reduce support for their own farmers unless they are assured that other countries will reciprocate.

These issues are of interest to most developing countries because of the dependence of the rural poor on agricultural income and because of the importance of food prices to the well-being of the urban poor. This concern is even greater in the West Asia and North Africa (WANA) region because most of the countries in this region are dependent on food imports to meet consumption requirements. Furthermore, the high level of protection for farmers in the WANA region implies that full trade liberalization would have a larger impact in this region than elsewhere.

The WANA countries were characterized by relatively slow economic growth, high unemployment, and relatively high barriers to international trade and investment. While war and internal conflict certainly contribute to poor economic performance, some observers also suggest that economic growth is inhibited by barriers to international trade. On the other hand, policymakers in the region are concerned that domestic trade

liberalization will adversely affect the poor, particularly small farmers. Furthermore, there is concern that global agricultural trade liberalization, by raising world agricultural prices, could adversely affect the region because almost all the countries in the region are net agricultural importers. Although there are numerous studies of the aggregate impact of trade liberalization on WANA countries, few studies have examined the impact of trade liberalization on the agricultural sector and on income distribution, with the exception of Ravallion and Lokshin (2004) on Morocco.

This article attempts to address this gap in the literature. First, we review agricultural trade patterns and previous research on thirteen WANA countries: Morocco, Algeria, Tunisia, Egypt, the West Bank and Gaza, Lebanon, Jordan, Syria, Turkey, the Sudan, Somalia, Djibouti, and Yemen. Second, we examine the distributional impact of agricultural trade liberalization in three of these countries: Egypt, Tunisia, and Syria. For this analysis we use a combination of household survey data and computable general equilibrium (CGE) models. Third, we explore some of the reasons that these analyses show a relatively modest effect of trade policy on farm income and poverty.

Regional Overview

Trade liberalization is expected to result in relative price changes that will affect each country at the national level according to its pattern of production and trade. The 13 WANA countries discussed here (hereafter referred to as WANA13 countries) are characterized by a high dependence on food imports, a situation that may threaten food security if international food prices rise significantly. This section describes the patterns

of agricultural production, trade and trade policy in the WANA13 countries, as to provide a background for the discussion of the impact of trade liberalization in the following section.

Patterns of Agricultural Production and Trade.

WANA13 countries are low-income or lower-middle income countries according to the World Bank classification (World Bank 2006). Their national average per capita incomes range from below US\$600 in the poorest Least Developed Countries (LDCs), Somalia, the Sudan and Yemen to US\$3,925 in Lebanon. The average growth in per capita GDP was only 1.3% across the WANA13 countries over the 1990s and barely 1.2% over 2000-03 (World Bank 2006).

Despite its low contribution to GDP, agriculture continues to play a crucial role in the WANA13 region, as in most developing countries, due to its contribution to employment (table 1). This combination reflects the low productivity in agriculture in these countries and, consequently, the relatively large share of poverty in rural areas (IFAD 2003).

In some WANA13 countries, the labor force engaged in agriculture is significant, more than 70% in Djibouti and Somalia and more than 48% in the Sudan and Yemen. This is consistent with the fact that, at least in three of these countries (Djibouti is the exception), the majority of the population lives in rural areas. Turkey has the highest share of employment in agriculture among middle income WANA13 countries, 45%, followed by Morocco and Egypt with 35% and 32%, respectively (table 1).

Another measure of the importance of the agricultural sector is the share of agricultural exports in total exports. In WANA13 countries the contribution of agriculture to exports is below 10% in every country except the Sudan, and it has decreased since 1993 when it ranged between 10 and 28% (DeRosa 1997). However, the impact of agricultural trade liberalization on households may be large even if only a small share of exports is from the agricultural sector because agriculture trade affects food prices and, thus, food security, especially among poor households.

The agricultural trade structures in WANA13 reveal that almost all countries are net food importers, except for Turkey, especially of cereal (a regional average of 30% of agricultural imports) (figure 1). Wheat is a staple food and a major import for most of the WANA13 countries reaching above 15% for nearly half of the region (figure 2). Trade in the region is also characterized by the importance of fruit and vegetables exports, a regional average of 44% of total agricultural exports (FAO 2005).

For most of these countries (Algeria, Egypt, Morocco, Syria, Tunisia and Turkey), the European Union (EU) is the main trading partner: exports from these countries to the EU average between 41 and 80% of their respective total exports. The direction of trade flows is different in the region's LDCs: their main trading partners are other LDCs in the region and other Arab countries, particularly Saudi Arabia and United Arab Emirates, with the exception of Sudan, which trades mostly with China, Japan, and other Asian countries (IMF 2005).

Structure of Protection

Table 2 summarizes the average level of protection among ten WANA13 countries and other groups computed using the MAcMap-HS6 dataset for 2001 (CEPII 2005). The MAcMap-HS6 dataset is a collection of weighted averages of the tariffs or tariff equivalents of applied border protection for 165 reporting countries, 5,111 commodities and 208 trading partners. The tariff equivalents reflect all regional agreements and trade preferences, resulting in true measures of the degree of trade discrimination. Relative to other regions in the world, the WANA13 countries have high levels of protection. Except for Lebanon and Turkey, WANA13 countries have levels of protection ranging between 11 and 30%. Bouët (2006b) ranks Egypt, Morocco and Tunisia among the 11 most protectionist countries in the MAcMap-HS6 set of countries. Zarrouk and Zallio (2000) argue that industrial strategies founded on import substitution and a large public sector have led to high protection in WANA13 countries and that governments have ended up relying on import duties as a main source of revenues.

Since the structural adjustment programs and accession to WTO, which curtailed industrial protection, the average global tariff has decreased (WTO 2002), but agriculture protection has been reduced at a much slower pace. By 2001, seven of the ten WANA13 countries included in the MAcMap-HS6 dataset were protecting agriculture more than industry: for example, 41% versus 3% in Turkey, 56% versus 17% in Tunisia and 43% versus 19% in Morocco (table 2).

Agricultural protection in WANA13 countries also varies relative to trading partners. WANA13 countries impose an average agricultural tariff rate on imports from

WANA13 countries of 31% that is nearly equal to the average tariff on the rest of the world of 32%. Conversely, the tariff faced by the exports of WANA13 countries to other WANA13 countries, 31%, is higher, on average, than the tariffs faced by exports to other country groups: 12% to developed countries, 20% to developing countries and 22% to LDCs (authors' calculations based on MAcMap-HS6 CEPII 2005). In spite of the various regional agreements among Arab countries, regional integration among WANA13 countries has been limited.

WANA13 countries with the highest average tariff rates also have very high tariffs on selected commodities: Morocco has a 226% tariff on livestock, 161% on meat and 140% on rice. Tunisia protects fruits and vegetables at an average tariff of 152% and olive oil at 156%. Turkey has a 166% average tariff rate on meat, 103% on dairy and 112% on sugar. Algeria has a more evenly distributed protection pattern and lower rates, as does Egypt, except for cotton, which has a tariff rate of 54%. Fruit and vegetables and olive oil, the main export sectors in WANA13 countries, are consistently protected (authors' calculations based on MAcMap-HS6 CEPII 2005).

Among the protection instruments used by WANA13 countries, in addition to standard tariffs, are para-tariff measures (custom surcharges, additional taxes and surcharges, stamp taxes, statistics taxes, and sales taxes levied on imports) and non-tariff barriers such as quantitative restrictions and technical requirements (Oliva 2000). While these measures are not included in the protection indicators presented in this section and would not be addressed directly by trade policy reforms, they represent institutional constraints that would lower the ability of WANA13 countries to benefit fully from trade liberalization.

Trade Agreements in the Region

The WANA13 countries have signed a series of multilateral, regional and bilateral trade agreements. The Uruguay Round Agreement on Agriculture (URAA) imposes some commitments on member countries; some of the more important commitments are:

- to convert quantitative restrictions into tariffs or tariff rate quotas;
- to bind tariff rates by setting a maximum rate for each tariff line;
- to reduce bound tariff rates by an average of 36% and a minimum of 15% for each item; and
- to reduce trade-distorting measures of support for agriculture by 20%, on average.

Developing countries have been given more modest targets for tariff rate reductions and more time to comply, while the LDCs are effectively exempted from meeting most commitments under the URAA. The direct impact of these commitments on the WANA13 countries has been modest. Somalia, Syria, and West Bank and Gaza are not WTO members. Algeria, Lebanon, the Sudan and Yemen are observers. Just six of the WANA13 countries are members of the World Trade Organization (WTO). Of these, one (Djibouti) is an LDC, so it is exempt from most URAA commitments. For the remaining five countries, the bound rates are often far above the applied tariff rates, particularly for agricultural products. Thus, commitments to reduce the bound rate have had little effect on the actual level of agricultural protection.

As part of the Euro-Mediterranean Partnership (EMP), the EU has signed Association Agreements (EMAAs) with five WANA countries, and three others are in

the process of ratification. These EMAAs commit the parties to phasing out almost all tariffs on manufactured goods, though the WANA countries have a longer period to comply. Although there are plans to incorporate agriculture at a later date, there are no firm targets or schedules for agricultural liberalization.

In 2001, the EU launched the Everything But Arms Initiative (EBA), under which the LDCs have duty-free access to EU markets for almost all goods. Within the WANA region, Djibouti, Somalia, the Sudan and Yemen can take advantage of the initiative's provisions. Bananas, rice and sugar were temporarily exempted; for these, duty-free access has been delayed until January 2006, July 2009 and September 2009, respectively.

Under the US-Middle East Free Trade Initiative, the United States (US) has signed bilateral Free Trade Agreements (FTA) with Jordan and Morocco and intermediate agreements with four other WANA countries. The effect of the US-Jordan FTA will be small because Jordan's level of protection is already low and because US-Jordan trade is small. The effect of the US-Morocco FTA will be larger because Moroccan trade barriers are higher. Of particular importance, Morocco's wheat tariffs will be phased out over ten years.

The African Growth and Opportunity Act allows duty-free access to US markets for sub-Saharan African countries that meet certain criteria in human rights, reducing corruption and fighting terrorism. Djibouti qualifies, but its exports to the US are negligible. The other sub-Saharan African countries in the WANA13 (Somalia, the Sudan and Yemen) do not qualify.

A number of bilateral and regional agreements within the WANA region have been signed, but their effectiveness has been limited by the structural similarities of the

WANA economies and the exceptions for sensitive products. Nonetheless, a number of WANA countries, most notably Egypt and Tunisia, have reduced tariff barriers unilaterally in recent years. In other words, trade liberalization does occur outside the context of global, regional and bilateral trade agreements (Minot et al. 2007).

Impact of trade liberalization

The evidence suggests that global trade liberalization, by reducing agricultural support policies in the countries of the Organization for Economic Co-operation and Development (OECD) and by reducing protection, will increase world agricultural prices. Wheat production is subsidized by the EU and the US, and numerous countries (including those in the WANA region) impose high tariffs. Studies indicate that trade liberalization would increase world wheat prices by 5-12% (FAPRI 2002; USDA 2001). Rice is also subsidized by the EU and the US, while Japan, the Republic of Korea and a few other countries severely limit imports. Global models suggest that trade liberalization would raise the world price by 3-35% (Bouët 2006a; Tokarick 2005; Wailes 2004). Sugar producers are subsidized and protected from imports in many countries, making it one of the most distorted agricultural markets. Partial equilibrium models of trade liberalization suggest that sugar prices would rise by as much as 48%, while general equilibrium models show increases by only 2% (El-Obeid and Beghin 2005; Bouët 2006a). Likewise, removing distortions in world cotton markets would increase the world price by 2-13% (CIE 2001; Sumner 2003). Dairy production in the EU, Japan, the US and many developing countries is protected through a complex system of support prices, import

barriers and market controls. One study has estimated that global trade liberalization would increase the price of non-fat dry milk by 13% (Langley, Somwaru, and Normile 2006)

Almost all the WANA13 countries are net agricultural importers, so there is clearly some basis for concern that these countries will lose as a result of global trade liberalization. We estimate the welfare cost of a 15% increase in agricultural prices on each WANA country for which data are available. This is done by multiplying the value of net agricultural imports of each WANA country by 0.15 and expressing the result both in monetary value and as a percentage of GDP. This calculation yields the additional cost to the country to maintain its current pattern of production and consumption. Our analysis confirms that the terms-of-trade effect of a 15% increase in all world agricultural prices on the WANA13 countries would be approximately US\$1.2 billion, or 0.2% of regional GDP. The actual impact of trade liberalization, however, is likely to be more positive for two reasons. First, this analysis does not take into account the response by producers and consumers, which will partially offset the negative impact. Second, the analysis estimates the terms-of-trade effect of trade liberalization, but it does not include the efficiency gains associated with reducing distortions in domestic agricultural markets. Most studies of trade liberalization suggest that the efficiency effects are larger than the terms-of-trade effects (Bouët, Mevel, and Orden 2006; Tokarick 2005).

Several dozen studies have been undertaken to examine the macroeconomic impact of various types of trade liberalization in the WANA region. Most of these studies use CGE models to simulate the effect of alternative trade policies. The results of these studies may be summarized as follows:

- Multilateral trade liberalization generally results in net gains to countries in the region, with real GDP expansion of 1 to 3% (Bouët 2006a).
- The benefits of trade liberalization to a country depend largely on the degree of domestic liberalization carried out by the country. Most of the gains from agricultural trade liberalization are associated with domestic reform rather than changes in trade policy in other countries. This confirms the well-known concept in studies of trade liberalization: what you do determines what you get (Tokarick 2005; Anderson 2003).
- The benefits of multilateral trade liberalization are generally greater than the benefits of bilateral trade liberalization with the EU or the US (Augier and Gasiorek 2001).
- The benefits of multilateral trade liberalization are generally greater than the benefits of regional trade agreements within WANA (Bouët 2006b).
- Trade liberalization usually results in lower production and more imports of wheat, but higher production and more exports of fruits and vegetables (Chaherli 2002).

In contrast, only a few studies have examined the distributional impact of trade liberalization, such as the effect on farmers or other poor groups in the WANA13 countries. One of the most thorough studies, by Ravallion and Lokshin (2004), suggests that the lower agricultural prices associated with removing agricultural protection in Morocco has had a negative effect on poverty.

Distributional Impact of Agricultural Trade Liberalization

In this section we examine the impact of liberalization on small farmers and other poor households in three of the WANA13 countries: Egypt, Tunisia, and Syria.

Egypt

In the 1970s and 1980s, agricultural policy in Egypt intervened heavily in production, marketing and trade. A policy of import-substitution industrialization meant that the agricultural sector was heavily taxed through low official prices and compulsory sales. At the same time, some commodities were protected by import restrictions. In the late 1980s and the 1990s, Egypt gradually liberalized agricultural markets and reduced the level of import protection. Wheat markets remained distorted by a combination of import controls, fixed producer prices, consumer subsidies on certain types of bread and government control over the channels leading to subsidized bread. In 2004, a series of significant tariff reductions was implemented, leading the World Bank to declare that Egypt had made more progress in trade liberalization than almost any other country. Even so, the degree of protection is higher than in 40% of the countries of the world (World Bank 2005).

Full global trade liberalization would increase the prices of agricultural commodities by 5-15%. This would probably negatively affect the Egyptian economy because it is a net agricultural importer, though the exact effect depends on the price changes for each commodity. Egypt would gain from higher rice and cotton prices, but

lose from higher wheat and maize prices. Domestic trade reform would reduce the domestic prices of imported commodities such as wheat, thus offsetting the effect of global trade liberalization, as well as providing efficiency gains.

We simulate the effects of changes in the prices of five agricultural commodities, wheat, rice, cotton, fruits and vegetables, and sugar cane on incomes and poverty rates among Egyptian households based on the 1997-98 Egypt Integrated Household Survey. Such price changes might arise from changes in world market prices or from changes in border or subsidy policies within Egypt.

First, we compute the consumption expenditure of each household and the percentage of these households in poverty. Next, we simulate the effect on their incomes resulting from an increase in producer prices and consumer prices, taking the household's production and consumption of each crop into account. Adding the change in income to initial consumption expenditures (under the assumption that all the change is spent on consumption), we compute a new per capita consumption expenditure level for each household and recompute the average income and poverty measures for different types of households. Three Foster-Greer-Thorbecke poverty measures are calculated: P_0 (the headcount poverty index), P_1 (the poverty gap index), and P_2 (the poverty severity index) (Foster, Greer, and Thorbecke, 1984)

The short-run simulation holds production and consumption quantities fixed at their initial levels, while the long-run simulation allows producers and consumers to respond to price changes based on plausible price elasticities (the simulation method is described in more detail in Minot et al, 2007).

Overall, our results show that a 40% price increase can have a significant effect on poverty among the producers of specific crops:

- Poverty effects are negligible among wheat farmers in the short run because wheat does not represent a major source of income for many of them and because some of them purchase wheat products. In the long run, wheat farmers expand output and substitute away from wheat consumption; so, their gains are greater. The poverty rate decreases from 30% to 27% in the long run. Increases in wheat prices have small and non-linear effects on the depth and severity of poverty among wheat farmers.
- The poverty rate among rice-producing households is reduced from 34% to 28% in the short run and to 27% in the long run. Higher rice prices also reduce the depth and severity of poverty among rice growers.
- The poverty rates among cotton-grower is reduced from 32 to 26% in the short run and 25% in the long run. This represents about a 16% reduction in the poverty level among cotton farmers. There are even larger relative falls in the depth and severity of poverty among cotton growers.
- Among fruit and vegetable producers the poverty rate is reduced from 29% to 24% in both the short- and the long-run scenarios. This price increase reduces the depth and intensity of poverty by 20-30% of the original values.
- The poverty among sugar cane growers dropped from 63% to 43%. Overall, the long-run simulation results indicate a slightly greater poverty reduction than the results of the short-run simulation. The depth and severity of poverty among sugar cane producing households also decline with higher prices. The reason for the strong

relationship between sugar cane prices and the poverty rate among sugar cane growers is that these households derive a large share of their incomes from this crop.

However, individual price changes do not have a large impact on overall rates of poverty. We simulate the impact of raising the prices of an individual crop on the rural, urban and overall population, including growers and non-growers. In the interest of brevity and because the overall effects are small, we limit the simulations to 40% increases in each crop price. The results of these simulations are shown in table 3.

- Wheat price increases have a very small negative effect, on average, in the short run and a very slight positive effect in the long run, as supply and demand respond to the higher prices. Similar patterns hold in both rural and urban areas.
- The effects of rice price increases on the whole population are quite small. Even a 40% increase in rice prices raises the poverty rate at the national level by only 1 percentage point.
- The effect from an increase in cotton prices on poverty level reductions at the regional level is negligible. This is explained by the fact that cotton growers represent only 4.2% of all households nationally.
- A 40% price increase in fruit and vegetable prices causes poverty to rise, but by only a small amount. In both urban and rural areas, as well as at the national level, the poverty rate increases about 1 percentage point. This suggests that horticultural consumers are poorer or more numerous than horticultural growers.
- And a 40% increase in sugar cane prices has a small positive effect on rural poverty (reducing it by 1 percentage point), but no measurable effect on urban poverty.

Because sugar producing households are such a small part of the national population, the effect of higher sugar prices on overall poverty is quite small.

One implication of this analysis is that agricultural trade policy is a relatively ineffective policy instrument for assisting poor rural households. Although agricultural protection does affect the poverty among growers of the particular crop at issue, the effect on overall poverty (or even rural poverty) is negligible. This suggests that anti-poverty programs would do better by assisting the poor directly than by influencing the market for goods that (some) poor people produce.

Another interesting result is that wheat is the most politically sensitive agricultural commodity; yet, the effect of wheat protection on poverty is negligible even among wheat farmers themselves. This is because wheat farmers are not particularly poor (they are somewhat better off than the average rural household), because their incomes are fairly diversified (wheat accounts for only 8.5% of their incomes) and because many other households in urban and rural areas are net buyers (even in rural areas, 80% of the households are net buyers). While policy decisions take into account a wide range of factors not considered here, this analysis should at least weaken the poverty argument for a wheat protection policy.

Finally, the analysis suggests that some of the poorest households in Egypt are those that are involved in farming, but that do not own land. These households include agricultural laborers and tenants who farmland owned by others. Agricultural trade policy can only indirectly influence the well-being of these households (through the labor market). More effective in addressing the needs of these farmers would be policies to

make the labor market for informal work more efficient and policies to facilitate the purchase of farmland by landless farmers.

Tunisia

Tunisia has carried out a number of reforms as a result of its structural adjustment program, but the level of agricultural protection remains one of the highest in the world. At the same time, Tunisia has a relatively good investment climate, which contributed to significant inflows of foreign direct investment and a healthy growth rate through the 1990s.

Like many WANA13 countries, Tunisia is a net agricultural importer. Its main exports are olives and dates, and the principle imports are wheat and maize. Multilateral liberalization is expected to raise agricultural prices. If all agricultural commodity prices rise proportionately, Tunisia will face declining terms of trade because it is a net agricultural importer. On the other hand, it would benefit from domestic liberalization due to efficiency gains. The combined effect is likely to be positive for Tunisia as a whole because most estimates show that efficiency gains are larger than terms-of-trade effects.

However, the combination of full global and domestic liberalization would probably reduce agricultural prices because the effect of the loss in high levels of protection (89% on average) would be greater than the modest increase in world prices (5-20%) due to global liberalization.

This analysis uses a computable general equilibrium (CGE) model to simulate the effect of four types of trade liberalization on the Tunisian economy and households. The CGE model is built on a Social Accounting Matrix (SAM) calibrated to describe the Tunisian economy in 1996. It is a standard neoclassical CGE model, with imperfect substitution in consumption between imported and domestic goods and imperfect substitution in production between exports and production for the domestic market. Production combines raw materials and factors of production in fixed proportions, while the use of different factors varies according to relative factor prices. There are five categories of labor: farmers; unskilled agricultural wage-earners; skilled agricultural wage-earners; unskilled non-agricultural workers; and skilled non-agricultural workers.

Other factors are land, physical capital and natural resources. The model covers eleven agricultural and processed food commodities and three non-agricultural products. It uses an infinite elasticity of substitution of capital between sectors, which means there is perfect mobility of physical capital among the different sectors.

In order to estimate the distributional impact of trade policy, the model is linked to data from 400 households from the 1995 Tunisian household expenditure survey. While this tool does not allow for dynamic effects that may take place during the liberalization process, such as the effect on investment or on the rate of adoption of new technology, it nevertheless measures the total gain related to the reallocation of production factors as a result of tariff reductions or other policies. The static analysis also determines the loss in customs income linked to the trade liberalization. This analysis depends equally on the income available to households after the reform. If one thinks that consumers and businesses cannot substitute one product for another, this loss will be

equal to the share of tariff income coming from importing European products in the sum of all tariff income (Dessus and Suwa-Eisenmann 2000). The household survey data and the SAM and the CGE model are described in more detail in Minot et al. (2007).

To the extent that trade liberalization encourages investment or accelerates the adoption of technology, as some studies suggest, the static model will understate the welfare benefits of liberalization.

Simulation results suggest that the removal of industrial tariffs on imports from the EU (which approximates the effect of the EMP agreement) would cause both imports and exports to expand significantly, although almost all the change would be in non-agricultural trade. Real GDP would increase slightly (0.2%) because of the efficiency gains associated with the removal of distortions. Poverty would decline from 6.8% to 6.7%; the largest improvements would occur among farmers and agricultural wage-earners (table 4).

The removal of all tariffs on imports from the EU (approximating an extended EMP agreement) would cause large increases in imports of meat (164%), beverages and tobacco (104%), fruit (63%), dairy products (60%) and vegetable oil (21%) as import barriers on these goods are lifted. The effect on GDP (0.3% change from the base scenario) and poverty is similar to that in the first simulation (table 4).

The elimination of tariffs on imports from all countries would increase the imports of almost all agricultural commodities (9.3% on average), as well as stimulating agricultural exports (17.8% on average) to maintain the trade balance. The reduction in poverty would be greater in this case than in the case of the first two simulations: poverty

would decline from 6.8% in the base scenario to 6.5%. Farmers and agricultural laborers would again account for most of the poverty reduction (table 4).

Finally, the elimination of all Tunisian tariffs, plus global trade liberalization (represented by a 15% increase in world agricultural prices), would not do much for the overall economy. This is partly because, as a net agricultural importer, Tunisia would lose out from higher world agricultural prices. Nonetheless, the agricultural sector would gain from the higher prices. The three main agricultural exports, olive oil, other processed foods and fruit would expand significantly in this scenario, 19%, 12%, and 31%, respectively. As a result, poverty would decline to the lowest level among the four scenarios: 6.0% among the overall population and 9.0% among farmers (table 4).

Overall, it appears that trade liberalization is able to reduce poverty in spite of the very modest effect on the level of GDP, but it has a substantial effect in reducing poverty. Furthermore, the combined effect of global and domestic liberalization is more pro-poor than the effect of domestic liberalization alone.

We draw two general implications from the Tunisia case study. First, the impact on rural poverty of trade liberalization may be quite different from the impact one might assume based on simple indicators. As a net importer of agricultural commodities, Tunisia may be expected to experience terms-of-trade losses from higher world agricultural prices. Furthermore, because Tunisia has significant agricultural import protection, we would expect the agricultural sector to lose from trade liberalization that would remove this protection. Yet, the simulations suggest that trade liberalization reduces poverty among farmers and wage-earners in the agricultural sector.

Second, the positive outcome of these simulations is partly based on the ability of farmers to replace activities that were once protected, such as wheat and livestock production, by activities involving export commodities such as olives, dates and citrus. The need to facilitate the replacement of one set of activities by another highlights the importance of farmer training, marketing information systems and extension services, as well as farm-level investments and the public infrastructure necessary to expand the newly competitive crops.

Syria

The Syrian agricultural sector is characterized by a high degree of government intervention, including fixed prices, state marketing boards, state monopolies in the marketing of strategic crops, state monopolies in the distribution of fertilizer and high barriers to the importation of agricultural commodities and food products. Reforms to liberalize the agricultural sector have been introduced in recent years, but the sector remains one of the most highly regulated agricultural sectors in the WANA region (Westlake 2003, UNDP 2005).

On the one hand, agricultural policy towards the main strategic crops has been successful in achieving national self-sufficiency in wheat and rapid growth in the production of the country's main agricultural export commodity, cotton. It has also prevented the development of large disparities in the incomes of rural and urban households. On the other hand, the policy has achieved these objectives at a high cost in terms of government budgetary resources and the efficiency of resource allocation within

the agricultural sector. Subsidies in agriculture and energy have also contributed to an unsustainable budget deficit. With the depletion of oil reserves over the coming 10-15 years, the Government will need to find alternative sources of economic growth and fiscal revenue. The latest five-year plan envisages the phasing out of subsidies and the implementation of a value added tax.

Broad domestic liberalization of the agricultural sector would result in substitution away from wheat, sugar beets and cotton and towards barley, lentils and chickpeas. Completion of the EMP agreement with the EU would expand exports of fruits, vegetables and olive oil if Syrian producers can meet exacting quality and food safety requirements.

About two thirds of the agricultural subsidies are devoted to maintaining a high producer price for wheat and low consumer prices for bread and other wheat products. By banning private importation of wheat and by not importing through the state marketing board, government policy keeps the domestic price of wheat 66% higher than the import parity price. Wheat is the most important staple food, as well as an important source of income for farmers; so, the Government is particularly sensitive to the impact of reducing or removing import protection and subsidies for wheat.

In this section, we examine the economic and distributional effects of the removal of wheat subsidies. For this purpose, we have developed a static CGE model linked to data from the Syrian household expenditure survey (Minot et al. 2007). The model is used to assess the direct and indirect implications of reducing the producer price of wheat to international levels and of increasing the consumer prices of wheat products through a reduction in subsidies. Three scenarios reduce progressively the subsidies on production

and consumption of wheat by 20%, 50%, and 100%. The assessment focuses on the overall economic structure and on household consumption and welfare.

The macroeconomic effects are relatively modest, although government savings increases by almost 3% of GDP. Complete liberalization reduces the producer price of wheat by about 17% and production by about 2%. The effects of removing the wheat subsidies on the welfare of Syrian households are regressive in the sense that high-income households gain, while lower-income households lose. The size of the effects, however, is quite small: less than 1% of the base incomes for all, but the richest income group (table 5).

It is important that one keep in mind three factors in interpreting these results. First, the impact on farmers (particularly wheat farmers) will be larger than the impact on the poorer deciles because each decile includes both farmers and non-farmers, thus diluting the adverse impact of the reforms on wheat farmers. If one third of the poorest decile are farmers and assuming there is no impact on non-farmers, then the impact on poor wheat farmers would be a decline of 1.3% ($0.42/0.33$) in welfare.

Second, the distributional impact will vary among farmers. Farmers growing and selling large quantities of wheat will lose the most in absolute terms from the elimination of protection and subsidies. Smaller farmers will lose less. The impact of the reforms in terms of percentage changes in real incomes depends on net sales of wheat as a percentage of household incomes. If net sales are a large share of incomes, the negative effect will be large. More information on the share in incomes from wheat and other crops would be needed to explore the distributional impact among farmers.

Third, the impact of liberalization on small farmers and the poor depends partly on complementary policies. For example, if the wheat market reform were implemented, along with a reduction in energy subsidies, the combined effect would be more pro-poor. The recent study carried out by the World Bank shows that, in the case of subsidies on energy products, 80% of the people will be better off; the maximum gain would accrue to the poorest decile, which would obtain a net gain equivalent to 35% of the overall decile consumption (Chemingui and Fetini 2006). Only the two richest deciles would experience a net loss (equivalent to 2.5% and 5.5% of decile consumption, respectively).

Alternatively, the wheat subsidy reduction could be implemented in conjunction with a safety net program that uses a portion of the fiscal savings for targeted programs for the poor.

One aspect of agricultural policy that is more important in Syria (and Egypt) than in the other countries under consideration is that the support for wheat farmers is provided in large part through direct subsidies from the Government rather than through the taxation of consumers through import tariffs. This increases the feasibility of a political solution whereby a portion of the savings from reducing these subsidies could be used to compensate those who lose from the reforms. One possibility would be to use some of the fiscal savings to implement a direct income-support program that would compensate wheat farmers for losses associated with the reforms. The compensation should be a fixed amount based on historical production or area and could be phased out over a number of years, giving wheat farmers the time and resources to develop alternative income sources (Olhan 2006).

Conclusion

What are the implications for trade policy in the region? The net food importing countries have used the expected terms-of-trade loss associated with global trade liberalization to request special concessions in the form of reduced commitment to open their own borders. The flaw in the mercantilist logic is that it only takes into account the gains and losses of producers, ignoring the effects of trade policy on consumers. Studies of trade liberalization suggest that most of the benefits to a given country from trade liberalization are the result of reforms within the country. Thus, the net food importing countries appear to be demanding the right to forgo the efficiency gains associated with domestic trade liberalization as “compensation” for the terms-of-trade losses associated with reforms in other countries.

Why is the effect of agricultural trade liberalization on poverty in these three cases so small? First, the effect of agricultural trade liberalization on overall poverty is relatively small because farmers represent a relatively small proportion of most WANA countries. Second, farmers derive a significant share of their income from non-farm sources. Third, the effect of liberalization on agricultural prices is ambiguous. Global agricultural trade reform is likely to increase world agricultural prices, but domestic trade liberalization will reduce domestic agricultural prices relative to the world price. The net effect of liberalization on domestic agricultural prices depends partly on the original level of protection. If the level of domestic protection is high (low), then full trade liberalization is likely to reduce (increase) domestic agricultural prices.

Finally, the impact of changes in agricultural prices on poverty among farmers is also ambiguous. Higher agricultural prices benefit farmers who can produce a marketed surplus, but they hurt farmers who are net buyers of agricultural products. The analysis presented in this report suggests that higher agricultural prices benefit the poor on net, but the effect is quite small. Thus, the link between trade liberalization and agricultural price changes is ambiguous, and the effect of agricultural price changes on poverty is weak. This suggests that trade policy is a poor instrument for addressing overall poverty in the region.

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Table 1. The Agricultural Sector in WANA13 Countries, 2003

WANA countries	Share of agriculture in GDP	Share of employment in agriculture (percent)	Share of agricultural exports in total exports
Algeria	10	24	0.2
Djibouti	4	78	0.8
Egypt	16	32	5.2
Jordan	2	11	10.0
Lebanon	12	3	9.4
Morocco	17	35	7.0
Somalia	65	70	...
Sudan	39	59	13.4
Syria	23	27	6.9
Tunisia	12	24	4.4
Turkey	13	45	7.3
West Bank and Gaza	9	12	18.6
Yemen	15	48	3.3
WANA countries	18	36	7.2

Sources: World Bank (2005a)

Table2. Applied Protection in Selected WANA13 countries

Countries	Overall	Agriculture	Industry
	(percent)		
Algeria	14	20	13
Egypt	29	16	30
Jordan	11	18	10
Lebanon	4	9	3
Morocco	21	43	19
Sudan	19	26	18
Syria	16	16	16
Tunisia	20	56	17
Turkey	6	41	3
Yemen	12	11	12
WANA13 average	13	32	12
Developed countries avg.	4	21	3
Developing countries avg.	10	22	8
LDC average	12	17	11

Source: Authors' calculations based on MAcMap-HS6 dataset (CEPII 2005).

Table 3. Effects from increased commodity prices on poverty among all households in Egypt

Scenario	Poverty items	Effects on regional households					
		Urban		Rural		National	
		Short run	Long run	Short run	Long run	Short run	Long run
Base	Expenditures (LE/household/year)	9,401	9,401	8,236	8,236	8,863	8,863
	Poverty incidence (%)	36	36	41	41	38	38
40% increase in wheat price	Average income increase (LE/household/year)	-64	69	-135	24	-97	48
	Poverty incidence (%)	37	35	43	40	39	37
40% increase in rice price	Average income increase (LE/household/year)	-45	-42	53	64	0	7
	Poverty incidence (%)	37	37	41	41	39	39
40% increase in cotton price	Average income increase (LE/household/year)	15	16	95	101	52	54
	Poverty incidence (%)	36	36	40	40	38	38
40% increase in fruit & vegetable price	Average income increase (LE/household/year)	-140	-134	-84	-76	-114	-107
	Poverty incidence (%)	37	37	42	42	39	39
40% increase in sugar cane price	Average income increase (LE/household/year)	-3	-3	46	50	20	21
	Poverty incidence (%)	36	36	40	40	38	38

Source: Authors' calculations from the 1997-98 Egypt Integrated Household Survey

Table 4. Impact of Trade Liberalization on the Incidence of Poverty by Occupation in Tunisia

Type of household	Poverty in base year	Simulation			
		1	2	3	4
		(incidence of poverty, %)			
Managers, professionals and the self-employed	3.9	4.0	4.0	4.0	4.1
Wage-earners in non-agricultural sectors	9.7	9.6	9.6	9.5	9.2
Retirees, the unemployed and “others”	3.9	4.2	4.3	4.3	4.9
Farmers	9.5	9.3	9.3	9.2	9.0
Wage-earners in the agricultural sector	7.4	7.2	7.1	7.0	6.3
Average	6.8	6.7	6.7	6.5	6.0

Source: Institut National de la Statistique and author calculations.

Note: Simulation 1 is the removal of tariffs on industrial goods from the EU. Simulation 2 is the removal of tariffs on all goods from the EU. Simulation 3 is the removal of tariffs on all goods from all countries. Simulation 4 is the removal of tariffs on all goods from all countries, plus multilateral trade liberalization.

Table 5. Welfare effects of Wheat Subsidy Removal by Income Decile in Syria

Decile	Change in household welfare (equivalent variation as a % of income)		
	20% reduction in wheat subsidies	50% reduction in wheat subsidies	Elimination of wheat subsidies
Poorest	-0.06	-0.19	-0.42
2	-0.06	-0.22	-0.47
3	-0.02	-0.10	-0.26
4	-0.01	-0.08	-0.21
5	-0.02	-0.03	-0.12
6	0.04	0.03	-0.01
7	0.05	0.08	0.08
8	0.09	0.11	0.13
9	0.53	0.23	0.34
Richest	0.19	1.35	2.20

Source: Simulations results

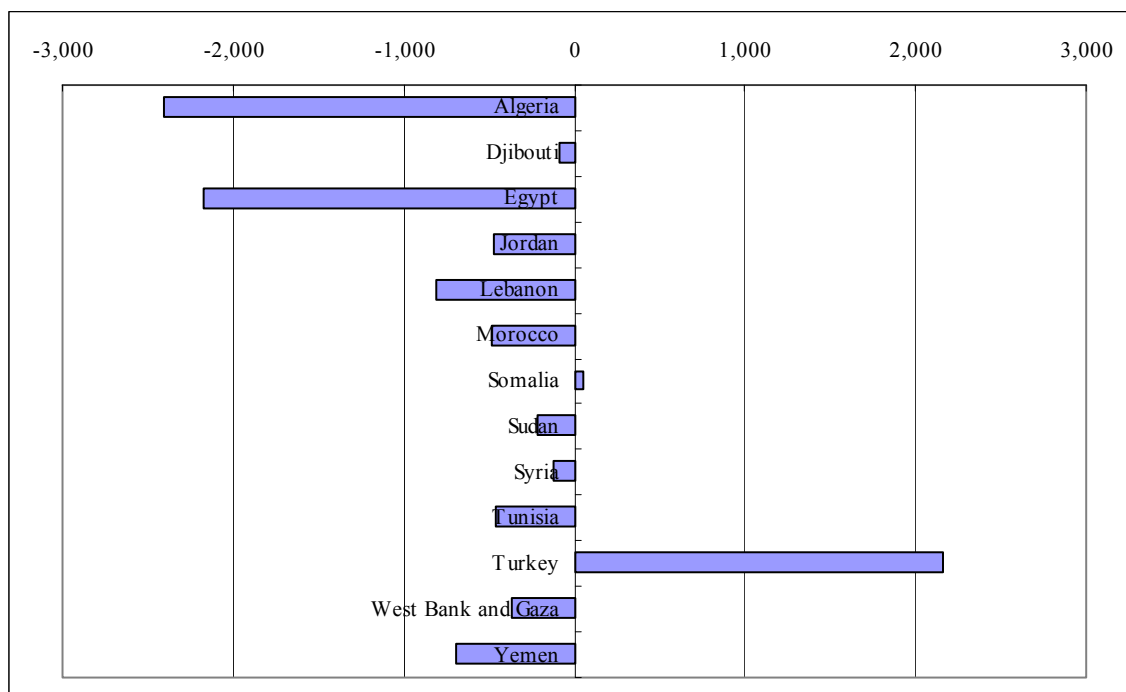


Figure 1. Net Food Imports in WANA13 Countries, 2001-03 average (million US\$)

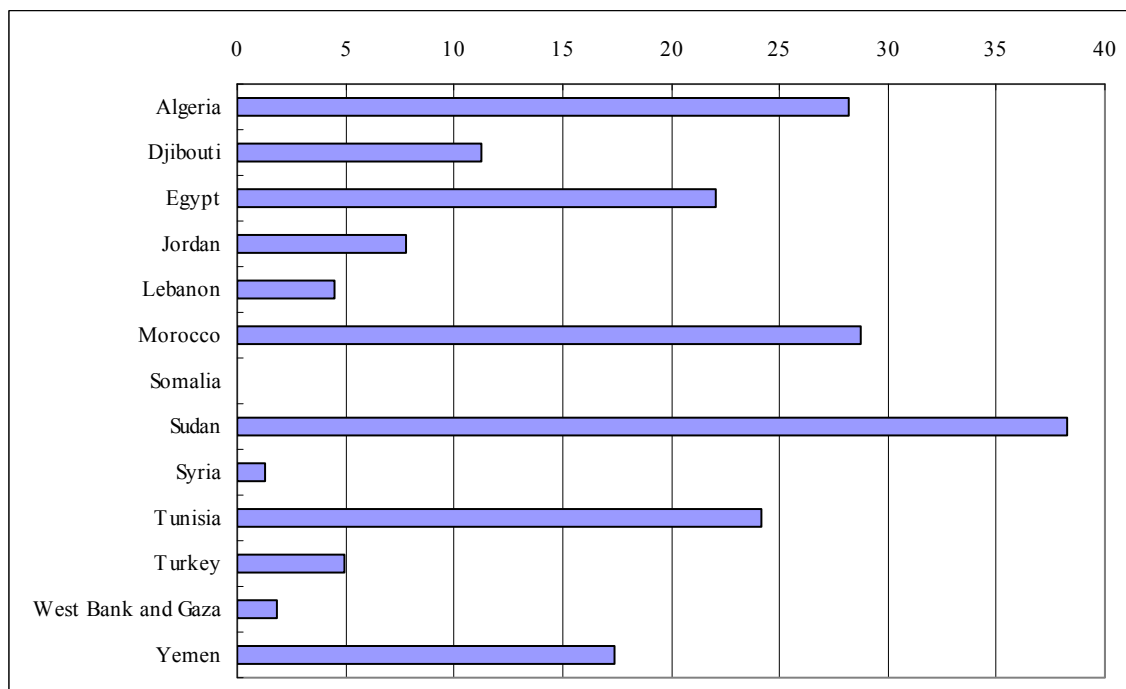


Figure 2. Share of Wheat Imports in Agricultural Imports by Country, 2001-03 average (%)