

**Aus dem Institut für Marktanalyse und Agrarhandelspolitik**

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**WTO agricultural negotiations - a key area for the  
success of the Doha round : options for export  
subsidies, domestic support and market access**

Summary

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**WTO-Agricultural Negotiations -  
A key area for the success of the Doha round**

**Options for export subsidies, domestic support and market access**

## **Summary**

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## 1 Political and methodological background of the report

- The Doha round of the WTO negotiations is a very urgent topic at this time. As in the Uruguay Round, agriculture plays a key role in the negotiations. The departure point for the agricultural negotiations is the so-called HARBINSON paper, which was established by the Agricultural Committee of the WTO on the basis of national and regional proposals. While the USA and the CAIRNS group believe that reductions of import duties in the HARBINSON paper are not high enough, the EU judges the liberalisation to be too extreme altogether
- The HARBINSON paper concentrates on market access, export competition and domestic support as the core of the WTO-negotiations. For a further opening of agricultural markets, the HARBINSON paper demands an average reduction in the bound rates which, depending on the starting level lies between -40% and -60% for developed countries and between -25% to -40% for developing countries. Tariff rate quotas (TRQs) should be extended to 10% of domestic consumption. Furthermore, the HARBINSON paper calls for complete elimination of the use of export subsidies over nine years. At the same time, a reduction in overall domestic support (Aggregated Measurement of Support, AMS) of -60% and -40% in developed and developing countries, respectively, is suggested, while the measures of the blue box (direct payments in limited production programs) should be reduced by -50%.
- The linkages of the agricultural and food sectors with the other sectors of the economy, as well as a tying-in of factor markets and federal budgets is a significant aspect of the global WTO reform of agricultural trade which will have ramifications far into the future. For this reason, the analysis uses an extended version of the general equilibrium model GTAP (Global Trade Analysis Project) which documents both world economic activity and that of individual countries and regions. Intra- and inter-regional relationships between markets and actors are both considered in the GTAP as well as the repercussion effects.
- In the standard GTAP model, the instruments of the Common Agricultural Policy (CAP) are illustrated with the help of Producer Support Estimates (PSE; OECD). For a detailed analysis of the WTO negotiations, it is however, necessary to represent the CAP instruments directly within the structure of the GTAP Model. For this study an extended version of the GTAP model is used, in which the following CAP instruments are modelled explicitly for the enlarged EU:
  - direct payments (area and head premiums)
  - milk and sugar quotas
  - set aside
  - border protection

In addition to the CAP instruments, the common financing system of an enlarged EU (in the following EU-27) including the net transfer flows between member countries is captured within the model structure of the extended GTAP model.

- TRQs are not considered in this study. Due to separate considerations of Germany and other EU member states in the analysis, it would have been necessary to provide TRQs for single EU member countries or regions. In light of several data problems in the area of TRQs, a satisfactory solution to this problem is not possible within the time frame of the project. A representation of TRQs as weighted average of the import duty within and without the TRQs with a simultaneous consideration of EU countries is shown to be more advantageous. It is also questionable whether an aggregation of TRQs at the EU level would not be tied to significant error.<sup>1</sup>
- With the help of the model expansions, the possibility exists to consider changes in the political framework within the time frame of the analysis of the WTO Negotiations. Changes in the economic framework (changes in skilled and unskilled labour, capital, population, GDP) are also documented within the framework of a projection module based on data from the World Bank.

## 2 Database and Simulations

- In our analysis we use the GTAP database (version 5.3) which has 1997 as base year. It contains information about five production factors, 57 sectors, and 76 countries or regions. In order to keep the task within a manageable time frame, the GTAP data base was aggregated to five factors, 19 sectors and 23 countries or regions. Hereby, the most important agriculture and food sectors were taken into account, as well as those countries and groups of countries of importance within the framework of the WTO negotiations (see tables 3.1 and 3.2, main report).
- Although the GTAP Database is currently the most comprehensive of its type, some problems turn up in the aggregations. In the consolidation of the country group EBA (Everything But Arms) it is not possible, for example, to cover all EBA countries due to the database<sup>2</sup> The same holds true for the country group ACP (Africa, Caribbean, Pacific). Thus, some of the preferential agreements of the EU can not be taken into account for all participating countries.
- The implementation of the results of the Doha Round will assumably be concluded in 2014. For this reason, several simulations are required to do this analysis. In the base run, the economic environment (labor, capital, population, GDP) is adapted to the level of the year 2014 for all countries or regions with the help of simulations. Also, an adaptation of the political environment in the EU-15 and in the new member states is conducted. The Agenda 2000, the EU Eastern enlargement, the EBA agreement and the decoupling of direct payments within the Mid-Term Review are considered here.

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1 See FRANCOIS, J. (2000), Modeling the Impact of WTO Negotiations on EU Agriculture: An Application of the GTAP Model. Paper prepared as part of the concerted action: Assessment of the GTAP Modeling Framework for Policy Analysis from a European Perspective. Presented at the Rotterdam Workshop 21.9.2000.

2 Several EBA countries are only available as part of a region in the GTAP data base.

- In addition to the adaptations of economic and political environment in the base run, the Doha round of the WTO negotiations is simulated in three different scenarios. In scenario H1, the HARBINSON paper is implemented. Accordingly, depending on the starting level, the import tariffs are reduced by -40% to -60% in developed countries and by -25% to -40% in the developing countries. A complete elimination of export subsidies is also established. For domestic support, a reduction of -60% and -40% of AMS is introduced for the developed and the developing countries, respectively. Scenarios H2 and H3 implement the HARBINSON paper with variations in individual areas according to the EU proposal for the WTO negotiations. In H2 the import duties are reduced by -36% and -24% for the developed and developing countries, respectively, while the export subsidies are only reduced by -36% in H3.
- Only selected simulation results of the Doha round of the WTO negotiations are presented and interpreted in this report. These results are calculated as the difference between the base run and the individual scenarios H1, H2 and H3 in the year 2014. It must be noted that the simulations present only a global liberalisation of the agriculture and food sectors, while protection in the service and industrial sectors is unchanged and not considered here.

### **3 Results of the implementation of the HARBINSON paper (Scenario H1)**

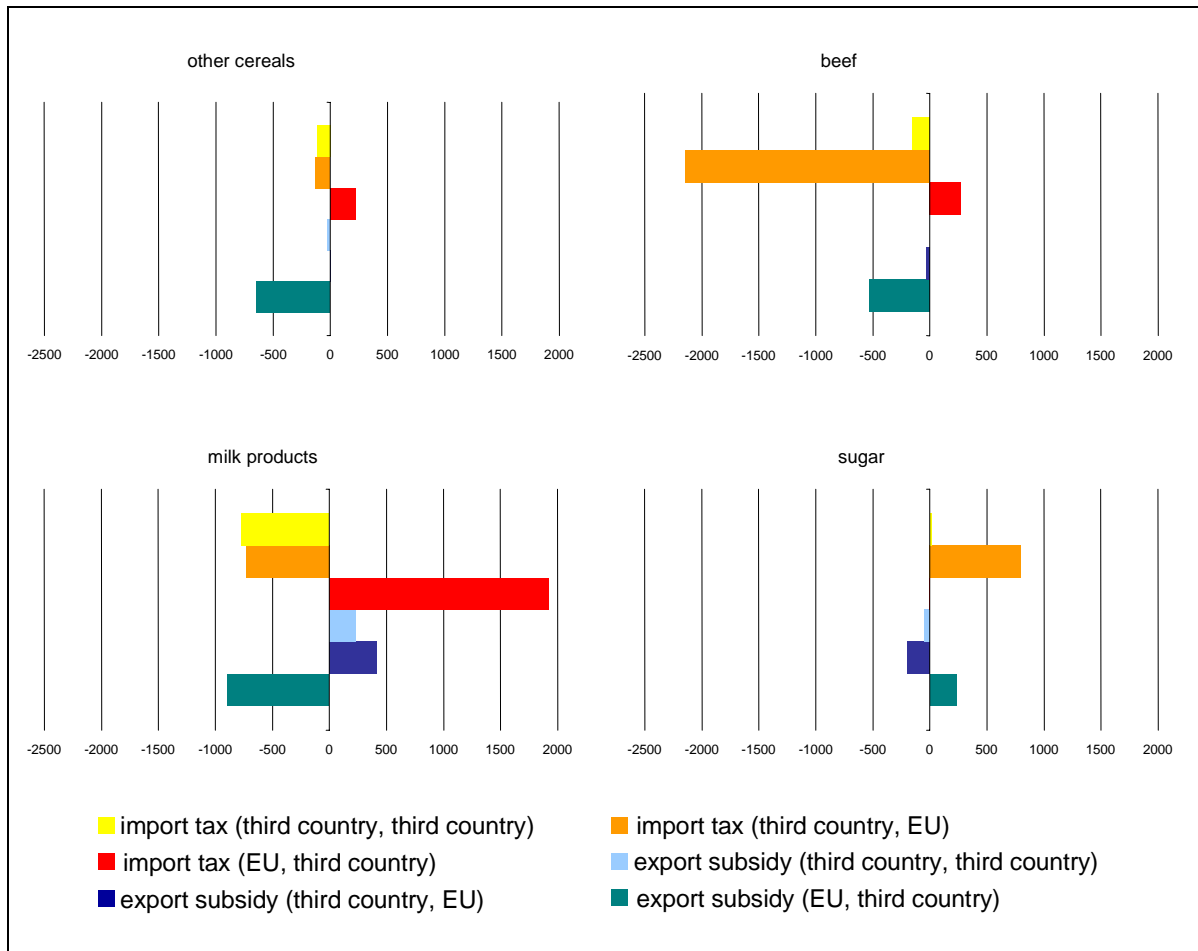
#### ***Trade***

- The complete implementation of the proposal of the HARBINSON paper (Scenario H1) leads to a worldwide increase in global exports of between 0.1% and 5.6%. In Brazil (5.6%), other European Countries (1.8%) and other countries in the Mediterranean and Middle East (1.6%), as well as other ACP countries (1.5%) larger percentage increases in exports are shown. The extra-trade of the EU-27 grows by 0.9%.
- As the largest economy, the EU-27 shows the highest absolute growth with about € 7.6 billion, which results as a consequence of the liberalisation of world trade according to the HARBINSON paper. Both the USA and Japan also show a high absolute growth of global exports with € 5.6 billion and € 5.3 billion, respectively. For other regions, the growth in exports is much less.
- The liberalisation of global trade apparently triggers very different reactions in individual countries and regions. The main cause here is the sectoral protection structure before and after the implementation of the results of the WTO negotiations. While the highly protected agricultural and food sectors in industrial countries are supported with import tariffs, TRQs, export subsidies and direct payments, import tariffs dominate in developing countries.
- The protection of highly protected agricultural products is reduced most according to the HARBINSON paper. Sugar and milk are the most highly protected products worldwide. Additionally, cereals, cattle and beef are strongly supported in the EU-27 and

most other industrial countries, whereas in developing countries, fruits and vegetables as well as pork and poultry are highly protected.

- Direct payments also affect products not eligible for premiums (i.e., fruits and vegetables, pork and poultry and processed products thereof in the EU) significantly. A reduction of direct payments improves allocation efficiency of factors and limits production of premium support products (i.e, cereals, oilseeds, milk and beef in the EU) while the factors released due to reduced production can be used profitably in the production of non-premium products.
- Without a reduction of decoupled direct payments in the EU, an implementation of the proposals of the HARBINSON paper has a negative effect on the trade balances in the EU-27 for wheat, other cereals, rice, fruit, vegetables and plant products, as well as the processing products oils and fats, which lies between € -113 million to € -802 million. A global liberalisation of agricultural trade leads to a relative increase in imports vs. exports for beef as well as pork and poultry meat production, resulting in a drop of the EU trade balance of € -2.512 billion and € -116 million, respectively. The implementation of the Harbinson-Paper however, has a positive effect on the EU trade balance for oil seeds (€ 181 million), pork and poultry (€ 618 million), milk and dairy products (€ 48 million) and sugar (€ 723 million).
- These effects can be explained with the help of a decomposition. Here, the total quantitative effect of the numerous agricultural policy instruments in simultaneous change due to the implementation of the HARBINSON paper are broken down into the individual effects. It is especially interesting to note that foreign trade protection is reduced within the framework of bilateral trade flows, so that the trade effects can be differentiated by country of origin and destination. Figure 1 shows this decomposition for the changes of the trade balances of the most important EU agricultural products. On the basis of decompositions, the following statements can be made:
  - The elimination of EU export subsidies (see export subsidy (EU, third countries) in Figure 1) has a negative effect on the trade balance for other cereals, wheat, dairy products and beef meat. A complete elimination of the export subsidies has a particularly negative influence on these products. The EU proposal to reduce them by -36 % would mean a smaller reduction (cereals, wheat, beef meat) or rather a higher increase in the trade balance (dairy products).
  - Other cereals, wheat and dairy products especially gain from the elimination of import duties of third countries against the EU (see import tariffs (EU, third country in Figure 1) which has a positive effect on changes in the trade balance. This development is particularly significant in the high world wide protection of dairy products. A less global elimination of import tariffs according to the EU recommendations would accordingly lead to losses.

**Figure 1:** Decomposition of the Changes in the EU Trade Balance (Mio. €)



1) Information contained in parentheses (i.e., EU; third country) gives details about the country of origin (here: EU) and the country of destination (here: third country) of the product.

- The trade balance for beef in contrast is negatively influenced by the elimination of import tariffs of the EU against third countries (see import tariff (third country, EU) in Figure 1), whereas the elimination of export subsidies plays a secondary role. A lower tariffs reduction than in the HARBINSON paper would thus have a greater influence on the total results as in the case of other products.
  - The EU trade balance for sugar reacts positively to the elimination of export subsidies and import tariffs, because the preferential sugar imports from the EBA region and the related re-export of sugar on the world market will be reduced. Apparently, the erosion of preferences and the resulting reduction of sugar imports from EBA countries into the EU is higher than the increase of imports from other countries due to the EU tariff reduction.
- In other parts of the world, those countries that are already more competitive due to lower agricultural protection will especially gain from trade liberalisation. Thus, the trade balances of Oceania develops positively within the framework of the WTO ag-

gricultural reform. This applies in particular for products, where protection is reduced in other industrial countries (cereals, beef meat, dairy products, sugar). Similar statements can be made for Brazil, and to some extent, for the USA.

- The implementation of the HARBINSON paper leads to a negative development of the trade balance for the least developed countries (the EBA group) in almost all cases. This is especially true for sugar with € -1.909 billion. On the basis of the decomposition of results, it can be shown that the cause of this is mainly a partial loss of the preferences of the EBA countries to the EU market. Thus, above all, the duty reduction of the EU for third countries and the breaking down of export subsidies has a negative influence on the EBA trade balance for sugar. In contrast, the other countries of the ACP group show a positive development in the trade balance for at least some agricultural and food products (fruits and vegetables, beef, sugar and other food).

### ***Production quantities and prices***

- The changes in production quantities are also mainly influenced by the structure and the level of global agricultural protection. Similar to the trade effects, a global reform of agricultural trade according to the HARBINSON paper leads to a reduction of agricultural production in the EU-27. This particularly affects the production of plant products with reductions of between -0.9% and -6.7%, but also the production of pork and poultry meat (-0.3%) as well as cattle (-4.3%) and beef (-6.4%). In contrast, the production of pigs and poultry can be increased by 0.3%, while the sugar and dairy quotas in the EU remain binding.
- For products with high EU protection (cereals, milk and dairy products, beef cattle and beef, sugar) a stronger reduction of protection is planned according to the HARBINSON paper. It could generally be expected that for products with low EU protection (fruits, vegetables and other plant products, pork and poultry, pork and poultry meat) a positive development will occur. However, decoupled direct payments in the highly protected sectors of the EU lead to inadequate resources being released through the reduction of foreign protection of highly protected sectors. Accordingly, even the products with a low EU protection level show negative, or rather, only somewhat positive production development.
- The adjustment of production is slightly different in the individual countries and regions of the EU dependent on trade and production structures as well as the level of factors available in the EU-27. This development is particularly significant in the production of cattle and beef, which drops much more significantly in Germany (-4.3% and -9.6%, respectively) and Ireland (-10.7% and -11.8%, respectively) than in the rest of the EU-27. The reduction in cereal production in Ireland is less than that in Germany or France, but also higher than in the rest of the EU. In the Central and



Eastern European countries, production will as a rule be somewhat limited due to reduced protection, but these effects are generally less than those on the entire EU. The non agricultural sectors mostly expand in the EU regions.

- Large adjustments in production take place in the remaining regions. In the countries with low starting protection levels (Oceania, Brazil, and to some extent, the USA) positive effects in production can be seen analogue to the development in the trade balances. In the EBA countries, the production of most agricultural products sinks due to the erosion of preferential. This is particularly clear in the production drop for sugar (-21.7%). Just as in many other regions, the EBA group countries experience an increase in the production of wheat (1.8%). Since the other ACP countries only have limited preferential access to the EU market, the implementation of the HARBINSON-paper in many cases causes a mirror-image effect.
- With a few exceptions, the market prices for agricultural and food products drop in the EU-27, other European countries, Japan, Malaysia, India, China, the EBA group, other Mediterranean countries and the near East, as well as to a certain extent in other Asian countries, and Asian countries with high income. The prices rise in Brazil, Oceania, Canada, the USA, Indonesia, other ACP countries, the FSU, and other Latin American countries and the rest of the world.

### ***Budget and Income***

- The implementation of the HARBINSON PAPER leads to a significant decline in EU expenditures for the agricultural and food sectors in the EU-27 (€ -11.163 billion). This results particularly from the production reduction and the consequential savings on direct payments of € -7.260 billion, and the elimination of export subsidies (€ -3.892 billion). With a simultaneous reduction in the import tariff revenues in the agricultural and food sectors through the tariff reduction of € -1.638 billion negative changes in the GDP tax<sup>3</sup> result from the Doha round at a level of € -9.422 billion, which will be passed on to the member countries.
- For Germany, the implementation of HARBINSON-recommendations means a reduction in export subsidies and direct payments from the EU budget which are reduced by € -0.478 billion and € -1.057 billion €, respectively. At the same time, the payments to the EU budget are also reduced. Thus, following the implementation of the Doha Round of the WTO negotiations less import tax revenues (€ 0.272 billion) will be paid into the EU budget. Thus the GDP tax for Germany will be reduced by € - 2.260 billion. Since the expenses of the EU budget are reduced by a total of € - 11.163 billion, the net transfer from Germany through the implementation of the HARBINSON paper sinks by about one billion € in contrast to the basis run of € -6.183 billion.

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3 Compare the modeling of the EU budget which lies at the base of this study.

- Analogue to the effects in the production, significant income losses can be seen for the EU-27. The change of agricultural gross value added is negative at market prices for the countries and regions of the EU as a consequence of the implementation of the HARBINSON paper in almost all agricultural sectors. Overall, the reduction in the EU-27 runs to € 12.8 billion. The crop sectors are more strongly affected by the reductions than the animal sectors. In addition to market prices for products, the prices for intermediary inputs, for the meaning of which (feeding) is higher in the animal sectors. With the implementation of HARBINSON paper, the gross value added in Germany is reduced by € 1.6 billion, while in France a loss of € 4.1 billion can be seen.

### **Comparison of Scenarios H1, H2 and H3**

- The differences between the results of simulations H1, H2, and H3 are not very pronounced. There are several reasons for this. First, there is no great difference in the reduction of import tariffs between simulations H1 and H2. Secondly, export subsidies are only used in a clear form in the EU-27. A lower reduction in export subsidies (H3) in a part of the considered regions does not have a very strong impact.
- Head and area payments also make up a very high value-related portion of the overall EU expenditures to support the agricultural and food sectors. In the simulations presented, it is assumed that the level of decoupled direct payments remains unchanged. The reforms of agricultural trade implemented in the simulations only affect a very small part of the EU budget and thus lead only to very small changes in the various simulations. In contrast, should a reduction in direct payments be drawn into the simulations for the Doha Round of the WTO negotiations, then the results would be over-proportionately determined by the changes in the direct payments (see BROCKMEIER and SALAMON, 2003)<sup>4</sup>
- Comparing the simulations H1, H2 and H3 several key points can be identified for the EU, which could at least partially be seen through the decompositions (see also Figure 1):
  - The reduction rates in the EU import duties for agricultural and food products with a low starting level of protection (wheat, other cereals, fruit, vegetables and other plant products, poultry and pork and their processing products, as well as oils and fats) hardly differ between the HARBINSON paper and the EU proposal. Accordingly, only a slight difference can be seen for these products between simulations H1 and H2.

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4 BROCKMEIER, M. and SALAMON, P. (2003), Analysen der WTO-Verhandlungen: Auswirkungen der Doha-Runde auf den Agrar- und Ernährungssektor. Gutachten zu den WTO-Verhandlungen für das Bundesministerium für Verbraucherschutz, Ernährung und Landwirtschaft (BMVEL).

- A lower reduction in export subsidies in simulation H3 in contrast leads to somewhat larger difference in the above mentioned products with a low starting level of EU import tariffs. Particularly for wheat, other cereals, fruit, vegetables and other plant products, as well as for fats and oils, lower reductions in EU production can be seen in H3 as in H1.

**Table 1:** Changes in the Outputs of the EU-27 in the Simulations H1, H2 and H3

	H1	H2	H3
wheat	-2.35	-2.50	-0.52
other cereals	-6.67	-6.44	-2.64
oil seeds	-0.93	-1.40	0.30
sugar can and beet	-0.09	-0.04	-0.11
rice	-13.58	-9.62	-12.85
fruit, vegetables and other plant products	-1.49	-1.43	-0.81
cattle	-4.27	-3.10	-3.86
pig and poultry	0.91	0.84	1.05
milk	0.00	0.00	0.00
beef	-6.43	-4.72	-5.51
pork and poultry meat	-0.33	-0.33	-0.13
fat and oils	-2.07	-2.03	-1.37
milk products	-0.17	-0.20	-0.10
sugar	0.00	0.00	0.00
other food	-2.99	-2.20	-2.34
beverages and tobacco	0.81	0.53	0.65
other primary products	0.06	0.06	0.03
manufactures	0.19	0.17	0.11
services	0.03	0.03	0.01

**Source:** Own calculations.

- The production and trade of cattle and beef in the EU is much more negatively affected if import tariffs are reduced more strongly according HARBINSON-paper (H1) than to the EU proposal (H2) The decomposition of results clearly shows that cattle and beef production in the EU will be most strongly affected through the reduction in EU import duties for third countries. Decisive here is, among other factors, the very high production level of the EU in comparison with the rest of the world. A reduction in the import duties in third countries thus hardly has positive effects for the EU.
- These statements also hold true in a similar form for the production of dairy products in the EU. Here a production reduction in the simulation H2 is slightly higher than in Simulation H1. Since milk production is among the most highly protected products world-wide, EU milk production benefits especially from the reduction of protection in third countries (see also Figure 1) Since the reduction in protective

measures is less in simulation H1 as in simulation H2, there is a higher production reduction in H2.