Global Trade Analysis Project
https://www.gtap.agecon.purdue.edu/

This paper is from the
GTAP Annual Conference on Global Economic Analysis
https://www.gtap.agecon.purdue.edu/events/conferences/default.asp

Agricultural trade liberalization –steps taken by the EU and how Finland will face them[1]

Leena Kerkelä

Government Institute for Economic Research (VATT)

P.O.Box 1279

00101 HELSINKI, Finland

This draft 15.4.2008

Abstract

The challenges in Finnish and European agricultural markets are best understood by those indications that have been expressed in international arena of WTO negotiations. Despite the stalemate of the Doha Round negotiations, the EU has clearly committed to adapting to more liberal environment in global agricultural trade. Along these lines, EU has committed to decreasing trade distorting policy instruments, export subsidies and domestic policy instruments

In this paper, these two policy reforms within the European agricultural policy, are studied in global trade framework. Of the Doha agriculture package they are those elements that seem to be realizing despite the other pillars. The reform in domestic support has been analysed as the decoupling decision in CAP 2003 reform. The commitment of export subsidies is assumed to be global. Both the reforms are connected to WTO negotiations.

Global trade model, GTAP is applied to numerical evaluations of the policy reforms. Results are studied especially from the viewpoint of Finland and reflected to other studies both in the area of Doha Development Round as well as CAP reform.

Results show that within the EU, both the reforms decrease agricultural production and pave way for more liberal trading environment even though they do not in itself have any incentives for more imports or exports. Effects vary in their magnitude between member countries. Both the reforms decrease world trade and have a positive impact on world market prices of agricultural products. Results are in line with international studies in the field.

Keywords: Doha Development Round, Agriculture, CAP Reform

[1] The work is part of the project “The effects of removing export subsidies and substantial tariff cuts “, funded by the Ministry of Agriculture and Forestry (MMM, Makera). Other outputs of the project have been documented in Kerkelä, Niemi and Lehtonen (2005, 2008). I thank Jyrki Niemi and Heikki Lehtonenfor all the discussions. This report written as separate work from wider set of tasks in the project. I thank Heikki Lehtonen for providing the figures for decoupling shares but take responsibility for all the rest.

1.1 Introduction

Within Doha Development Round of multilateral trade negotiations, the agricultural trade appeared to be one of the most difficult area to reach an agreement. The European Union has a lot of responsibility over the issue as it is one of the largest traders in agriculture and its agricultural policy has gained a lot of criticism worldwide. Willing or not to hold a position, the EU has a clear role in finding a way for the negotiations to proceed and its steps taken or planned, have an immediate effect on member countries' conditions.

Large scale studies of the impacts of Doha Development Round are documented in several journals and monographs. The reference studies are formed of two main lines. First are the impact studies of DDA in either its agricultural part of the whole negotiation package. These studies often focus on developing countries, the issue of poverty and general goals of development in negotiations and they all utilise in some extent the data provided by Global Trade Analysis Project (GTAP) (Anderson et al. 2005a, 2006 a, Diao et al 2001, Hertel and Keeney 2006, Decreux and Fontagné 2006, Francois et al. 2005, Bouet et al 2005, Polaski 2006). On the other hand, the decoupling issue in the CAP reform that has its connection to WTO negotiations in removing the amber box items to green box, has extensively been studied with quantitative models, not only CGE-models by European Agricultural economist (see survey Balkhausen, Banse and Grethe 2007). These studies focus more on production effects within EU countries with a wider set of modelling studies, still mostly on simulation models.

In this paper, the already approved commitments in the arena of agricultural trade liberalisation by the EU are studied from the viewpoint of Finnish agriculture. The policy reforms studied are those that EU has committed to, export subsidy removal and reform in domestic support. We also ask whether these reforms have an impact on trade especially.

The modified GTAP model is used for analysing the effects in production and welfare in Finnish agricultural sectors. The results are compared to few selected papers in published journals or monographs in order to make results comparable with other studies.

The contributions of the work are based on taking individually few selected items from the negotiation package under focus instead of looking at the whole package. Results for Finland as one member country are analysed separately. Another contribution to existing simulation studies is provided by decoupling assumptions that have been evaluated for Finland and other EU-aggregates separately.

Our simulation results on CAP reform show most decrease in production in grains. The change in the production in cattle is sensitive the decoupling rate of subsidies that varies by countries. The export subsidy results seem magnified compared to other studies where all the pillars are studied together and countries are aggregated. The role of export subsidies is more important for Finland than for other countries. Still if other member countries also

adapt to production changes, Finland does not need to carry the whole burden in the cuts of production.

The paper is structured as follows. The next chapter relates the policy reforms studied to the the agricultural negotiations within WTO. In the chapter 3 we present the modifications to GTAP model to take into account the CAP reform and the scenarios. In the chapter 4 we report the results with reference to other studies. In the chapter 5 we discuss the limitations of the study and make some conclusions.

1.2 The role of agriculture in DDA

The Doha Round of the World Trade Organisation (WTO), and the agricultural negotiations that are part of the Doha Round began in early 2000 under the original mandate of Article 20 of the Uruguay Round Agreement on Agriculture (URAA). The URAA signed in 1994 made an historic contribution to more open agricultural markets by mandating disciplines and establishing a negotiating framework for agriculture, but it had only limited success in rolling back trade-distorting domestic support and improving market access. The Doha Ministerial Declaration in November 2001 established a new mandate by making the objectives more explicit, building on the work carried out so far, and setting deadlines. The main objectives for agriculture found in the Doha Declaration are for "substantial improvements in market access; reductions of, with a view to phasing out, all forms of export subsidies; and substantial reductions in trade distorting domestic support.” The negotiations were performed under these three pillars.

It appears that agreement was easiest to reach in the export-competition pillar. The agreement to eliminate all forms of agricultural export subsidies by 2013, as part of a new partial deal on agriculture, was reached already at the WTO Ministerial Conference in Hong Kong in December 2005. Despite the stalemate of the negotiations the EU has expressed its commitment to give up export subsidies in agriculture. To reach that goal domestically, it is necessary that other policy reforms are in line with that, i.e. there will be necessary cuts in excess supply of agricultural production.

In the domestic support arena, the challenge is to agree a formula for `tiered' reductions in allowed trade distorting support ceilings. The principle has already been conceded that current ceilings will be reduced substantially, and that those with the highest domestic support levels such as the EU should make the biggest reductions. The common interpretation is that the most recent CAP reform EU accepted in 2003 was partly designed to make the EU agriculture more adaptable to commitments in the Doha Round. In particular, the Union’s decision to compound all of its agricultural domestic support system into one Single Farm Payment is expected to improve EU’s ability to adjust to more liberalized agricultural markets which inevitably lies ahead.

The market access pillar of the negotiations proved to be the trickiest to resolve. The principle was established that import tariffs are to be reduced based on a `tiered' formula, with higher tariffs being subject to bigger cuts. The size of the cuts remained unsolved as

well as the size of the proportion of total import tariff lines that may be designated as "sensitive products". The products that are nominated as `sensitive products' would be shielded from the full force of the tariff reductions.

1.2.1 Some conclusions on DDA impact studies

The potential consequences of a Doha agreement have been assessed in a number of recent studies, among them Anderson and Martin (2005), Diao et al. (2001), Hertel & Keeney (2006), Polaski (2006) and Decreux & Fontagné 2006, Francois, Von Meijl and Tongeren (2005) and Bouët, Bureau, Decreux and Jean (2005).

Among the questions made in analysing the outcome of the negotiations, which are performed around quantitative evaluation of the July Framework Agreement, are following:

1) How are the gains of DDA divided between developed and developing countries?
2) How the achievable gains are divided between agriculture and manufacturing goods?
3) What are weights accruing to different pillars in agriculture (i.e. market access, domestic support, export competition)?
4) How far does a realistic outcome in the negotiations get from an ideal outcome, when different concessions (binding overhang, sensitive products etc.) are taken into account?

The World Bank study (Anderson and Martin 2005) puts lots of expectations in the agriculture package especially for developing countries. This opinion is questioned at least in Bouet et al .(2005) who find the agriculture package more controversial to developing countries. Some controversy is also on the weights between agriculture and manufacturing goods between World Bank studies (Anderson and Martin 2005) and Polaski (2006), where the latter puts much more weight on manufacturing goods. Both this conclusions exclude services or trade facilitation.

Quite a uniform view holds for the weights for different pillars. All studies, including Hoekman et al (2004) , Anderson, Martin and Valenzuela (2006) and Diao (2001) find most of the gains accruing to market access.

Sometimes the DDA has been called a Round for nothing when all the details and concessions have been included (4)

Details of market access issue like binding overhang are studied in few papers like Fontagné, Guerin and Jean 2005, Bchir, Fontagne and Jean (2005), Brockmeier et al.

As the EU has most resisted large cuts in market access, it has been blamed for being behind the stalemate of negotiations. The effect of the EU agricultural policy institutions on driving the liberalisation results has been questioned by Féménia and Gohin (2007) and they refer to several studies that take into account details of agricultural policies when estimating the gains from Doha round. They argue that taking into account EU agricultural policy, the

relative contributions of export competition and domestic support pillars greatly expand to the detriment of the EU market access pillar.

1.2.2 Domestic support in WTO and CAP reform

The tiered formulas for cutting domestic support were evaluated on the basis of the Overall Domestic Support (ODS) that covered all the "boxes" that are trade distorting. The EU is able to make a large cut in its AMS ceiling for trade-distorting subsidies, and to both reduce and cap payments from the blue box of less-trade-distorting aid, because it is far less dependent on these types of measure than in was in previous years. The advent of the decoupled Single Farm Payment (SFP) as a result of 2003 CAP reform means that much of the EU's domestic support will be shifted from blue to green box (aids with only a minimal trade-distorting effect), and this should make the 5% limit a comfortable one for the EU. (EU Commission 2003).

The key elements of the reformed CAP are 1) a single farm payment for EU farmers, independent from production; limited coupled elements may be maintained to avoid abandonment of production 2) conditions on health and animal welfare standards and requirements to farmland and environment "cross-compliance 3) rural development policy 4) modulation for bigger farms 5) financial discipline in the farm budget and revisions in the market policy of the CAP, mainly price cuts in the milk sector: butter and skimmed milk powder.

The simulation studies evaluating the impacts of CAP reform and especially Decoupling (SFP) focus more on production effects than on aggregate welfare effects.

Jensen & Yu (2005) provide a study focusing between Doha Round studies and studies on CAP reform. They decompose the overall policy effects on the EU agriculture in three parts: (1) Effects of EU 2003 CAP Reform (preparation of the EU agricultural policy to meet the challenges of the Doha Round); (2) on the top of part (1), the effects of multilateral export subsidy elimination; and (3) on the top of (1)&(2) the effects of significant improvements in market access, e.g. tariff rate reduction.

Concerning the first part, the results suggest that the impacts of EU agricultural policy reform, made because of the on-going Doha round, are as significant as the possible trade reforms themselves. First, a structural adjustment in EU agriculture and food production would be expected as a result of the CAP reform, with the outputs of wheat, oilseeds, plant fibres, bovine animals and bovine meat dropping significantly. Second, the EU's net export position in these products would deteriorate in responding to the CAP reform. However, the overall size of the EU agricultural production and trade remains nearly unchanged. Third, despite substantial allocative efficiency gains accruing to the EU from the CAP reform, its terms of trade effect is nevertheless quite small. On the aggregate, the welfare and trade expansion effects of the CAP reform on the rest of world are expected to be quite limited, as compared to what can be realized from market access reform.

1.2.3 Export subsidies and WTO

The EU is by far the largest user of per-unit export subsidies in both value and volume terms. According to WTO notifications, the EU accounts for about 90

percent of total expenditure on agricultural export subsidies. The agreement to eliminate agricultural export subsidies by 2013, as part of a new partial deal on agriculture, was reached at the WTO Ministerial Conference in Hong Kong in December 2005 – but the rules governing the transitional phase up to 2013 are still being disputed. In other word, further negotiations are needed to establish the rate at which existing refunds must be phased out (during the transitional period leading up to eventual elimination by the end of 2013).

The economics of joint effects of reduction in domestic support and removal of export subsidies can be graphed with a partial equilibrium approach.

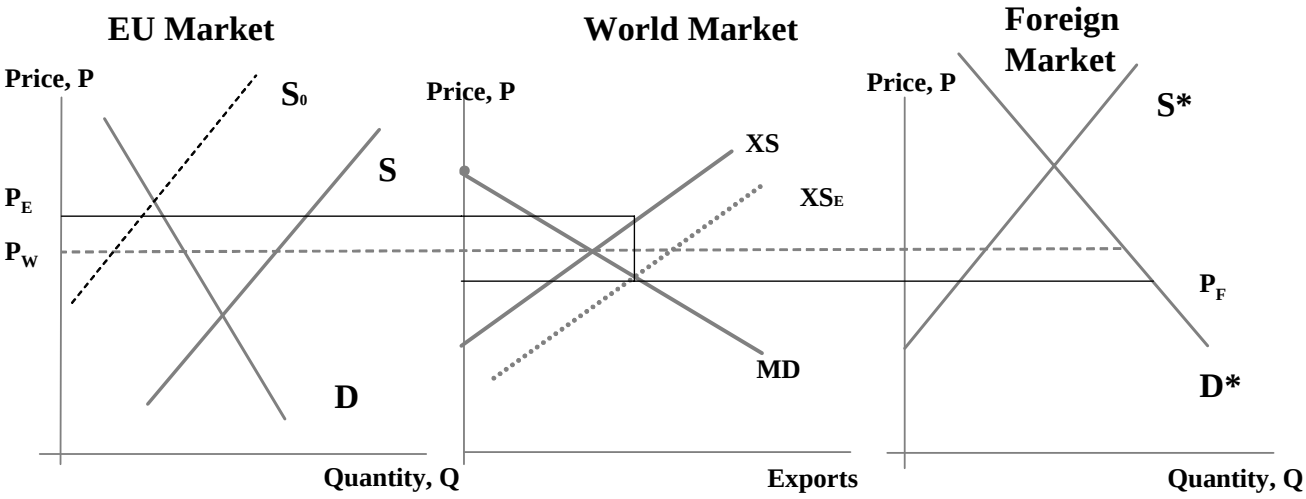

Figure: Joint effects of domestic support and export subsidies

The domestic support has increased supply in EU market and kept the price level low. Excess supply has been exported and increasing incentive for production has been created by export subsidies. In practice though, export subsidies have been created to remedy the overproduction problem. Both the policy instruments tend to keep the world market prices low. Effect of removing subsidies and limiting the use of export subsidies work for increasing the world market price and limiting the supply.

1.3 Modelling framework and scenarios

1.3.1 Standard GTAP model

The quantitative results of this study are derived by using the multiregional numerical computable general equilibrium (CGE) model of the Global Trade Analysis Project (GTAP). The GTAP model and database are standard tools for analysis in the changing world of commodity markets. The standard model assumes a competitive environment where consumers and firms take prices of goods and factors of production as given.

Private household preferences are handled by non-homothetic constant difference of elasticity (CDE) function. Transaction costs are also accounted for in the model as trade and transport margins. Global banking sector links savings and investment. Bilateral trade flows are modelled through product differentiation on the demand side, with the assumption of imperfect substitutability between similar goods produced in different countries and regions (Armington, 1969). All policy interventions are represented by price wedges. The framework of the standard GTAP model is documented in the GTAP book (Hertel 1997) and available on the Internet (www.gtap.agecon.purdue.edu/)

1.3.2 Database and aggregation

The most recent publicly available database version – known as version 6.0 – is a cross-section of data from year 2001 collecting balanced values for bilateral trade flows in sectors and description of the economies. The GTAP database distinguishes between 87 regions, 57 industries and five primary factors. In this analysis, the database is aggregated into a 11-region and 14-commodity aggregation 8 of which are in primary agriculture (Table 1).

The regional aggregation of the analysis includes the major agricultural exporting and importing regions (Australia/New Zealand, China, the EU-15, India, Mercosur, Russia and the United States). Australia/New Zealand and Mercosur are considered largest exporters in agricultural products, whereas Russia is an example of a single large country importing subsidised products from the EU market. The aggregate 'Rest of the EU' includes all the ten new member countries in the EU plus Bulgaria, Croatia and Romania. The EFTA countries comprise of Iceland, Norway and Switzerland. For further analysis within the EU, we have disaggregated the EU into six regions (see table below). Moreover, Poland is disaggregated from other Eastern European countries. In the commodity aggregation, most of the agricultural and food products in the original GTAP database are retained while non-agricultural goods are grouped into manufacturing and services.

Table 1. Regional and commodity aggregation used in the study (GTAP Version 6)

Regions	Abbreviations		Sectors Abbreviations
EU – 15	EU		
Poland	POL	Wheat	WHEAT
Rest of ACCEU, Croatia	REU	Other grains	GRO
Switzerland, Norway, Iceland	EFT	Vegetables, fruits, nuts	V_F
USA	USA	Other crops	OCR

Mercosur (excl. Paraguay)	MERCOSU	Raw milk	MILK
Australia and NZL	AUSNZ	Bovine meat	CATTLE
Russia	RUSSIA	Animal products, nec	OTAG
China and Honkong	CHINA	Bovine meat products	CATTMEAT
India	INDIA	Other meat products	OTMEAT
LDCs in Africa	LDCs	Dairy products	DAIRY
Rest of the World	ROW	Sugar	SUGAR
Further disaggregations	EU	Other food	OTFOOD
Finland	EU	Resources	RESOUR
France	EU	Manufacturing	MANUFAC
Germany and Austria	EU	Services	SVCES
Northern EU	EU		
Southern EU	EU		
Poland	REU		
Rest of ACCEU	REU		

Source: GTAP Data Base 6.0

Before the simulations, few adjusting simulations for the basedata have been implemented. These include the Eastern European countries (Poland, REU) joining the EU, which has been performed by building a customs union with the EU.

1.3.3 Domestic support in the Standard GTAP Model

In GTAP Database 6 the domestic support uses 2001 OECD Producer Support Estimates (PSE) which have further disaggregated in the EU for 15 member countries and 12 GTAP Commodities (Jensen 2006, Huang 2006). The support payments are grouped in 4 categories: output subsidies, intermediate input subsidies, land-based subsidies and capital-based payments. The overall amount of subsidies in EU-15 in 2001 sum up to 35.3 Billion USD.

1.3.4 Policy instruments of the CAP

With the implementation of the CAP reform, most of the existing CAP-support measures are converted in the model into a region-specific, fully decoupled land-area payment. Following the approach of Jensen and Yu (2005), an additional land subsidy rate is introduced into the model that is equalised across all sectors entitled to direct payments, while budgetary outlays for total domestic support are held constant.[2]

1.3.5 Scenarios

[2] I am thankful to Hans Jensen for his support in implementing the homogenous land subsidy.

A full decoupling scenario has been performed, for simplicity, for all but beef premiums that have been allocated as capital subsidies.[3] A large part of the livestock premiums are also converted into a simple farm income payment in the form of a uniform land-based payment. However, a reduced premium per head is kept as capital subsidies, since part of the support is still linked to production. In arable crops, all subsidies have been decoupled.

The national implementations of the CAP reform in each member country in the EU have been taken into account and aggregated to the country aggregation in this study (European Commission 2004a,b, 2005; presented briefly by Agra Europe 2006 (August 25))[4]. In the case of new member countries (EU-10) all the CAP payments are paid for land. Their national shares have been evaluated as a share of reference country (Germany) compared to budgetary expenses in 2013. In the case of old member countries we have explicitly calculated the de-coupled and coupled part of the CAP support for beef animals. Otherwise the decoupling scenario moves all the subsidies for capital, land and output and transforms them to land subsidy.

With an aggregation applied here, the scenario ends up in the following degrees of uncoupled production of beef. There are very significant differences in the resulting coupled aid in different groups. For example, France has retained as much subsidies production linked as possible (63 %) , whereas Germany, Ireland and the UK have de-coupled all CAP payments for beef. Hence the production linked subsidies in groups 'GERA' (9 %) (Germany and Austria) and 'NEU' (16 %) (Northern EU comprising the Netherlands, UK, Ireland, Denmark and Sweden) are relatively low compared to France and Finland (50 %). In Southern EU (SEU) the coupled share will be 38 %. In the case of CAP area payments, we have assumed full decoupling even though some countries, like France, have coupled some of the CAP payments to production decisions. Hence the aggregate de-coupling rate is appr. 90% in the EU. This equals approximately with a share of intermediate inputs left intact (5-10 % of subsidies).

The analysis below shows partly how sensitive the production decreases in beef are for the decoupling assumptions. With a larger coupling percents, the introduction of CAP does not have so large effects on the production.

As a result for Single Farm Payment, the land subsidy rates are equal in every sector. As large part of the market value for land is due to subsidies, this new instrument does have a clear impact on all the simulations following. If follows, that the factor prices of land not so sensitive to price changes any more. Before the new instrument, the implicit assumption of the land was that each commodity utilised land separately for its production. So the demand for land varied differently depending on the sector. These sectoral effects had their own magnified effects on the price of land.

---

[3] CAP support given to livestock (special premium, suckler cow premium, ewe premium, extensification premium and slaughter premium) have been modelled as subsidies to agricultural capital, while male animal/steer premiums have been modelled as output subsidies to slaughter animals.

[4] Heikki Lehtonen is responsible of the country specific decoupling information used in this study as well as information on budgetary expenses related to CAP and compared with GTAP Database.

In GTAP Data Base 6, the export subsidies are reported as by WTO notifications (see GTAP documentation). In our simulation scenarios we remove the export subsidies altogether. The case is fully documented in Kerkelä, Niemi and Lehtonen (2005) and shortly referred here.

Scenarios are named as follows

EXP-1 Decoupling with coupled beef subsidies
EXP-2 Full decoupling also in beef subsidies
EXP-3 Global removal in agricultural export subsidies
EXP-4 MTR Reform (EXP-1) and removal of export subsidies (EXP-3)

1.4 Results

To start from national results, table 2.1. shows the production effects in Finland. In the first column, EXP-1, the largest effects from CAP reform are shown in arable crops and bovine meat, as in other studies (Jensen and Yu 2005). The implementation of dairy market reform would have reduced the dairy production as well, but it has been neglected. Agricultural production increases in CAP reform in mainly in vegetables, fruits and nuts, a sector which has not been dependent on current subsidy system.

The export subsidy removal affects mainly dairy products, grains and bovine animals production. The effects on land price are opposite in the two scenarios. Still in the joint scenario the effect on land price remains positive.

Table 1. Production effects in Finland in different scenarios

Production	EXP-1	EXP-2	EXP-3	EXP-4
Wheat	-18.98	-19.03	0.36	-18.53
Other grains	-8.35	-8.50	-13.18	-18.42
Vegetables fruits and nuts	4.92	4.92	1.68	5.34
Other crops	-4.62	-4.65	1.75	-4.18
Bovine animals	0.06	0.06	-5.85	-6.27
Other animals	-2.34	-5.00	-1.10	-3.31
Raw milk	-6.03	-6.61	-0.24	-6.43
Bovine meat products	-1.82	-3.96	-1.23	-2.85
Other meat products	-2.47	-3.35	-1.04	-3.39
Dairy products	0.10	0.10	-6.25	-6.63
Sugar	-0.13	-0.16	-1.01	-1.18
Other processed foods	-1.06	-1.13	-0.25	-1.38
Resources	0.49	0.58	0.17	0.65
Manufacturing	0.49	0.59	0.19	0.67
Services	-0.02	-0.03	0.05	0.04
Investment goods	-0.84	-0.94	-0.03	-0.89
Price of land	30.99	38.43	-27.93	28.24

The second column (EXP-2) is similar to EXP-2 but only studies the sensitivity assumption of decoupling on the production. If all subsidies are decoupled, the beef production would decrease twice as much as in the first scenario. The other effects come from the interlinkages of sectors.
The export subsidy removal effects can be anticipated from the degrees of export subsidies in the base data. The results have already been analysed in Kerkelä, Niemi and Lehtonen (2005). In Finland, the production in grains, dairy products and bovine meat would decrease the most.

In the joint experiment of CAP reform and export subsidies the effects are mainly magnified by the two joint policy reforms. This is shown in the production of grains, bovine meat and other meat products. The impact in dairy production is modelled in a different way. Because the CAP reform has already been covered by reduced use of import tariffs and export subsides, the joint effect does not decrease the production of dairy products any further.

Table 2. Changes in production EU-wide in CAP reform, EXP-1

Production	FIN	FRA	GERA	NEU	SEU	POL	REU
Wheat	-18.98	-9.64	-8.30	-8.98	-23.78	-0.11	3.20
Other grains	-8.35	-1.90	-3.80	-8.19	-0.99	0.77	1.57
Vegetables fruits and nuts	4.92	-1.39	3.92	0.98	4.52	-0.66	0.80
Other crops	-4.62	2.86	3.86	0.52	-10.48	0.24	-0.77
Bovine animals	0.06	-0.76	0.48	0.36	-0.36	0.28	-0.42
Other animals	-2.34	1.67	-6.47	-7.09	-3.16	3.85	4.50
Raw milk	-6.03	-0.41	0.25	0.02	0.61	-0.25	-0.04
Bovine meat products	-1.82	0.30	-4.61	-3.43	-1.28	1.05	1.16
Other meat products	-2.47	-0.06	0.39	-0.68	0.56	-0.15	0.01
Dairy products	0.10	-1.16	0.74	0.52	-0.19	-0.19	-0.84
Sugar	-0.13	0.29	0.25	0.02	-1.23	0.33	0.15
Other processed foods	-1.06	0.23	0.04	-0.10	-0.64	0.28	0.26
Resources	0.49	0.11	0.14	0.29	0.34	-0.88	-0.41
Manufacturing	0.49	-0.01	0.03	0.19	0.31	-0.91	-0.47
Services	-0.02	0.04	0.03	0.03	0.10	0.35	0.15
Investment goods	-0.84	-0.14	-0.20	-0.45	-0.40	0.53	0.26
Price of land	30.99	11.89	15.72	33.14	5.99	42.75	69.98

Table 3. Changes in production EU-wide in CAP reform, full decoupling, EXP-2

Production	FIN	FRA	GERA	NEU	SEU	POL	REU
Wheat	-19.03	-9.51	-8.36	-9.10	-23.76	-0.02	3.02
Other grains	-8.50	-2.15	-3.80	-8.29	-1.31	0.87	1.58
Vegetables fruits and nuts	4.92	-1.34	3.88	0.95	4.57	-0.76	0.69
Other crops	-4.65	2.89	3.85	0.55	-10.43	0.27	-0.90
Bovine animals	0.06	-1.31	0.46	0.31	-0.60	0.35	-0.40
Other animals	-5.00	-3.97	-6.13	-8.16	-7.43	9.75	8.73
Raw milk	-6.61	-0.23	0.35	-0.24	0.72	-0.30	-0.08
Bovine meat products	-3.96	-4.49	-4.58	-3.55	-3.85	1.60	1.73
Other meat products	-3.35	0.14	0.52	-1.09	0.67	-0.18	0.03
Dairy products	0.10	-1.07	0.70	0.48	-0.18	-0.22	-0.87
Sugar	-0.16	0.31	0.24	0.02	-1.30	0.33	0.16
Other processed foods	-1.13	0.21	0.03	-0.14	-0.69	0.27	0.25
Resources	0.58	0.32	0.15	0.34	0.47	-0.91	-0.42
Manufacturing	0.59	0.17	0.02	0.21	0.42	-0.96	-0.50
Services	-0.03	0.04	0.03	0.03	0.09	0.35	0.15
Investment goods	-0.94	-0.32	-0.14	-0.46	-0.51	0.59	0.31
Price of land	38.43	25.66	17.20	39.45	16.86	43.61	70.81

Results show that within the EU, both the reforms decrease agricultural production and pave way for more liberal trading environment even though they do not in itself have any incentives for more imports or exports. Effects vary in their magnitude between member countries. Both the reforms decrease world trade and have a positive impact on world market prices of agricultural products. Results are in line with international studies in the field.

Table 2 reports the production effects of the first scenario in the EU context. What appears clearly, is the role of decoupling in beef production. In France, where more than half of the capital subsidies in beef were left tied to production, the production in bovine animal products even increases.

In general, the results are of same direction in most of the countries, showing decreasing production in agricultural products. The decrease in dairy production is showing as an increase in the production, resulting from an assumption that the actual decrease in the price of milk was not expected to happen.

The changes in the price of land vary quite a lot by countries and reflect most the subsidy dependence of the factor. In Finland, the original value added without subsidies is low relative to the subsidy. The same is shown in new member countries in the Eastern Europe.

Our simulation results on CAP reform show most decrease in production in grains. The change in the production in cattle is sensitive the decoupling rate of subsidies that varies by countries. The export subsidy results seem magnified compared to other studies where all the pillars are studied together and countries are aggregated. The role of export subsidies is more important for Finland than for other countries. Still if other member countries also adapt to production changes, Finland does not need to carry the whole burden of the results.

The final table looks at the effect on trade in Europe and in the EU. We look at the trading figures at commodity level in the last case with joint effects of CAP reform and export subsidy removal. The figures show changes in global trade but are borne from EU unilateral actions.

Table 3. Effect of world price index and global exports in EXP-4

	Price index for exports	Contribution by CAP	Contribution by Exp.sub	Volume of exports	Contribution by CAP	Contribution by Exp.sub
Wheat	2.8	2.4	0.4	-0.6	0.6	-1.2
Other grains	3.8	2.3	1.5	-1.9	-0.4	-1.6
Vegetables fruits and nuts	-1.1	-1.4	0.3	-0.3	0.0	-0.3
Other crops	0.7	0.5	0.2	0.7	0.8	-0.1
Bovine animals	1.1	0.4	0.7	-4.5	-1.0	-3.4
Other animals	3.2	3.3	-0.1	0.0	0.3	-0.3
Raw milk	0.2	0.0	0.1	-0.3	0.0	-0.2
Bovine meat products	2.0	1.1	1.0	-2.7	-0.2	-2.5
Other meat products	0.8	0.2	0.6	-2.3	-0.2	-2.1
Dairy products	3.4	0.0	3.4	-9.2	0.0	-9.2
Sugar	1.1	0.1	1.0	-2.1	0.0	-2.1
Other processed foods	0.5	0.2	0.4	-0.6	0.0	-0.6
Resources	0.0	0.0	0.0	0.0	0.0	0.0
Manufacturing	-0.1	0.0	0.0	0.0	0.0	0.0
Services	-0.1	0.0	0.0	0.0	0.0	0.0

The results are in some sense provoking. Reducing subsidies and overproduction does not necessarily give rise to increasing trade if other measures for open markets are not utilised. Instead, the unilateral actions are shown mostly in increasing prices for most of the agricultural products.

The domestic reforms in the EU seems to work for improving the profitability of domestic markets. The CAP reform contributes essentially in driving down excess production facing weak demand on domestic markets, i.e. the part of production earlier produced in order to be eligible for subsidies. Hence the CAP reform decreases the need for exports and hence the elimination of export subsidies as one part of our Doha round scenarios, will not pose any major shock in most products. The main result of the CAP reform is its anticipated increase in prices of agricultural products.

Table 3. Effect on welfare , in Mio US Dollars

Welfare	EXP-1	EXP-3	EXP-4
FIN	-45	94	59
FRA	812	414	1334
GERA	837	713	1624
NEU	536	1003	1639
SEU	1648	493	2184
POL	1315	-31	1272
REU	1014	-54	947
EU-24	**6116**	**2632**	**9059**
EFT	15	-105	-90
USA	210	-48	113
MERCOSU	186	86	270
AUSNZ	104	288	386
RUSSIA	-31	-325	-340
CHINA	-87	-143	-232
INDIA	12	-3	7
LDCs	23	-225	-192
ROW	-188	-1584	-1775
Altogether	6360	573	7206

The welfare effects of domestic reform accrue almost totally to the EU itself. The export subsidy removal has also negative effects for those countries that are net importers of agricultural products. Still, the EU is itself mostly the beneficiary of its actions.

1.5 Discussion and concluding remarks

The results from global studies show that joint effect of export subsidy removal and reductions in domestic support cover about 10 % of the global gains achievable. Based on that, the overall welfare gains from total implementation of the Doha Round would have been about 72 060 Million USD.

Hertel and Keeney (2006) report the total welfare gains to be app. 48 000 Milion USD. Based on that, the partial reforms bias the welfare conclusions. One of the reasons is also on modelling framework, which in Hertel and Keeney is the modified GTAP model, called GTAP-AGR. The main reason is however that where the part of the positive gains in the simulations here are due to terms of trade gains coming from both of the experiment would be lost if the policy reforms were supplemented with tariff reductions.

Finland has a tough challenge in keeping its goals on the levels on national production. Finland is still the only country that has is own national support systems apart from EU wide subsidies. Under the Common Agricultural Policy of the EU, the member countries like Finland, can only with limited possibilities drive their own goals in agriculture. In changing international environment in trade, Finland withdraws to a possibility to secure the safe availability of food stuff to its citizens. (MMM 2005) As an interpretation, the sustainable level of production has been raised as a goal in national policy plans. This means compensation for deteriorating position in competitiveness. External commitments by the EU, like the successful trade negotiations would have posed a challenge for Finnish agriculture to narrow its production structure.

The idea of the CAP policy reform and the aim of the EU Commission to decrease export subsidies considerably, if not abolish altogether, is to start the adjustment processes well before any radical tariff reduction can take place. That approach significantly eases the adjustment in the actual trade liberalisation, for Finland.

For other EU countries, the situation is not symmetric. For Finland, the trading in its current form is exports with the help of subsidies. The CAP reform and decrease in production will result in increasing imports in most of the commodities.

However the relatively large production effects in Finland were obtained in the model simulations. The diminishing role of production linked subsidies in the EU and also possibly in Finland – which is relatively reliant on production linked subsidies in maintaining the current structure of production – raises a question what tools are available to mitigate the negative effects for the agri-food sector.

The CAP reform has already been implemented. This gives a possibility to study ex post whether the anticipated changes have happened.

References

Agra Europe (2006): "SFP budget figures reveal almost 90% decoupling rate", p. A/1-2 August 25 2006. Agra Informa Ltd.

Anderson, K. - Martin, W. (2005): *Agricultural Trade Reform and Doha Development Agenda*. Palgrave McMillan, co-published by World Bank. http://publications.worldbank.org/ecommerce/catalog/product-detail?product_id=5105941&

Anderson, K., Martin, W. - van der Mensbrugghe, D. (2005): Market and Welfare Implications of Doha Reform Scenarios? in Anderson & Martin 2005 *Agricultural Trade Reform and Doha Development Agenda*. Palgrave McMillan, co-published by World Bank.

Bach C.F., Frandsen S.E. and Jensen H.G. (2000). Agricultural and Economy-Wide Effects of European Enlargement: Modelling the Common Agricultural Policy. *Journal of Agricultural Economics*, 51(2): 162-180.

Balkhausen, O., M. Banse and H. Grethe (2007): Modelling CAP Decoupling in the EU: A Comparison of Selected Simulation Models and Results, *Journal of Agricultural Economics.*

Bouët A. – J. Bureau - Y. Decreux – S. Jean (2005): Multilateral Agricultural Trade Liberalisation: The Contrasting Fortunes of Developing Countries in the Doha Round, *World Economy*, Vol. 28(9), 1329-135.

Decreux, Y. & Fontagné, L. 2006. Quantitative Assessment of the Outcome of the Doha Development Agenda. CEPII, Woorking paper No 2006-10. 50p. http://www.cepii.fr/anglaisgraph/workpap/summaries/2006/wp06-10.htm

Diao, S., A. Somwaru and T. Roe (2001): A Global Analysis of Agricultural Trade Reform in WTO Member Countries, in M. Burfisher et al. Agricultural reform in the WTO : the road ahead, Agricultural Economic Report No. 802, Economic Research Service, United State Department of Agriculture, Washington, DC.

European Commission 2003a. EU Fundamentally Reforms its Farm Policy to Accomplish Sustainable Farming in Europe http://europa.eu/rapid/pressReleasesAction.do?reference=IP/03/898&format=HTML&aged=0&language=EN&guiLanguage=en

European Commission 2003b. CAP reform - a long-term perspective for sustainable agriculture. http://ec.europa.eu/agriculture/capreform/index_en.htm

European Commission 2004a. Commission Regulation (EC) No 796/2004 of 21 April 2004. http://eur-lex.europa.eu/LexUriServ/site/en/consleg/2004/R/02004R0796-20050325-en.pdf

European Commission 2004b. Commission Regulation (EC) No 795/2004 of 21 April 2004 http://eur-lex.europa.eu/LexUriServ/site/en/consleg/2004/R/02004R0795-20050101-en.pdf

European Commission 2005. Commission Regulation (EC) No 118/2005 of 26 January 2005 http://eur-lex.europa.eu/LexUriServ/site/en/consleg/2005/R/02005R0118-20050416-en.pdf

European Commission 2006. Comparison of Carnegie, World Bank and CEPII's studies regarding the potential DDA impact on poor developing countries. Trade/H/VA(2006)

European Commission 2007. Prospects for agricultural markets and income in the European Union 2006-2013. January 2007. Directorate General for Agriculture and Rural Development. http://ec.europa.eu/agriculture/publi/caprep/prospects2006b/fullrep.pdf

Frandsen, S. E., B. Gersfelt and H. G. Jensen (2003): The Impacts of Redesigning European Agricultural Support, European Review of Agricultural Economics, Vol. 15, No 2, 26:106-131.

Freeman, F., J. Melanie, I. Roberts, D. Vanzetti, A. Tielu, and B. Beurtre, 2000. The Impact of Agricultural Trade Liberalisation on Developing Countries, ABARE Research Report 2000.6, Canberra, Australia.

Gohin A. 2006 Assessing CAP Reform: Sensitivity of Modelling Decoupled Policies. Journal of Agricultural Economics, 57(3), 415-440.

Hertel, T.W. and R. Keeney (2006): The balance between domestic support, market access and export competition: where do developing country interests lie?, Chapter 2 in Anderson K. and Martin W. (eds.), Agricultural Trade Reform and Doha Development Agenda, New York, Palgrave-MacMillan.

Hoekman, B., F. Ng and M. Olarreaga (2004): Agricultural Tariffs or Subsidies: Which Are More Important for Developing Economies, The World Bank Economic Review, Vol. 18, No. 2.

Huang Hsin 2006. V6 Documentation - Chapter 16.B: Agricultural Domestic Support, https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=1820

Jensen, . G. 2006. V6 Documentation - Chapter 16.C: Domestic Support: European Union. https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=1822

Jensen, H.G. & Yu, W. 2005. Reforming Agricultural Domestic Support of the EU in the Doha Round: Measurement, Feasibility, and Consequences. Paper presented in GTAP conference in Luebeck 2005.

Kerkelä L. – Niemi, J. and H. Lehtonen (2005): The Impacts of WTO Export Subsidy Abolition on the Agri-Food Industry in the EU: A Preliminary Assessment, VATT Discussion Papers No. 375.

MMM (2005) Valtioneuvoston maatalouspoliittinen selonteko, in Finnish, available at http://wwwb.mmm.fi/tiedoteliitteet/051020_SELONTEKO.pdf

Polaski, S. 2006. Winners and Losers: Impact of Doha Round on developing countries. Carnegie Endowment for International Peace.

World Bank, 2003. Global Economic Prospects 2004: Realizing the Development Promise of the Doha Agenda, the International Bank for Reconstruction and Development /The World Bank, Washington DC.

World Bank, 2003. Global Economic Prospects 2004: Realizing the Development Promise of the Doha Agenda, the International Bank for Reconstruction and Development /The World Bank, Washington DC.