THE EU AGRICULTURAL POLICY FROM A LONG RUN PERSPECTIVE: IMPLICATIONS FROM THE EVOLUTION OF THE GLOBAL CONTEXT[1] [2]

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1. Introduction

The role of this paper is to present reflections, from a long run perspective, on the implications for the Common Agricultural Policy (CAP) of the expected evolution of the global context. Concentrating on the global context means focusing on the evolution of characteristics of the market and policy scenarios which are not specifically domestic; this means ignoring - as much as this is reasonably possible, many of the expected changes being relevant both globally and domestically – expected developments in the local context, the domestic scenario, which are addressed in other contributions to this workshop. The long run time horizon has been defined, rather conservatively, as 2030, roughly 20 years from today.

The organization of the paper is as follows: section two identifies the main drivers for the future of the global context and briefly discusses what can be expected from each of them; section three briefly describes the likely evolution of the CAP based on the changes observed in the past 20 years, since the late 1980s, addresses the issue of its capability to deal with the challenges posed by the new global context and, finally, discusses the implications of the conclusions reached in this respect for the

[1] Invited paper presented at the Workshop on "*Reflections on the Common Agricultural Policy from a long run perspective*" organized by the European Commission, Bureau of European Policy Advisers (Brussels, 26 February 2009).

[2] This paper is an updated, revised and expanded version of an "expert paper" prepared for the "SCAR-Foresight in the Field of Agricultural Research in Europe" 2006 exercise (Anania 2007a). I am grateful to Alan Matthews for his helpful comments on an earlier draft of the paper. Financial support received by the "New Issues in Agricultural, Food and Bio-energy Trade (AGFOODTRADE)" (Small and Medium-scale Focused Research Project, Grant Agreement no. 212036) research project funded by the European Commission, and by the "European Union policies, economic and trade integration processes and WTO negotiations" research project funded by the Italian Ministry of Education, University and Research (Scientific Research Programs of National Relevance 2007) is gratefully acknowledged. The views expressed in this paper are the sole responsibility of the author and do not necessarily reflect those of the European Commission.

policies relevant for agricultures and local development of rural areas in Europe. Section four concludes.

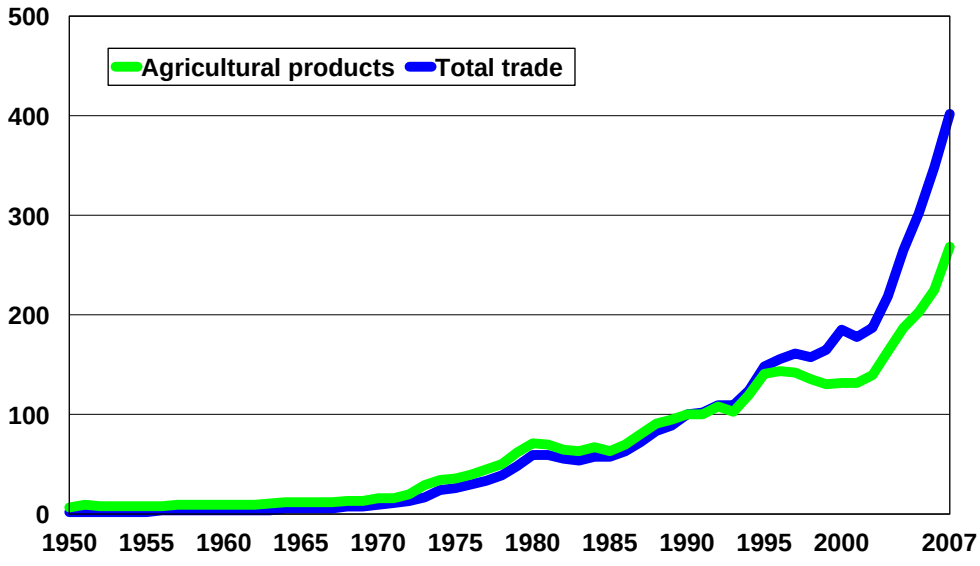
2. The major key drivers of changes in the global context for agro-food markets[3]

2.1 Globalization

Globalization is defined here as the progressive, rapid increase of the spatial size of the potential market for any given good. This market expansion is mainly the result of technological changes which (a) have allowed the diffusion of new information technologies which have lowered the costs of disseminating and accessing information, as well as transaction costs, both in business-to-business and business-to-consumer exchanges; (b) have extended the life of perishable products; and (c) have led to the introduction of better and cheaper ways to transport food products. Another relevant factor in globalization has been increased people mobility.

Globalization is a process which will not slow down in the future; international trading of agro-food products will continue to grow at a fast pace (past developments in total and agricultural world merchandise trade are shown in Figure 1).

Figure 1 - World merchandise exports in value, total trade and agricultural products only. (1950-2007; 1990=100)



Source: author calculations based on WTO data.

[3] Forward looking studies which have broadly contributed to the identification of the main drivers include FAO (2003 and 2006); OECD-FAO (2006, 2007, 2008); Pinstrup-Andersen, Pandya-Lorch and Rosegrant; and Scenar 2020.

The most relevant effects of market globalization are increased price-competition (for all products; domestically as well as internationally), the diffusion of "global products" (i.e. identical products which can be found in very distant markets) and a tendency towards convergence in patterns of food consumption; at the same time food consumption will be characterized by an increasing diversification (consumers around the globe will tend to consume the same things, but what they consume will tend to include food items not part of their original consumption patterns).

The increased diffusion of "global products" implies scale economies and increased concentration in the industry producing them. The concern sometimes raised that the production of "global" food products, occurring on a larger scale, should carry higher safety risks is questionable; in fact, the contrary is more likely to be the case.

At the same time, and not in contrast, globalization favours an increased demand by an expanding segment of consumers (the relatively richer and more educated) for quality products,[4] i.e. for products which are differentiated on the basis of specific *product* quality attributes (including, for example, its origin, or the fact that it does not contain GMOs) or *process* quality attributes (including, for example, the product being the result of organic farming; having been produced respecting certain environmental, animal welfare or ethical standards well above those mandated by existing regulations; or being a "fair trade" product).

As a result of increased price-competition induced by market globalization, less competitive segments of European agriculture and food industry producing relatively undifferentiated products, i.e. products which can be more easily substituted in consumption with similar ones - will find themselves unable to operate profitably.

As a result of the expansion of the markets for quality products, those components of the agriculture and food industry which prove able to cope with the challenges of a globalised market will benefit from the increasing opportunities created by globalization. The biggest challenge they will face is less likely to be related to their ability to produce a quality product that consumers appreciate and are willing to pay more for, than to their ability to develop strategies and adapt their structures to market it effectively on a global scale.

2.2 Increased international competition as a result of trade policy changes

A second source of increased international competition for European agricultures comes from expected trade policy changes: multilateral, regional and unilateral trade liberalization.

Increased international competition will result from the reduction of barriers to trade due to:

[4] The term "quality" is used in this paper in a non-judgmental, broad sense; a quality good is a good that at least some consumers perceive as different and better.

- multilateral trade agreements (e.g. those reached within the WTO framework);
- regional trade agreements (e.g. those reached within the European Neighbourhood Policy, or as a result of the conclusion of the many negotiations currently taking place, either on a regional or a bilateral base);
- the creation of new custom unions or the extension of existing ones (e.g. the full implementation of the Economic Partnership Agreements with regional groupings of ACP (African, Caribbean and Pacific) countries, or the EU enlargement to new member states);
- the granting, or extension, of unilateral trade preferences (e.g. those granted by the EU under its Everything But Arms (EBA) initiative to least developed countries); and, finally,
- unilateral trade policy reforms.

In the 20 year time horizon considered in this exercise one should consider a number of possible trade policy developments including: the reduction of border barriers to trade on a MFN basis, both in the European Union and elsewhere; the enlargement of the European Union to the Balkans and, possibly, to Turkey; further liberalization of trade in agricultural and food products within the Euro-Mediterranean Association Agreement framework; the liberalization of trade for agricultural and food products as a result of the implementation of the Economic Partnership Agreements and other regional and bilateral trade agreements; deeper and wider trade preference concessions by the EU within existing preferential schemes - i.e. increased preferential margins and the extension to new beneficiaries of existing preferential frameworks; the elimination of EU export subsidies, regardless of the successful conclusion of the DDA round.

In addition, it is important to take into consideration the expected increased capacity over time of beneficiary countries to exploit the potential benefits from the trade preferences granted.[5]

While it is reasonable to assume that the DDA round of WTO negotiations will eventually come to an end and that the resulting agreement will be implemented within the 20 year time horizon considered in this exercise, it is difficult to foresee the "level of ambition" of any final agreement. Will the agreement determine small but tangible changes in domestic and trade policies of some of the main players, or will its effect be limited to consolidating policy changes which will have already been implemented unilaterally (for largely domestic considerations), making policy U-turns impossible? If an agreement with a low "level of ambition" is reached within the next few years, then one can imagine a new round of negotiations starting within the time horizon considered in this paper.

[5] Obstacles which may limit the actual effectiveness of trade preferences and which can become less relevant in the future have been discussed, among others, by Bureau, Disdier and Ramos; Candau and Jean; Gallezot and Bureau; Manchin, and Panagariya.

No matter what happens at the WTO, negotiations and the agreement will not effect significantly the reform process of EU policies for agriculture and rural development (Anania 2007b).

WTO negotiations have often been indicated as an insurmountable constraint for CAP reforms; however, the CAP has not been and will not be a stumbling block in DDA negotiations; on the contrary, policy reforms introduced since the Fischler reform in 2003, which have been driven by domestic policy concerns, have allowed the EU to play an active and credible role in the DDA round negotiations on agriculture.

Increased international competition resulting from trade policy changes will determine a further "market reorientation" of agricultural and food prices in the EU, i.e. a smaller wedge, if any, between domestic prices and those on the world market than is the case today for many products; at the same time, higher price volatility of domestic prices should be expected.

2.3 Economic growth

In the next 20 years per capita incomes are expected to grow in all regions of the world, although at different rates.

In Europe growth rates will be higher in current and future new member states than in EU-15; per capita income will grow at slightly higher rates in the other developed countries, while significantly higher growth rates will be observed in all developing country regions.

The expected growth in per capita incomes will affect the *quantity* of food demanded in the developing world, food *expenditure* and the *composition* of food demanded everywhere. Food expenditure will increase with per capita income. Food composition will change as, for example, typically: meat consumption is expected to increase with per capita income in middle income countries and to decline with per capita income in high income countries; consumption of fruit and vegetables, fish, dairy products and higher-value food items is expected to increase with per capita income; and consumption of cereals and other carbohydrate-rich staple foods is expected to decline everywhere (FAO, 2004; Schmidhuber and Shetty). These trends will receive a further push by lower food prices, in real terms, despite what happened in 2007 and 2008, and urbanization.

A significant and increasing share of richer and more educated consumers everywhere will demand differentiated products, i.e. products which possess a certain quality characteristic which some consumers perceive as making that product different from, and better than, similar ones and, hence, worth paying more for. Such quality characteristics are linked either to the product *per se* – for example, its origin, health/dietary features, or the fact that it does not contain GMOs, added growth hormones or has not been subject to irradiation – or to the production process – such as the product being the result of organic farming, produced in accordance with

stringent environmental, animal welfare or ethical standards, or being a “fair trade” product.

Increased incomes and larger female participation in the labour market will lead to an increased demand both for more ready-to-be-consumed (convenience) food and for food consumed away-from-home.

Increased incomes in developed and higher income developing countries will induce stronger and more widespread environmental concerns, which, in turn, will induce stronger societal demands for minimum environmental standards for agricultural production, more stringent environmental cross-compliance constraints to be eligible for policy-related payments (where these exist) and more, and more effective, voluntary schemes, in which farmers receive financial compensation if they agree to implement environmentally friendly (well above mandated minimum standards) production practices, or to satisfy the growing demand for “public goods and services”, such as the maintenance of rural landscapes to which society attributes a value and is willing to pay for.

2.4 Demographic changes

World population is expected to keep growing in the next 20 years at a robust rate, slightly below 0.8% per year; this is a slower growth rate than that observed in the past and is decreasing over time. European population is expected to grow at a very slow rate; most of the increase in world population will come from increases in developing and middle-income countries.

Different birth and mortality rates will translate into differences in the age structure of the population. In countries/regions with higher rates of demographic growth younger generations will constitute a larger share of total population, while older generations will predominate where rates of growth of the population are negative or very low.

The expected growth in population, everything else held constant, will determine an increase in the *quantity* of food demanded; the expected changes in the age structure of the population, everything else held constant, will determine differences in the *quantity* and *composition* of food demanded. Per capita food demand will be higher where younger generations are a larger share of the population; the composition of food consumed will be different in countries/regions with different age distributions, with, for example, older people having more health-conscious consumption patterns.

2.5 Increased international competition as a result of changes in relative competitiveness of EU agricultures vis a vis other countries’

An additional source of increased market competition for EU agricultures will be changes in their relative competitiveness with respect to the agricultures of other countries as a result of factors other than domestic and trade policy changes, such as differences in cost-reducing structural adjustments, in the rate of adoption of

technological innovations (including, but not limited to, those which reduce costs), or in specialization in differentiated quality products.

Within the time horizon considered in this exercise, attention should focus on the increased competitiveness of the agricultural and food processing sectors in the relatively more developed and more dynamic parts of the developing world and in transition economies; changes in relative competitiveness in least developed countries and other developed countries seem less worrisome.

Among developing countries an important role will be played by further productivity and food quality improvements in large countries like Brazil, China and, to a less extent, India. However, it is important to recognise that these supply-side factors should be considered together with demand-side developments in the same countries (i.e. domestic demand increases as a result of increased population and per capita incomes).

While world trade in agro-food products has rapidly increased over time, developing countries as a whole have not gained market share; in fact, their total exports of agro-food products have increased, but the same has occurred for their imports, and the net result has been that their aggregate net trade deficit does not show significant improvements. If least developed countries only are considered, increases in income have not been associated with an expansion of their agro-food exports, while imports have expanded, with their net trade position worsening over time (Figure 2).

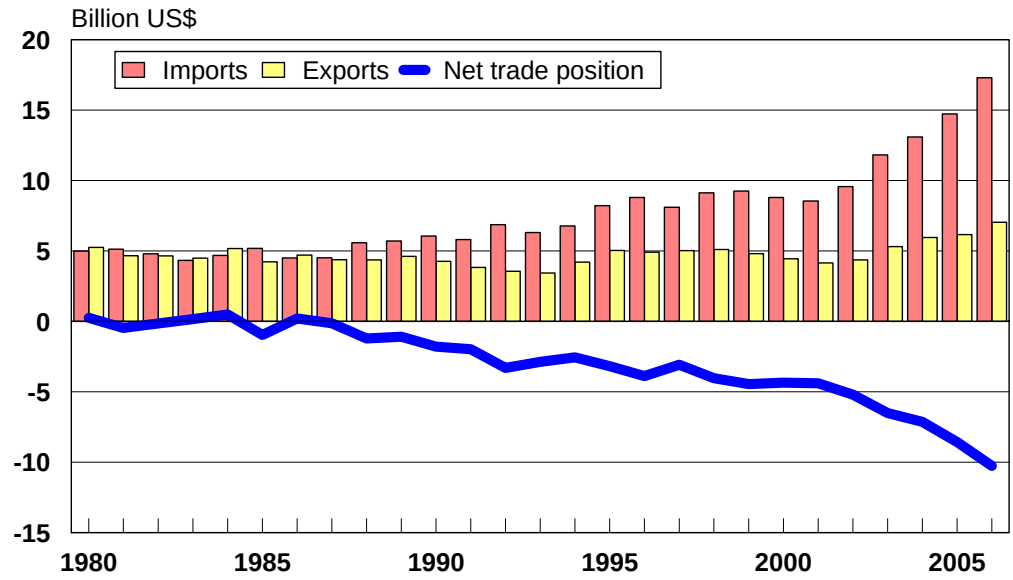
In the past 15 years China has become a net importer of agro-food products from being a net exporter (Figure 3); however, this change may be more the result of a government decision regarding consumption and investment choices than the result of changes in the relative competitiveness of China's agro-food sector (and, as a result, could easily change if that political decision is reversed).

India has seen both exports and imports increase in recent years with its net trade surplus fluctuating (Figure 4).

At the opposite end, Brazil is among the very few countries which in the past 25 years have increased agro-food exports while reducing imports; its net exports tripled between 2000 and 2006 (Figure 5). In 2007 Brazil was the fourth world exporter of agro-food products (preceded only by the EU, the US and Canada).

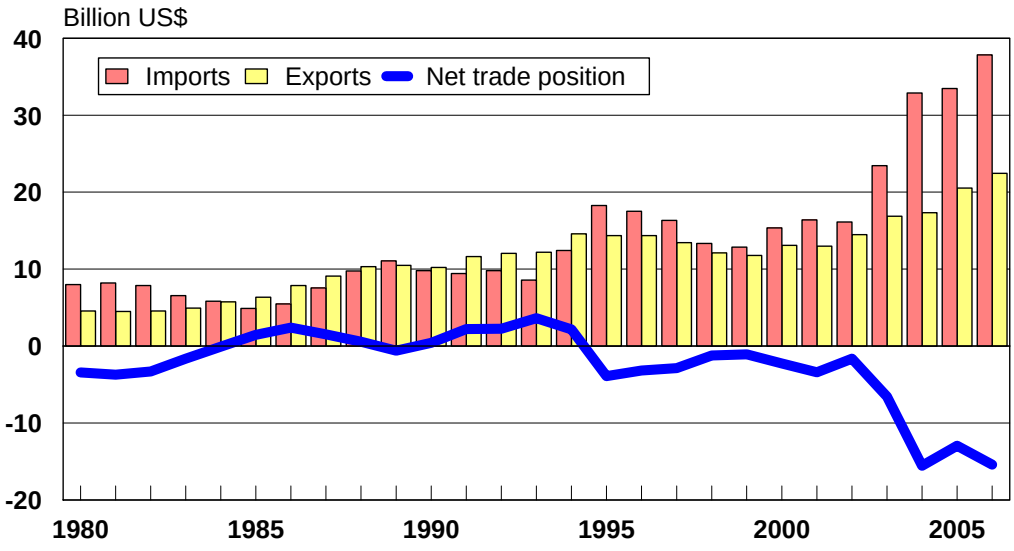
However, it is important to recognise that, despite the strong euro, EU-15 relative competitiveness in the production of agro-food products has not shown any decline in recent years; on the contrary, with exports and imports both expanding, EU net agro-food deficit has improved at a slow but steady pace (Figures 6 and 7). This is not the case, for example, for the US which, despite the weak dollar, over the same period have seen a significant deterioration of their agro-food net trade balance (Figure 8).

Figure 2 - Agriculture and agro-food products (raw and processed). Least developed countries imports, exports and net trade (US$, 1980-2006).



Source: Faostat.

Figure 3 - Agriculture and agro-food products (raw and processed). China imports, exports and net trade (US$, 1980-2006).



Source: Faostat.

Figure 4 - Agriculture and agro-food products (raw and processed). India imports, exports and net trade (US$, 1980-2006).

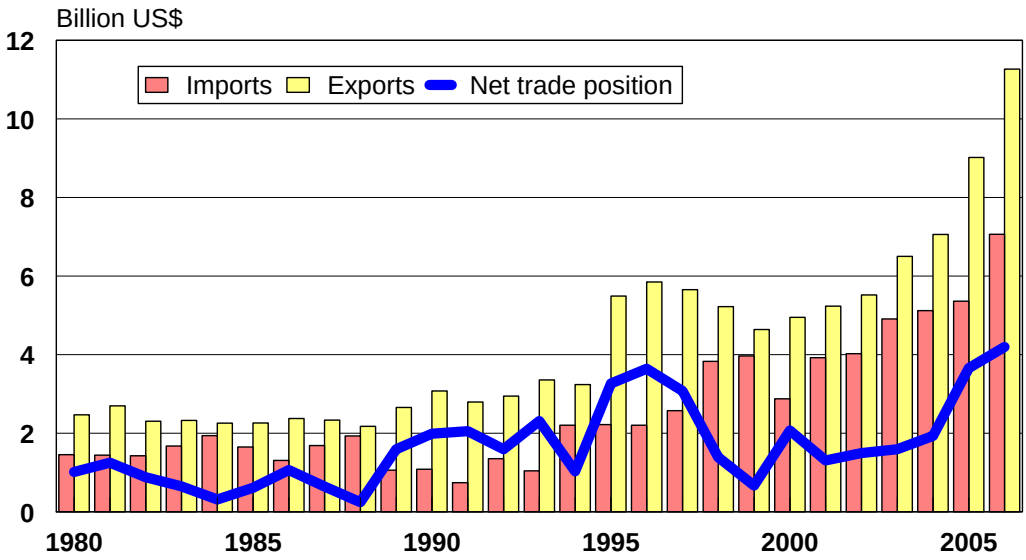


Figure 5 - Agriculture and agro-food products (raw and processed). Brazil imports, exports and net trade (US$, 1980-2006).

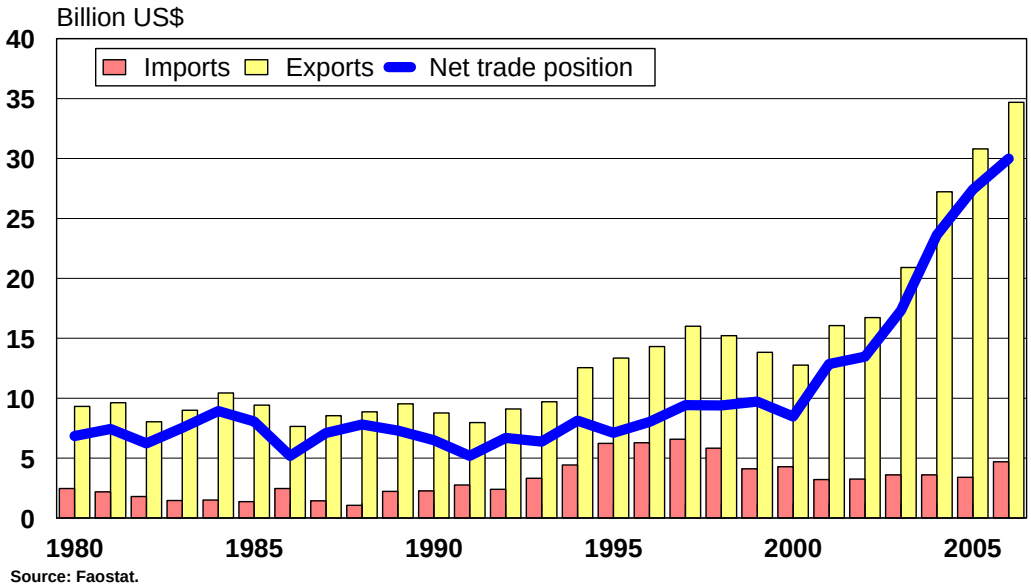


Figure 6 - Agriculture and agro-food products (raw and processed). EU imports, exports and net trade (includes intra-EU trade). (US$; 1980-2006).

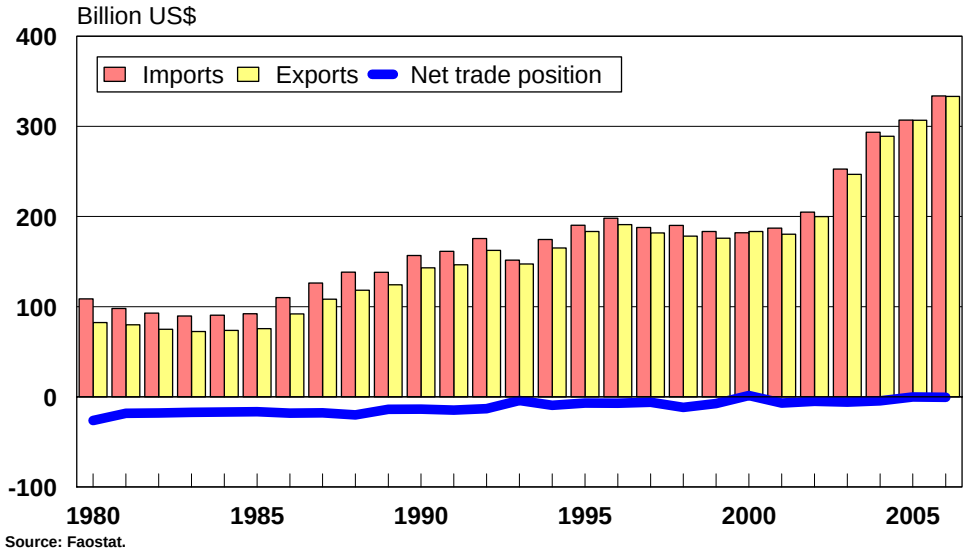


Figure 7 - Agriculture and agro-food products (raw and processed). European Union (96-03: EU-15; 04-06: EU-25; 07: EU-27) imports, exports and net trade extra-EU trade only) (euro, 1996-2007).

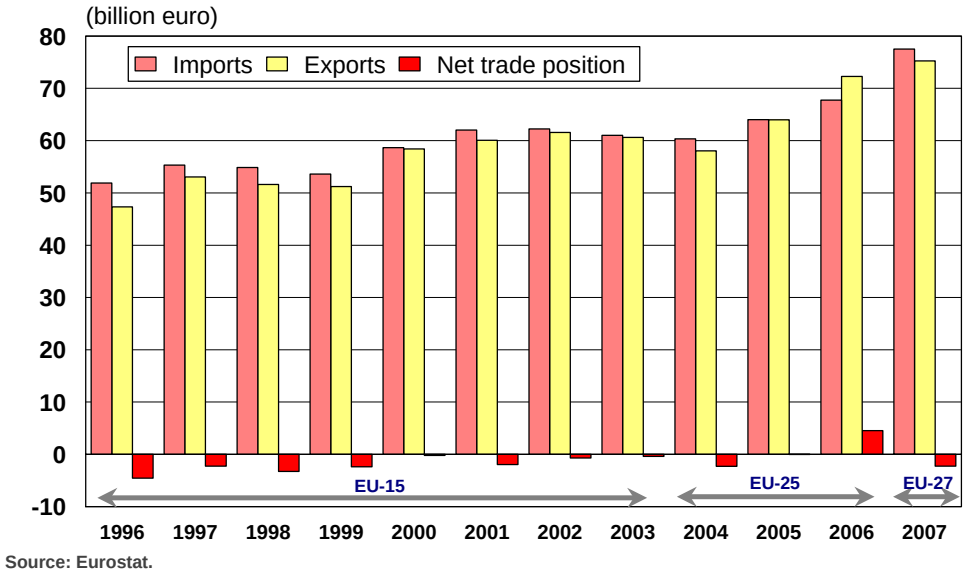
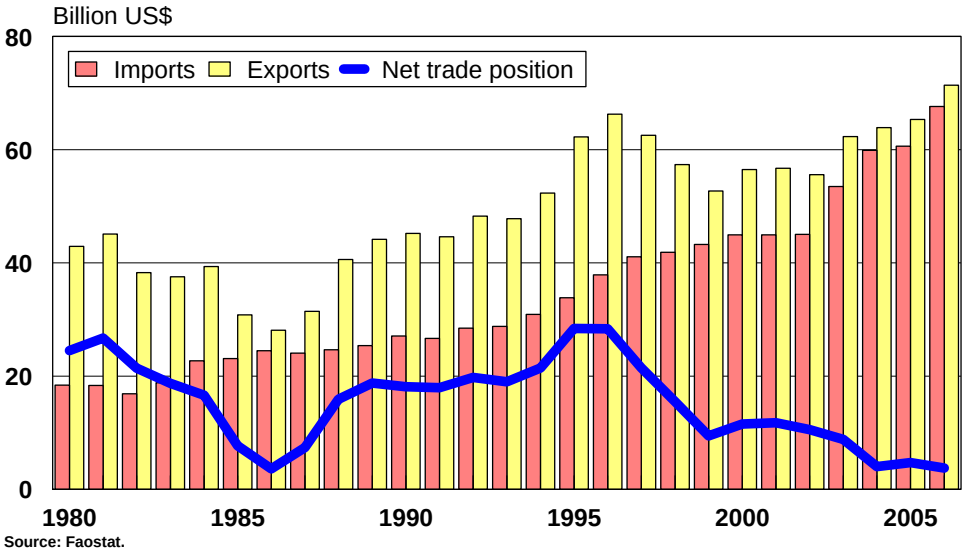


Figure 8 - Agriculture and agro-food products (raw and processed). US imports, exports and net trade. (US$; 1980-2006).



Specific attention should be given to developments in agricultural and food production in transition economies. Agricultural production in European and former-USSR transition economies has been recovering very slowly from the sharp fall which occurred following the sudden institutional switch from planned to market economy. Most transition countries have experienced severe and persistent problems due to weak institutions, market failures and lack of resources, as well as difficulties in introducing structural reforms and in identifying and enforcing land property rights. However, their potential for economically viable and efficient agro-food production is considerable, thanks to the large share of agricultural land farmed by large units, relatively low labour costs, and rapid improvements in physical infrastructures, investment conditions, the institutional environment and human capital. In transition countries which are members of the EU this catching-up process will be easier and faster than elsewhere. Agricultural productivity and food quality in these countries will rapidly increase; production will increase above the expected increase in domestic consumption (due to rapidly increasing per capita incomes) and food quality standards will improve. As a result, within the time horizon considered in this exercise production in excess of domestic consumption will be competitively exported, increasingly to markets characterized by richer consumers with relatively more sophisticated food demands.

Different components of the agro-food sector in Europe will choose different strategies to face expected increased competition, depending on their resource endowments. Some will choose to focus mainly on price-competitiveness, others will

choose product differentiation as their key to competitiveness. However, in the new environment there will be components that will find themselves unable to compete on either of these two dimensions.

2.6 Further structural changes in the food retail industry

Trends observed in recent years with respect to developments in the food retail sector will extend into the future. This means that we can expect to see (Brown; Codron *et al.*; Dries, Reardon and Swinnen; Fulponi; Henson and Reardon; Weatherspoon and Reardon):

(a) an increasing share of food sold to consumers in large stores everywhere in the world, in cities in developed countries as well as in rural areas in developing ones;
(b) a rapid increase in the (already extremely high) rate of concentration of the food retail sector;
(c) the setting by the retail sector of more private food safety and quality standards implying more stringent minimum standard requirements than those defined by existing public regulations;
(d) the outsourcing by the retail sector to its suppliers of food products of an increasing number of functions (such as packaging, pricing and logistic tasks needed to guarantee just-in-time deliveries of ready-for-the-shelf products);
(e) the imposition by the retail sector of increasingly restrictive requirements as a necessary condition for suppliers to be considered as potential sources, such as the capacity to deliver a "basket" of goods (rather than a single one), to provide large volumes and do so for an extended period of time throughout the year, with the goal of reducing the number of suppliers and, thereby, transaction costs;
(f) an increase in the imbalance in the distribution of market power along the food chain, with the highly concentrated retail sector holding significant and increasing power *vis a vis* its suppliers.

Developments in the retail industry can be seen as an effective barrier for international as well domestic trade. For the domestic and foreign segments of the industry able to provide the retail sector with the required product quality specifications and services, the private standards and other conditions imposed by the latter will serve as a protection from "rivals" who, albeit price-competitive, are unable to fulfil them (as in the case, for example, of developing country producers whose competitiveness derives mostly from lower labour costs); nevertheless, even successful suppliers will have to face the strong and increasing market power exerted by the retail sector.

The ability to satisfy these requirements implies effective *horizontal* cooperation among farms (in order to supply the required volumes of the products at the specified times and to guarantee product homogeneity), *vertical* cooperation or integration of

farms with other actors along the food chain (in order to provide the logistic services), investments and adequate human capital.[6]

These expected developments have strong implications for the agricultural sector, as they make it increasingly difficult to remain competitive in this strategic market segment (Dries, Reardon and Swinnen; Henson and Reardon).

The competitiveness and economic results of an increasing number of farms will depend not only on their own competitiveness, but on the competitiveness of the "agro-food system" they are part of; this system will include other farms as well as actors of the agro-food industry and its competitiveness will depend not only on the competitiveness of the farms and firms involved but, at least in part, on the quality and strength of the local economy and local institutions.

Only agro-food systems able to satisfy the conditions and the standards set by the modern retail sector will remain active on this growing share of the market, while the others will be progressively marginalized, unless they prove able to operate profitably on a "*short*" supply chain, selling to consumers either directly, at local farmer markets or through e-commerce, or through the rapidly shrinking "traditional" retail sector.

2.7 Market developments for non-food agricultural products

In recent years the importance of the production of non-food agricultural products has been growing and it can be expected to become much more relevant in coming years.

The most important component of non-food production by the agricultural sector will be inputs to be used to produce energy sources, such as fuels, as an alternative to non-renewable or unsustainable ones. At current consumption rates, known petroleum and natural gas reserves are expected to last roughly 40 years; if forecasted increases in energy demand in developing countries are taken into account, these energy sources could well be exhausted sooner (Schenkel).

Under current technologies ethanol production from sugar cane is significantly more efficient than from corn, wheat or sugar beet. Cost competitiveness in production of biofuels stays with countries with relatively large land endowments, such as for the production of ethanol from sugar cane in Brazil, not in Europe. However, should the EU decide to limit its dependence on energy imports, public incentives will make it profitable for farms to produce agricultural feedstocks to be transformed in fuels (in addition to making production of energy from biomasses and forestry products increase). The EU has set itself the ambitious goal of "green" fuels[7] being by 2020 10% of total used transport fuels (from around 1 per cent today). Should the EU-25 reach the original goal of replacing by 2010 5% of its expected total gasoline and

[6] Henson, and Maertens and Swinnen suggest that stringent private standards may well act, not only as barriers of trade for developing country exporters, but as trade catalysts, as they increase incentives for restructuring and vertical integration and reduce transaction costs.

[7] "Green" fuels include sources of renewable energy such as sustainable biofuels as well as hydrogen and "green" electricity.

diesel consumption with domestically produced biofuels only, this would imply 20% of its cropland devoted to the production of sugar beet, cereals and rapeseed; 38% of agricultural land would be needed to substitute by 2020 10% of the expected consumption of fossil transport fuels (Schenkel). The assessment made in the Scenar 2020 study is less pessimistic: meeting the 2010 5.75% goal entirely with domestically grown feedstocks would require "only" 9.4% of EU-25 agricultural land, while producing 10% of energy requirements for transport could take up 43% of the land currently used to produce cereals, oilseeds and sugar beet and set aside. These impacts on the European agro-food sector appear economically and environmentally unfeasible, but provide an idea of the order of magnitude of the pressure agriculture and food production in the EU may face as a result of the energy crisis and of the political decision to be made on just how dependent on energy imports Europe can afford to be.

The significant increase of the production of non-food products by the agricultural sector will put significant pressure on the demand for land. As a result, it can be expected that:

(a) marginal land which today is not used because unprofitable under current economic conditions, will be brought back in production;

(b) land currently used to produce food products will be diverted to the production of crops to be transformed in biofuels.

This will put upward pressure on prices of all food products, as a result of both increased production costs (due to the higher cost, or opportunity cost, of land) and the reduction in supply (due to land diversion). However, because in other parts of the globe land availability is and will remain less of a constraint than in Europe, world prices of food products will tend to increase less than in Europe; this means that actual increase of food prices in Europe will depend on the degree of market protection in place (the lower the protection of the EU food markets, the lower the increase in domestic prices as a result of increased production of biofuels, while production costs will still be higher).

The impact of increased production of biofuels on agriculture in Europe will be significant, even within the relatively short time horizon considered here. The extent of the actual magnitude of the induced changes will depend, among the other things, on:

(i) the increase in the price of fossil fuels;

(ii) the effectiveness of the actions taken to reduce consumption of traditional fuels in transportation;

(iii) the effectiveness of technological developments to increase the efficiency of production of renewable sources of energy for transportation (including biofuels);

(iv) in the level of subsidization of the production of biofuels in the EU;

(v) the linked decision on the role to assign to imports of biofuels; and

(vi) the degree of market protection for food products.

2.8 Agriculture and local development

The share of the agri-food sector in the economy, in terms of GDP and employment, and that of agriculture within the agri-food sector will both continue to decline, everywhere.

Everything else held constant, structural changes in developed country agricultures will be influenced by local development through the effects of the latter in terms of quality of life, competition for land use, availability and quality of services for farming and, eventually, family decisions on where to live and on the allocation of land, labour and financial resources. As regards rural households, these decisions include: those related to labour allocation between farm and off-farm activities; those by off-farm working family members to migrate or to stay in the area; family choices related to consumption and saving, to invest in agriculture or in other activities, to farm the land, despite negative profits, to rent it out or to leave it idle.

In developed and more advanced developing countries diversification processes in rural areas will continue and will yield an even wider spectrum of situations than that observed today; in most cases agriculture will not play a central role in the economy of rural areas.

2.9 Climate change

Climate change will play a more relevant role in a longer time frame than the one considered here. However, its development and consequences need to be considered in order to assess the need to introduce climate change driven specific policy actions. Climate change will bring increased temperatures, make extreme weather events (such as temperature picks, floods and droughts) more likely and reduce water availability. In Europe it will significantly affect agro-food production by modifying crops suitability, yield levels and variability, product quality and production costs. For a variety of reasons, agriculture in the Mediterranean regions appears to be more vulnerable to the expected effects of climate change than elsewhere in Europe (EEA, Olesen). In the short term, climatic change may produce positive effects in higher latitude regions and mountainous areas, by making the introduction of certain crops and varieties feasible, increasing yields and expanding cultivable areas; however, in the longer term net benefits in these areas become more uncertain (Stern).

In 2030 the *direct* effects of climate change on agriculture will be minimal, mostly limited to adaptation strategies by farmers; within this time horizon, these are not expected to affect crop patterns and farm structures significantly. In the short run the most relevant effects for agriculture will be those resulting from the action taken to mitigate current trends in climate change, such as the taxation of greenhouse gas

emissions or the introduction of regulations on the handling and disposal of manure in livestock operations, which will increase production costs.

3. The evolution of the global context and the future of the CAP

3.1 The EU, a major player in the global context

The EU is certainly a major player in the global context, not only with respect to agro-food and total merchandise world markets, but with respect to international relations and world development as well.

Considering extra-EU trade only, in 2007 the EU was the number 2 exporter of agro-food products (with 9.6% of the world market), preceded by the US and followed by Canada, Brazil and China, and the top importer (with 12.5% of total imports), followed by the US, Japan, China and Canada, in this order. If total merchandise trade is considered, the EU was the largest exporter (16.4% of world exports), followed by China, the US, Japan and Canada, and the number two importer (12.5% of the market), preceded by the US and followed by China, Japan and Canada (WTO).

This has two implications.

Whatever the EU does which affects its trade position, will effect the world; and in making decisions regarding its domestic and trade policies relevant for the agro-food sector, the EU carefully considers the possible implications, in terms of retaliation or concessions from other countries, for its trade in services and goods different from agro-food products.

But there is another dimension of the role of the EU in the global context which is relevant in understanding its actions, the international relations dimension. The EU, possibly more than other major actors, has been acting as a responsible global player in the international relations scenario, by taking into consideration, to some degree, the needs of the developing world in its strategic policy decisions. We should not forget that the number of people chronically undernourished is expected to equal in 2010 680 million,[8] 10% of world population. At the same time world food supply will be equivalent to 2900 calories per capita per day, well above both the 2500 calories per day intake needed to guarantee a healthy life and the 1900 calories per day which constitutes the threshold for undernourishment. In fact, the answer to hunger is not producing more food (as is sometimes claimed), but rather improving the capacity of the undernourished to access available food by reducing poverty.

In any case, whether the EU acts as a responsible player out of solidarity for the poor and hungry, or for more self-interested motives, to guarantee a favourable climate in international relations conducive for trade and investments, is beside the point for discussion; the point is that the needs of the developing world are taken into

[8] This is a rather conservative estimate which does not include the effects on malnutrition of the current financial crisis.

consideration by the EU in its strategic policy decision making and will likely continue to be so.

Hence, when explaining EU action in domestic and trade policies relevant for the agro-food sector, not only do the interests of this sector have to be considered, but also the strategic interests of the EU as a major player in the global trade market and its concerns for the needs of the developing world.

3.2 The global context 20 years from today

The main characteristics of the global context for world agro-food trade in a 20 year time horizon resulting from the key drivers identified above - and deliberately ignoring the many other relevant ones related to the domestic context, which are the specific focus of other contributions to this workshop - can be summarized as follows:

- Agricultural prices will continue to decline in real terms, despite the effects of the increased production of biofuels, which is expected to mitigate, but not to overcome, this expected trend.
- World food production will continue to increase at a higher rate than world population; were food equally distributed, there would be enough to feed everybody, both globally and regionally. Malnutrition will diminish but will not disappear; in most instances poverty will be the cause, i.e. a significant share of world population lacking sufficient means to access an adequate (in quantity and quality) food intake. Food insecurity will become more and more spatially concentrated and conflicts will remain a relevant additional factor to explain it.
- World agro-food trade will continue to grow; North-North, South-South, South-North and North-South trade will all increase; developed and developing countries' agro-food imports and exports will both expand. Developing countries' aggregate share of world exports will not change significantly while their share of imports may increase.
- Quality differentiated, higher value, food products will be demanded and consumed by an increasing share of richer and more educated consumers, both in developing and developed countries.
- The share of processed products and, more in general, higher value-added products in agro-food trade will increase, both in developing and developed countries.
- Non-food products, mostly to be transformed into biofuels, may become a significant share of world agricultural production.
- Everywhere a large and rapidly increasing share of food will be sold in large stores; the already high concentration of the food retail industry will continue to increase.

- Public confidence in food safety will remain at a level justified on the basis of effective monitoring activities of food chains by the public sector and of the even more restrictive quality standards imposed and effectively enforced on suppliers by the retail sector.
- Domestic and international markets will be much less distorted by policy interventions. Price volatility for widely traded goods will decline in markets which today are relatively less distorted and will increase in those which are currently more protected.
- Because of significantly lower border protection, European agro-food systems will be exposed to increased price competition, from both domestic and foreign farm and firm systems able to produce at low cost agricultural "commodities" or products with a relatively low level of differentiation.
- At the same time, trade policy liberalization and market developments will translate into global market opportunities, as well as increased competition, for European quality differentiated products.
- Agricultural and food systems in the largest and relatively more advanced developing countries and in Eastern European EU new member states will see significant productivity growth and improvements in their capacity to satisfy product standards required by the retail sector and to produce quality characteristics demanded by relatively more affluent consumers.
- The importance of agriculture in the economy of rural areas in Europe will continue to diminish. Social and economic diversification of rural areas in Europe - in terms, for example, of average income, sign and magnitude of income changes, composition of economic activities, demographics (attraction/loss of population; age structure), availability (quality and quantity) of material as well as immaterial infrastructures - will continue to increase.

While many farms will be able to adapt to the new environment and successfully face price and/or product differentiation competition, for a significant portion of European farmers this is not an option due to structural constraints; these limit both, the possibility to reduce production costs of relatively undifferentiated products, and the possibility to produce in large enough quantities and at reasonable cost quality goods. The relative importance of these farms in terms of land used and incomes generated is much smaller than in terms of number of holdings. In many cases the income generated by the farm activity is already a minor component in overall family income. The probability of a farm being in this position will be higher the smaller it is, the poorer the quality of the resources it uses, the less quality differentiated its products, the less horizontally and vertically integrated it is, the weaker the surrounding economic environment.

3.3 The CAP to be expected based on its reform process so far

Since the 1992 MacSharry reform of the CAP EU agricultural policies have been characterized by a progressive shift from a support fully "coupled" to production, (mainly) linked to "*how much*" farms produced (pre-1992), to a partially "decoupled" income support, (mainly) linked to "*what*" farms produced (1992-2003), to a "decoupled" support, linked to "*farming*" or "*land management activities*" (post-2003).

These changes in the form of farm/income support have occurred at the same time as:

(i) a reduction of financial resources for agricultural policies, in real terms;
(ii) a reduction of support indirectly provided to farmers by unknowing consumers through higher than otherwise food prices; and, hence,
(iii) a progressive reduction of support.

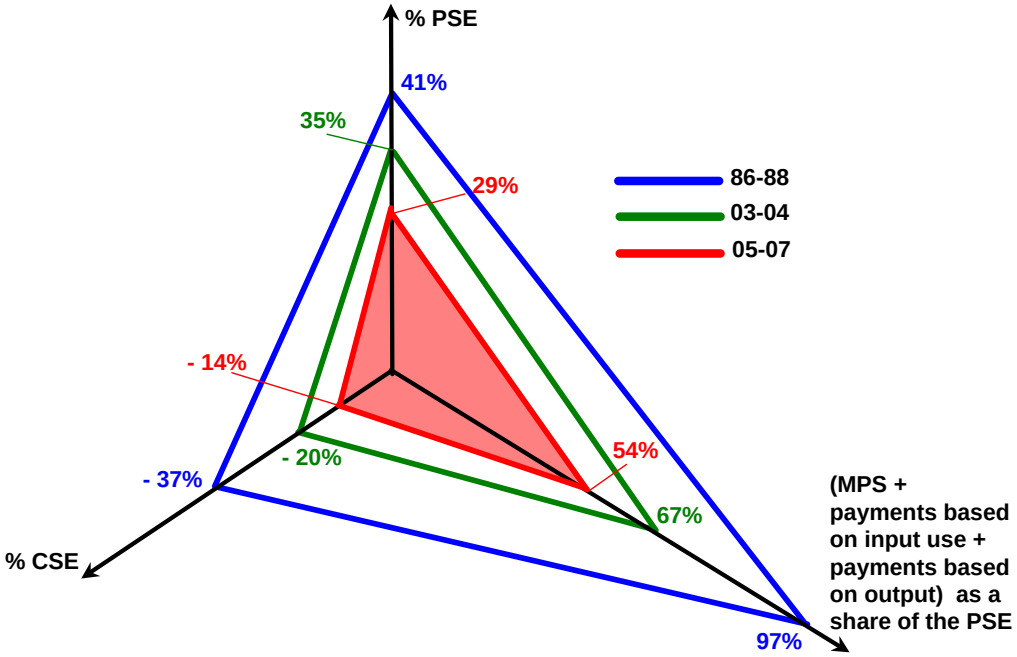
In Figure 9 changes between 1986-88 and 2005-07 in CAP support are showed based on some of the indicators calculated annually by OECD (OECD, various years); three indicators are used:

- the per cent Producer Support Estimate (%PSE), which gives "*the annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm gate level, arising from policy measures that support agriculture*" as a share of gross farm receipts;
- the per cent Consumer Support Estimate (%CSE), which gives "*the annual monetary value of gross transfers to (from) consumers of agricultural commodities, measured at the farm gate level, arising from policy measures that support agriculture"* as a share of consumption expenditure at the farm gate. "*If negative, the CSE measures the burden on consumers by agricultural policies, from higher prices and consumers charges or subsidies which lower prices to consumers."*;
- the sum of the most production- and trade-distorting forms of support ("*market price support*", "*payments based on output*" and "*payments based on input use*", as defined by the OECD) as a share of the PSE.

Figure 9 clearly shows the effects of CAP reforms until the Fischler reform, and then the significant effects of the latter already in the first few years of its implementation period. Developments in the CAP between 86-88 and 03-04 resulted in a reduction of the support provided to the agricultural sector (which declined from 41% of gross farm receipts to 35%), in a reduction of the implicit taxation of consumers (for every euro EU consumers spent on food the implicit taxation due to agricultural policies dropped from 37 cents to 20), and in a reduction of the distortionary effect of the CAP on production and trade, specifically due to its re-instrumentation (the share of the support linked to the most distortionary policy instruments declined from 97% to 67%). Changes were more pronounced in terms of the reduction of the distortionary effects of the CAP and of the implicit taxation of

consumers it induces, than in terms of reduction in farm support. The starting of the implementation of the Fischler reform[9] has induced a significant further step forward in this process; in 05-07 support to agriculture declined to 29% of gross farm receipts, consumer implicit taxation dropped to 14%, and the share of support linked to the most production and trade distortionary policy instruments became 54%.

Figure 9 - Evolution of European Union agricultural support between 1986-88 and 2005-07.



Legenda: PSE: Producer Support Estimate.
CSE: Consumer Support Estimate.
MPS: Market Price Support.

Source: OECD, various years.

The reforms of many Common Market Organizations which took place after the Fischler reform and the decisions taken in November 2008 at the end of the "health check" of the CAP did, and will soon reduce further, the %CSE and the production and trade distortions of the CAP.

[9] Countries could choose to introduce the Single Farm Payment, the most important policy change in the reformed CAP, in 2005, 2006 or 2007; the full implementation of the reform was to occur in 2008/09, when the expansion of milk quotas was to be completed.

If we try to imagine a CAP 20 years from today based only on a continuation of the trend in its reform process observed over the years, we should expect the following:

(a) fewer financial resources available for agricultural policies;
(b) lower support of the agricultural and food sector;
(c) the "regionalization" of direct payments;
(d) a more uniform CAP applied in the EU-15 and in the EU-12;
(e) support to be made conditional on more stringent and more effectively enforced cross-compliance constraints (although the opposite could be the case if a large reduction in direct payments occurs);
(f) more voluntary schemes in which payments to farms are given in exchange for the production of specific non-market, socially valuable, goods and services;
(g) more "space" given to national choices in the implementation of agricultural policies defined at the EU level.

In addition to these changes, which can somehow be seen as "*more of the same*" with respect to those observed in recent years, one could expect something new to be introduced in the instrumentation of the CAP, such as:

- new, and more effective, genuine safety net policy instruments against out-of-the-ordinary drops in farm incomes;
- a partial re-nationalization of agricultural policies.

3.4 The CAP and the challenges from the changed global context: is something missing?

The CAP described in the previous section appears inadequate to help European farm systems to cope with the challenges resulting from the changes in the global context (and, possibly, to respond to old and new demands for policies posed by European agricultures and European citizens).

Essentially what seems to be missing with respect to these challenges are more, and more effective, policies specifically aimed at strengthening the competitiveness of EU agro-food systems, both domestically and internationally.

Three main priorities for public intervention aimed at supporting the competitiveness of European agro-food systems can be identified:

- action to promote an "*economy of scale*" competitive wedge, supporting needed structural adjustment, targeting farms, food industry firms and agro-food systems who already are, and need to remain, competitive, and those that can become competitive as a result of the structural adjustment;

- action to promote a "*quality-based*" competitive wedge, supporting the production and effective marketing of quality differentiated products, both domestically and internationally;
- action to promote an "*innovation-based*" competitive wedge, strengthening the production and adoption process of innovations aimed at reducing production costs as well as improving the wide spectrum of product quality characteristics demanded by consumers and/or required by the retail industry.

3.4.1 The "*economy of scale*" competitive wedge

Although farm size alone is a relatively poor indicator of the structural strength of a farm, nevertheless it does provide a rough but clear, though partial, idea of the structural strength of a farm system. Average farm sizes in 2005 equal to 55.7 ha in the UK, 53.6 in Denmark and 48.7 in France, to limit the comparison within the boundaries of the EU, vs. 4.8 hectares in Greece and 7.4 in Italy (while, for example equal 23 hectares in Spain) (Table 1); this clearly signals the existence of a wide area within European agricultures characterized by binding structural constraints limiting the possibility to compete on production costs. It may be useful to underline the fact that, while average farm size significantly increased over time in most countries, between 1987 and 2005 it *declined* both in Italy and Greece. The issue becomes even more pronounced if new member states are considered; average farm size in 2005 is below 10 hectares in 7 out of 12 countries: Bulgaria (5.1 hectares), Cyprus (3.4), Hungary (6), Malta (0.9), Poland (6), Romania (3.3) and Slovenia (3.3) (Table 2).

In many EU countries a large share of farms are of limited size, a size which, by itself, impedes profitability. In these countries the issue of the "economy of scale" competitive wedge is of strategic importance. The very large share of EU farms small in size means that for many of them markets characterized by product differentiation are not a choice but the only alternative. However, the structural constraints which prevent them from successfully competing on prices also constitute a major problem in competing in differentiated product markets; producing and marketing quality products effectively and efficiently is easier and more likely to occur in larger farms than in small or medium ones.

The need to put in place effective policy instruments aimed at supporting structural adjustment strategies which include, but are not limited to, expanding farm size and farm capital as a means of reducing production costs and making it possible to strengthen production and marketing of differentiated products, appears evident.

What is needed are innovative financial instruments to support farms that are willing to expand, either by buying land or leasing it under long-term contracts.

In addition, careful attention should be given in agricultural policy design and implementation to avoid introducing incentives for unprofitable farms to remain active (as has been too often the case in the past), thereby reducing the supply of land.

Table 1 - European Union 15. Average farm size (UAA) in 1987 and 2005. (ha; % changes)

	1987	2005	% change 05-87
Austria	...	19,1	...
Belgium	17,3	27,1	*56,5*
Denmark	32,5	53,6	*65,0*
Finland	13,2	32,1	*142,9*
France	30,7	48,7	*58,5*
Germany	17,6	43,7	*148,2*
Greece	5,3	4,8	*-9,8*
Ireland	22,7	31,8	*40,1*
Italy	7,7	7,4	*-4,5*
Luxembourg	33,2	53,8	*61,9*
Netherlands	17,2	23,9	*39,2*
Portugal	8,3	11,4	*36,9*
Spain	16	23,0	*43,9*
Sweden	33,5	42,1	*25,7*
United Kingdom	68,9	55,7	*-19,2*

Source: Eurostat.

Table 2 - European Union (12, 25, 27). Average farm size (UAA) in 2005. (ha)

	2005
Bulgaria	5,1
Check Republic	84,1
Cyprus	3,4
Estonia	29,9
Hungary	6,0
Latvia	13,2
Lituania	11,0
Malta	0,9
Poland	6,0
Romania	3,3
Slovak Republic	27,4
Slovenia	6,3
EU27	11,9
EU25	16,0
EU15	21,4

Source: Eurostat.

3.4.2 The "*quality-based*" competitive wedge

However, no matter what, for many European farms competition mostly based on price - and, hence, on production costs - is an unfeasible option due to their small size, even after they are helped to expand and having taken into account the fact that farm size is not the only factor determining a farm's price competitiveness.[10] For them the only way-out is trying to compete on product quality differentiation. As mentioned before, the definition of product quality assumed here is relatively extensive and includes the geographical origin of the product, is containing/not containing GMOs, being the result of organic farming, having been produced in line with environmental, or animal welfare standards significantly above those set by existing mandatory regulations, produced and marketed respecting specific ethical standards, as is the case with "fair trade" products.

Although many European agro-food systems already enjoy a "quality-based" competitive wedge, many others appear incapable of exploiting the market competitiveness generated by the qualities of what they produce, due to their poor individual and/or collective strategies; for many others the economic value of that wedge is shrinking and unevenly distributed along the chain from farms to consumers.

A wide consensus exists on the need to re-think what the EU calls "product quality policy" in the agro-food sector; it will be important to see how the process started by the Commission in October 2008 with its "Green Paper" will develop.

An effective policy strategy should possibly involve two integrated components, a regulatory one and one supporting individual and collective actions geared to develop, promote and market quality products.

Regulatory actions are a necessary condition to develop a "quality-based" competitive wedge, but are by no means a sufficient condition for the exploitation of the potential economic and social benefits associated to quality products. Effective regulations are needed to provide consumers with the necessary guarantee with respect to the quality characteristics of the products they want to purchase, characteristics which in many cases they cannot be sure about even after consuming them, as most characteristics of agro-food products can be classified as "credence" ones; this is always the case for quality characteristics of the production process, but it is often the case for product quality characteristics as well. From the regulatory policy point of view the need is (a) for effective identification of the product and process quality characteristics to be satisfied, in order to provide consumers with the assurance that what they are buying is what they want to buy, and (b) for an effective system of controls to assure consumers (and non-cheater producers, who share the same interest) that what is sold as having a given quality characteristic, as specified by the relevant regulation, does actually have it. There is a growing concern that regulations often

[10] Quality of land, quantity and quality of fixed investments, environmental and climatic micro-conditions are among the additional factors which significantly effect a farm's price competitiveness.

define quality characteristics too loosely with respect to consumer expectations of the quality characteristics they want to buy (how many consumers know the difference between PDO and PGI regulations? how many consumers of "Prosciutto di Parma" know that hams are cured around Parma, but produced in an area which extends over a large part of Italy?), and that controls are not so effective as to deter greatly the occurrence of illegal behaviours. Attention should focus on the institutional design of the decision process and on the role and power in this process of different relevant stakeholders (Anania and Nisticò).

One specific issue is obviously that related to products not containing GMOs. The long term evolution of consumer attitudes towards GMOs remains difficult to assess. However, introducing effective and stringent regulations (a) to guarantee (if technically feasible, which is not a trivial issue) the "*identity preservation*" of products not containing GMOs, and (b) to allow the development of market *segmentation* through rules on labelling, in order to give (domestic and foreign) consumers the possibility to choose between GM and non-GM products, is, based on exclusively economic considerations, a strategy which would give EU producers of non-GMO products a relevant competitive wedge and - for these reasons, if not for others - needs to be carefully considered.

The second component of effective policy action to promote the "quality-based" competitive wedge should be aimed at supporting needed structural investments by actors along the chain of quality products to help them exploit the value-added associated to their product's specific quality characteristics (in my region, Calabria in Italy, olive oil accounts for 30% of the total value of agricultural production and a large share is produced in hilly areas without having to use inputs forbidden by the regulation on organic farming; olive oil is certified organic in order to have access to financial support provided by rural development policies, but it is sold almost entirely as if it were the result of conventional farming, wasting a significant amount of value-added because of lack of marketing skills and infrastructures). This second component of the strategy to promote a "quality-based" competitive wedge should not only be coherent with the first one, but the two should be fully integrated. It should provide financial support to strengthen and expand the production of the quality product, to develop and implement the needed horizontal and vertical cooperative or integrated strategic plans, to promote the product commercially, and to market it. Support should be given to both individual and collective strategies, but in the case of the former only if they are part of a collective strategic plan.

3.4.3 The "*innovation-based*" competitive wedge

The increased competition European agro-food systems will be exposed to in the less distorted, less protected market environment envisaged for 2030 means that their competitiveness will crucially depend, more than it has done in the past or it does today, on maintaining an "innovation-based" competitive wedge, i.e. a competitiveness based on a factor - research - for which Europe has, and will maintain

for a while, a comparative advantage with respect to its more aggressive international competitors.

It is important to underline that maintaining and strengthening an "innovation-based" competitive wedge is crucial for *all* European agro-food systems, regardless of their choice of strategic market position in the "*Price x Product differentiation competition*" space.

The ability to maintain this competitive wedge depends on the capacity to *continuously produce* and *rapidly adopt* technological innovations in a wide spectrum of areas, related to both the reduction of production costs and the improvement in the many product quality characteristics demanded by consumers and/or imposed by the retail sector.

A detailed discussion on which specific priorities would best address the need for maintaining an "innovation-based" competitive wedge goes beyond the mandate of this paper; however, they should extend over a very wide spectrum of innovations, including product innovation, innovation in the production processes, in post-harvest technologies, in marketing, and in the services sold with the product, from traceability and technologies minimizing safety risks to transportation and packaging.

Finally, maintaining and strengthening an "innovation-based" competitive wedge requires much more than researchers producing innovations. Timing is a strategic factor in keeping an "innovation-based" competitive wedge, as most of the benefits from an innovation only last until competitors have adopted it. This means that competitiveness will depend as much as on producing innovations which are useful and feasible for European agro-food systems, as on making sure that all possible actions are taken for a quick and smooth adoption process.

Maintaining and strengthening an "innovation-based" competitive wedge implies addressing the challenge of ensuring cooperation and coordination among all main actors along the *priority setting-research-development-extension-adoption* chain. This implies the need to develop *integrated innovation policy plans* for the agro-food sector which extend over priority setting, research, development, extension and adoption activities in a single plan of action involving all relevant public and private actors along the chain.

4. Conclusions

In very simple terms, in the global context described in section two of the paper three main clusters of farms will emerge:

(i) farms which, based on their resource endowment, will be active on markets characterized mainly by price competition and will be able to adapt successfully to the foreseen changes;

(ii) farms which, based on their resource endowment, will be active on markets characterized mainly by competition based on product differentiation and will

be able to adapt successfully to the foreseen changes by effectively producing and marketing quality differentiated products;

(iii) farms which will not be able to adapt and compete profitably; a significant share of the farmers involved will leave agriculture. The actual share of the farmers who quit farming will depend on several factors, including their socio-demographic profile and the characterization of the local economy. Part of the land currently used by those farms which will cease to be active will remain unused, while part will be worked by other farms, which will now be able to expand in size and use that land more efficiently.

The number of farms to fall in the third cluster crucially depends on the public action taken to help them do what is needed, depending on the strategy they adopt, to remain or become competitive.

The current CAP and the CAP which can be foreseen by looking only at the reform process since the early 1990s does not seem adequate to help EU farm systems to cope with the new challenges. New policy instruments are needed to help farmers who can potentially compete on the market.

Current or regionalized direct payments are certainly a significant and much needed improvement with respect to the "coupled", first, and then "partially de-coupled" support of the past, but are not what is needed.

What we should consider is the phasing out over a certain number of years of current direct payments and, at the same time, the phasing in of new, or re-designed, policy instruments. This means going beyond the current two pillars articulation of the CAP. Support should not be linked to the status of farmer, or to the role of care-taker of the rural environment, *per se*, but selectively targeted and linked either to the easily and objectively verifiable production of public goods and services well above the minimum standards set by existing regulations, or to the implementation of a strategy plan of action to remove the factors limiting the competitiveness of the farm (or of the farms and firms of a vertically coordinated production chain).

Finally, while agricultural policies should be carefully scrutinized to assess their coherence with other strategic policy goals of the EU, we should avoid designing agricultural policies to directly pursue (…or claiming to pursue) social welfare, public health, environmental or energy goals, or the socio-economic development of rural areas; these goals should be left to the specific policies addressing them, which will do so much more efficiently and effectively.

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